KARNATAKA STATE OPEN UNIVERSITY

MUKTHAGANGOTRI, MYSURU-06

MBA. IN INFORMATION TECHNOLOGY

FUNDAMENTALS OF E-COMMERCE

BLOCK 1

BLOCK1 INTRODUCTION

Electronic commerce is termed as E-commerce in short. E- Commerce is an action of conducting business transaction for selling goods, services and information via communication network.

First unit focuses on defining E-commerce, components of E-commerce, listing of trends and features that play a role on E-commerce. Unit two focuses on describing different categories of E-commerce. E-commerce is supported by basic underlying framework that identifies the task of hardware and software components and services provided by them explained in Unit 3. Unit 4 gives the detailed description on the important component of E-commerce i.e. Internet and Web.

This block consists of 4 units and is organized as follows:

Unit 1- What Is E-commerce? The Difference between E-commerce and E-business, E-commerce: A Commercial Transaction, Technological Building Blocks Underlying E-commerce: the Internet, Web, and Mobile Platform, Major Trends in E-commerce, Unique Features of E-commerce Technology

Unit 2- Business-to-Consumer (B2C) E-commerce, Business-to-Business (B2B) E-commerce, Consumer-to-Consumer (C2C) E-commerce, Consumer-to-Business (C2B), E-commerce Mobile E-commerce (M-commerce), Social E-commerce, Local E-commerce: A Brief History, Understanding E-commerce: Organizing Themes, Academic Disciplines Concerned with E-commerce

Unit 3- The Internet, Technology Background , Internet – Key Technology concepts, TCP/IP, IP addresses, Domain names, DNS and URLs, Client Server Computing, Cloud computing model, Mobile platform

Unit 4- Hypertext, HTML, XML, Web servers and clients, Web browsers, Communication tools – E mail, messaging apps, online message boards, Internet Telephony

UNIT -1: INTRODUCTION TO E-COMMERCE

STRUCTURE

1.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Define E-commerce
- ✓ Categorize between E-commerce and E-business
- ✓ Explain technological components of E-commerce
- ✓ Gather major trends in E-commerce
- ✓ List the unique features of E-commerce

1.1 INTRODUCTION

E-commerce is a modern business methodology that addresses the needs of organization, merchants and consumers to cut costs simultaneously improving the quality of goods, services and information by increasing the speed of service delivery. It is basically moving trade to World Wide Web (www) through internet.

E-commerce doesn't require employing sales person and acquiring luxury showrooms thereby spending less money. The faster customer response, improved service quality and minimizing product cycle time (Difference between product purchase-time to delivery time) are the main goals of 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. Although the terms Internet and Web are often used interchangeably, they are actually two very different things. The Internet is a worldwide network of computer networks, and the Web is one of the Internet's most popular services, providing access to billions of web pages. An app (short-hand for application) is a software application. The term is typically used when referring to mobile applications, although it is also sometimes used to refer to desktop computer applications as well. A mobile browser is a version of web browser software accessed via a mobile device. More formally, e-commerce can be defined as digitally enabled commercial transactions between and among organizations and individuals. Each of these components of our working definition of e-commerce is important.

Digitally enabled transactions include all transactions mediated by digital technology. For the most part, this means transactions that occur over the Internet, the Web, and/or via mobile

devices. Commercial transactions involve the exchange of value (e.g., money) across organizational or individual boundaries in return for products and services. Exchange of value is important for understanding the limits of e-commerce. Without an exchange of value, no commerce occurs.

Advantages of E-commerce are:

- Provides 24*7 operation of trading
- Global reach of business is attained through internet
- Cost of acquiring, servicing and retaining is minimized
- An extended enterprise is easy to build since all players of E-commerce plays a role
- Intermediation or Brokerage is removed. **E.g.** ITC started website called e-Choupal.com
- It has power to provide best on both offline and online worlds
- It provides technology based customer interface
- Here customer controls the interaction
- Helps in collecting knowledge of customer behavior

Disadvantages of E-commerce are:

- Lack of security
- Inability to provide audit logs
- Lack of 3rd party verification in case of disputes
- Not suitable for perishable or very expensive goods

E-commerce opportunities for Industries are:

- Financial services: **E.g.** Birla Global Finance Ltd.
- Stock trading: **E.g.** Motilal Oswal
- Banking: **E.g.** ICICI
- Legal services: **E.g.** IntegrCom.com
- Professional services: **E.g.** HKS Architects (hksinc.com)
- Tour and travel: **E.g.** Trivago.in
- Health care: **E.g.** narayanahealth.org

1.2 DIFFERENCE BETWEEN E-COMMERCE AND E-BUSINESS

E-commerce: It involves commercial transactions through website over the internet for the activities such as online purchasing of product, online money transactions, online ticket booking and online customer care. The end customer will play a major role in the process of E-commerce. Customer communication is through the website and application.

E.g. Amazon, Myntra, Paytm

E-commerce sales can include every element of a sale: ordering a product, paying for a product, and having it delivered. It might also involve only part of the process. For example, a customer might order a product online to be picked up at the store. Payment might be conducted online or at the store when the item is picked up. Either way, the transaction still involved an element of e-commerce.

Many businesses also sell through virtual marketplaces in addition to their own websites. For example, a popular brand like Nike will sell shoes from its website, as well as through an online retailer like Amazon. Whether you buy it from Nike's website or Amazon's, the transaction is still an example of e-commerce.

E-business: It involves business transactions over internet mainly for inventory management such as acquisition of raw materials and supply chain management. The information sharing is among the internal domains of the business. Website, Enterprise Resource planning (ERP) and Customer relationship management (CRM) is required for E-business.

Many processes that are described as e-business might be handled in-house through a company's network, or it might be something the company outsources to a provider that specializes in whatever service is desired. By producing them in-house, standard businesses may incorporate some elements of e-business into their plan—the two types of businesses are not mutually exclusive.

Sometimes the difference between a standard business and an e-business is just a matter of how business is conducted. For example, if you are an advisory firm helping people choose the right furniture, then you are a business, but if you run a website where people can compare furniture options, then you are an e-business.

E.g. E-auction, Hardware and software development site

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 as depicted in figure 1.1.

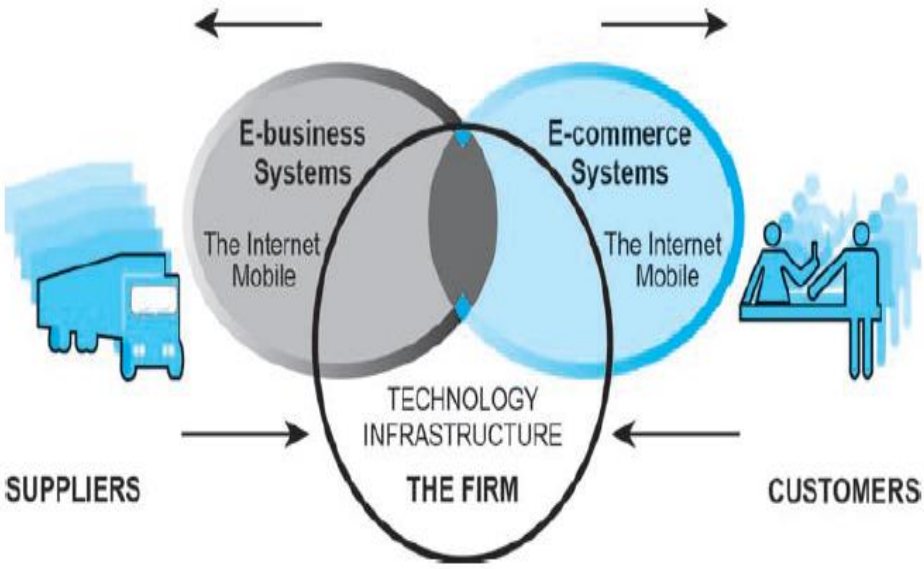

Fig. 1.1. The difference between e-commerce and e-business

1.3 E-COMMERCE: A COMMERCIAL TRANSACTION

E-commerce: A Commercial Transaction E-commerce defined simply, is the commercial transaction of services in an electronic format. In general terms, e-commerce is a business methodology that addresses the needs of organizations, traders and consumers to reduce costs while improving the quality of goods and services and increasing the speed of service delivery. It refers to all forms of transactions relating to commercial activities, including both organizations and individuals that are based upon the processing and transmission of digitized data, including text sound and visual images. A broad definition of ecommerce is: "The marketing, promoting, buying & selling of goods electronically, particularly via the Internet", which encompasses, interalia, "e-tailing (virtual shop fronts), EDI, which is B2B exchange of data; e-mail & computer faxing; [and] B2B buying and selling".

A narrower definition is "the trading of goods and services in which the final order is placed over the Internet". The Office of Tax Policy at the US Department of Treasury defines e-commerce most broadly as any transaction that occurs with the facilitation of electronic "tools and techniques". The Internet Tax Freedom Act (ITFA), 1998, on other hand provides the only legal definition of e-commerce as "any transaction conducted over the Internet or through

Internet access, comprising the sale, lease, license, offer or delivery of property, goods, services or information, whether or not for consideration, and includes the provision of Internet access". The US Census Bureau measures e-commerce by looking at "the value of goods and services sold online whether over open networks such as the Internet, or over proprietary networks running systems such as EDI".

According to European Commission, e-commerce encompasses more than the purchase of goods online. It includes a disparate set of loosely defined behaviours, such as shopping, browsing the Internet for goods and services, gathering information about items to purchase and completing the transaction. It also involves the fulfilment and delivery of those goods and services and inquiries about the status of orders. Like any other sustained business activity it also means conducting consumer satisfaction surveys, capturing information about consumers and maintaining consumer databases for marketing promotions and other related activities. Interestingly, its Directive on E-commerce (2000/31/EC) defined the term 'commercial communication' instead of defining 'E-commerce'. Article 2(f) defined 'commercial communication' as any form of communication designed to promote, directly or indirectly, the goods, services or image of a company, organization or person pursuing a commercial, industrial or craft activity or exercising a regulated profession.

The Gartner Group5 defines e-commerce as an evolving set of:

- Home-grown or packaged software applications that link multiple enterprises or individual consumers to enterprises for the purpose of conducting business.
- Business strategies aimed at optimizing relationships among enterprises and between individuals and enterprises through the use of information technologies.
- Business processes (such as procurement or selling or order status checking or payment) that, by definition, cross boundaries, and
- Technologies and tools that enable these applications, strategies and processes to be implemented and realised.

1.4 TECHNOLOGICAL BUILDING BLOCKS UNDERLYING E-COMMERCE

Technology is the backbone of e-commerce. Not only does it help connect sellers and customer on mobile and web platforms, but also enables the effective management of customer

orders, deliveries, returns and payments of purchased goods. In fact, technology plays an important role throughout the e-commerce value chain, in areas such as recruitment, marketing, and advertising, among many others. Internet, Web and Mobile platform acts as a backbone for automating E-commerce.

Internet: The interconnection of computer networks built on common standards spread globally is called internet. TCP/IP was introduced when US defense department feared on nuclear attack of computers. In addition, IP (Internet Protocol) was introduced when the data needed to be passed on wired path. Earlier around 1960's internet was used to connect small number of mainframe computers and their users. The growth of internet globally evolved with increase in number of internet hosts with domain names. With the introduction of graphical user interface (GUI) for web in 1993, it took only 10 years to accumulate 53% of U.S. share. Internet helps in interconnecting 2 different individuals, messaging, mailing, document sharing and shopping.

Web: Web is a subset of Internet. It is the information system comprised of collection of documents and other resources that runs over Internet. These resources from any location can be accessed from browser by using web address called as Uniform Resource Locator (URL).

Earlier Internet was used for messaging, document sharing and remote computing. But the introduction of web in 1990's made internet more powerful with the collection of web pages. These web pages containing text, graphics, voice, animation and other interactive objects are created from Hypertext Markup Language (HTML). HTML pages can contain text, graphics, animations, and other objects. The Web introduced far more powerful and commercially interesting capabilities of direct relevance to commerce. The size of web is increasing exponentially day by day. In essence, the Web added color, voice, and video to the Internet, creating a communications infrastructure and information storage system that rivals television, radio, magazines, and libraries.

Mobile Platform: In the early years of e-commerce, the Web and web browsers were the only game in town. Today, in contrast, the Internet via a mobile app plays a vital role than by using a desktop computer and web browser. This is the devised technology of internet infrastructure. It allows software and services over the internet to be run on the mobile devices such as laptops, tablets and Smartphone. Lately, due to the emerging technologies and dependency over mobile devices, mobile platform play a vital role in improving E-commerce.

1.5 MAJOR TRENDS IN E-COMMERCE

Major trends in E-commerce based on 3 different perspectives are as follows:

1. **Business Perspective:**
   - *Retail E-commerce* shows a major growth in India, China & South Korea
   - With the excessive usage of mobile apps, *Mobile retail E-commerce* explodes
   - *Social E-commerce* based on social networks such as Instagram, Facebook and Pinterest take part in advertising and providing search, buy buttons that increases the customer product purchase.
   - With the increase in utilization of On-demand services such as Uber, Zomato etc helps in rise of *Local E-commerce*
   - Small business and entrepreneurs are entering into E-commerce market place over the infrastructures created by well-established industries such as apple, facebook, google, ebay etc.
2. **Technological perspective:**
   - Since consumer is relied on the mobile devices for most of his day to day basis the mobile marketing, mobile advertising and online transactions have become popular.
   - Mobile messaging platforms such as Whatsapp, snapchat are also been used for advertising.
   - The companies are making investments in pay-per-click marketing mechanism to move ahead in future.
   - The cloud computing technology is evolving since software and content of consumer is expanding. The information is been stored in some "cloud" servers through internet and it is made available from any connected devices.
   - Internet of Things connecting large number of computers is getting evolved.
   - The large amount of data from online interaction is tracked by the firm initiating big data.
   - The useful data patterns are obtained from large amount of flooded information using big data analytics that result in acquiring customer interests and target.

- Emerging artificial intelligence are being adopted by the companies by making recommendations for the customer purchases based on their searches and likes.

3. Societal perspective:

- Self-publishing of user created contents, photos, videos and creative works over social network forums such as posts, blogs and tweets are increasing thereby connecting people.
- Disclosing ones motives directly over a social network threatens privacy.
- Adult's participation in social network like Facebook have become popular in all sectors of population.
- Government is facing challenges for posing taxation over online trading.
- The digital copyright owners have found a huge success by protecting intellectual property rights posing agreement over online distributors.
- Spamming and online security threats by hacking customer information are increasing.
- On-demand E-commerce services are creating a space for jobs.

Trends in ecommerce industry emerge from various things. How customers shop. What they buy and how they respond to marketing tactics employed by businesses. Within the last decade, a lot of new trends have emerged with a profounding influence. Ecommerce giants like Amazon, Walmart, and Alibaba have been at the forefront of adopting and benefiting from such trends.

The ecommerce industry is always changing and this year (2021-22) has been no different. More than ever, merchants are creating and/or improving their ecommerce businesses to meet customers where they are.

Let's discuss, the Ecommerce after COVID-19: Our world is changing. Ecommerce will only get bigger and better as the year moves on. New technologies will help it achieve that. The coronavirus has changed things all over the world, and it's expected that buying behavior is likely to boom. Even now, more and more people prefer buying things online because they are not willing to step out and risk exposure to new variants.

In 2021, retail e-commerce sales amounted to an estimated 4.9 trillion U.S. dollars worldwide. This figure is forecast to grow by 50 percent over the next four years, reaching about 7.4 trillion dollars by 2025. The quarantine had laid bare the importance of having an ecommerce business

last year, and now, it’s easy to say that if you don’t have an ecommerce business, you will miss out on serious revenue.

As with all trends in e-commerce marketing, things start to fade after a point. Businesses need to revamp their strategy with every change. This is so that business always stay on top of the marketing game. It's also to show customers that no matter what trends, the product will always be in vogue!

1.6 UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY

Before E-commerce the marketing and trading of goods were sales driven and not focused on particular sector of customers. The customers were trapped as they could not compare for the best pricing and quality of the product. The lack of business transparency created differences in market information.

The arise of E-commerce helped merchants to gain more knowledge about customer behaviour by targeting different sectors of customer on fixing the different price segments for a product. There are 8 unique features of E-commerce challenging traditional business methods by enforcing new technological aspects.

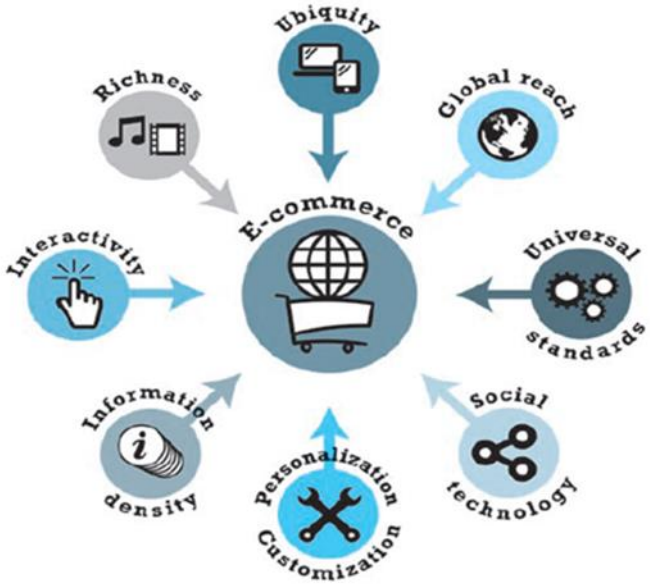

Fig. 1.2. Eight unique features of e-commerce technology

a. **Ubiquity:** In traditional business, the customer has to go to the market place spending his time and energy. But E-commerce is featured by Ubiqity where the customer is made availabe to purchase at all places, all time through mobile E-commerce creating *Marketspace*. This not only saves customer time and energy from travelling to the geographical location of the market place, but also reduces the mental effort of the customer to complete the task.

b. **Global Reach:** The total number of customers any business can attain is called reach. The traditional marketing was through telivision, radio and newspapers which is basically pertaining to some particular region. Hence the business can attain only local reach, whereas E-commerce makes the customers to be atrracted even outside the national boundary through internet with less cost.

c. **Universal standards:** The technical standards for conducting E-commerce over the internet shared all over the world is called Universal standards. It helps in,

   - decreasing the *Market entry costs* as expenditure is mostly to get goods to market.
   - Reducing *Search costs* as effort for finding the suitable product is made easier over internet
   - Detecting *Product Price* as product description and pricing is shared with every customer.
   - Finding suppliers, product delivery terms easily from anywhere in the world.

d. **Richness:** The complexity and content of message refers to richness of information. The E-commerce technology such as interactive media and customer targeted messaging using chatbot provides rich information resulting in trade of complex goods and services easily.

e. **Interactivity:** The two way communication between merchant and consumer or between 2 consumers represents the interactive feature of E-commerce. The consumer can directly chat with the merchant that gives them same face to face experience. The interactions are in terms of community forums, providing product comments, responsive websites and social networking sites by share and like of a product.

f. Information density: The quality and amount of information among all participants of E-commerce is called information density. The pricing transparency of the products removes the information disparity among the consumers at the same time cost transparency helps the consumer to find out at what cost the product has been purchased by merchants resulting in competitive trading techniques. The merchants makes use of customer information to target over different sectors of population for different product pricing over selling the same goods resulting in product price discrimination. The cost discrimination is also made based on quality and brand of a product.

g. Personalization and customization: Based on the previous purchases and interactions made with the customer, the merchant can collect the customer behaviour from information density. Hence personalization helps in targeting the specific individuals by messaging based on his interests. The customization mentions changing of delivered product or services based on customer requirement.

h. Social Technology: Previous to E-commerce, the contents were prepared by the experts at some location and it was consumed by the mass. But with the origination of social E-commerce technologies the user is given liberty to create his own content and share it world wide in the social network. The user is also given the privilege to channel their own content consumption.

1.7 CHECK YOUR PROGRESS

1. Electronic commerce (EC) is defined as the online exchange of _____ between firms, and also between firms and their customers.
    a. Money
    b. Services
    c. Goods
    d. All of the Above

2. What is the definition of e-commerce?
    a. The transmission of e-mail over the Internet
    b. Sales through catalog and telephone
    c. The conducting of business and communication transactions by electronic means

d. Information provided by the U.S. Census Bureau

3. The dimension of E-commerce that enables commerce across national boundaries is called _____.
    a. Interactivity
    b. Global reach
    c. Richness
    d. Ubiquity

4. Which of the following is an example of E-business?
    a. Amazon's inventory control system
    b. Amazon.com website
    c. Amazon mobile app
    d. Amazon's Pinterest page

5. Which of the following is used to purchase products at different locations from any customer location at any time
    a. Marketplace
    b. Marketspace
    c. Social network
    d. The internet

Answers to check your progress:

1. All of the Above
2. The conducting of business and communication transactions by electronic means
3. Global reach
4. Amazon's inventory control system
5. Marketspace

1.8 SUMMARY

In this unit we discussed the definition of E-commerce, advantages and disadvantages of E-commerce when applied over business, examples for industrial opportunities created by E-commerce. We also discussed, how a Commercial Transaction E-commerce and the commercial

transaction of services in an electronic format. In addition, how E-commerce and E-business differ from each other. Later, technologies behind business over internet were explained along with the features that made E-commerce more popular.

1.9 KEYWORDS

2 **E-commerce**: It is a modern business methodology that addresses the needs of organization, merchants and consumers to cut costs simultaneously improving the quality of goods, services and information by increasing the speed of service delivery.

3 **E-business**: It involves business transactions over internet mainly for inventory management such as acquisition of raw materials and supply chain management.

4 **Internet**: The interconnection of computer networks built on common standards spread globally.

5 **Web**: the information system comprised of collection of documents and other resources that runs over Internet.

6 **Mobile Platform**: The devised technology of internet infrastructure which allows software and services over the internet to be run on the mobile devices.

7 **Reach**: The total number of customers any business can attain.

8 **Universal Standard**: The technical standards for conducting E-commerce over the internet shared all over the world.

9 **Richness**: The complexity and content of message refers to richness of information.

10 **Information Density**: The quality and amount of information among all participants of E-commerce is called information density.

1.10 SELF ASSESSMENT QUESTIONS

1. What is E-commerce? Suggest why it is important to study E-commerce.
2. Differentiate E-commerce from E-business
3. Describe different features of E-commerce.
4. Mention the benefits of Universal Standards.
5. Mention some business consequences resulted from growth from information density.
6. How does ubiquity of E-commerce impact consumers?
7. Discuss advantages and disadvantages of E-commerce.

1.11 REFERENCES

1. Laudon, Kenneth C., and Carol Guercio Traver. *E-Commerce 2017 Business*. Pearson, 2020.
2. AdNabu,(2021), https://www.adnabu.com/ecommerce-marketing-trends

UNIT -2: TYPES OF E-COMMERCE

STRUCTURE

2.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Explain different types of E-commerce
- ✓ Differentiate Business-to-Business and Consumer-to-Consumer
- ✓ Categorize between Social E-commerce and Local E-commerce
- ✓ Understand academic disciplines concerned with E-commerce
- ✓ Describe brief history of E-commerce
- ✓ Discuss about organizing themes

2.1 BUSINESS-TO-CONSUMER (B2C) E-COMMERCE

Online business selling to individual customer is called Business to Consumer E-commerce. The working of B2C model is as seen in the figure 2.1. B2C Model makes the customer to visit the virtual mall and complete the registration. The customer then selects product to buy which is passed on to the merchant to pass the order. Once, the payment is processed using Credit/debit card the product maintained in the inventory will be shipped for delivery and customer will receive the service. The merchant also maintains after sales service to retain customer or to ensure customer loyalty.

E.g. Flipkart

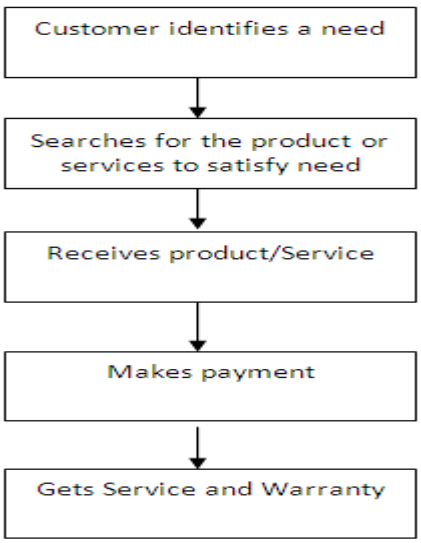

Fig.2.1 The working of B2C model

B2C e-commerce includes purchases of retail goods, travel and other types of services, and online content. B2C has grown exponentially since 1995 and is the type of e-commerce that most consumers are likely to encounter. It refers to a business platform, involving a business entity and consumers. It is a retail version of e-commerce known as e-tailing. Selling goods or services through web based shops. It is the most popular model of e-commerce as it has helped moving commercial transactions from public domain to private domain. B2C is about creating a better offline shopping experience – online.

2.2 BUSINESS-TO-BUSINESS (B2B) E-COMMERCE

Online business selling to another business is called Business to Business E-commerce. It can be represented as in Figure 2.2.

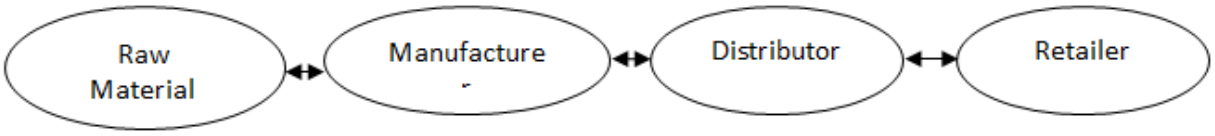

Fig. 2.2. Business-to-business (b2b) e-commerce

The common elements of B2B exchanges are:

- **Common marketplace** is an open place that makes business people comfortable to search a product.
- **Standardized documentation** is maintained since business people are trained.
- **Price quotes, Historical price and after sale information** is maintained.
- **Confidential transactions between businesses** have to be maintained as money involved between 2 businesses is very high and the trust needs to be maintained between them.

In B2B model, the business people will review the standardized document called as catalog in marketplace and identifies the specification for the product. Once the requirements are recognized, the request is posted for proposal by selecting the vendor based on his reputation. After receiving the filled purchase order the vendor prepares invoice for the purchase order

followed by payment. Once the payment is successful, the shipment is arranged and the product is organized for inspection and reception. Salesforce, LinkedIn are some of the examples.

In B2B version of online transaction(s) the manufacturing organization takes a lead in setting up a business platform. This platform acts a business communication channel between the manufacturing/software developer entity and its vendors/suppliers, i.e., whatever was being done earlier in offline manner are now being done online. Thus a B2B platform acts as a business facilitator, negotiator and dealmaker, which facilitates, negotiates and clinches deal between independent or dependent business units.

The two primary business models used within the B2B arena: Net marketplaces, which include e-distributors, e-procurement companies, exchanges and industry consortia, and private industrial networks.

2.3 CONSUMER-TO-CONSUMER (C2C) E-COMMERCE

Individual Consumer selling product to another individual consumer is called Consumer to Consumer Ecommerce. In C2C model, the consumer goods ready to sell is placed for auction and market maker helps in preparing a product catalog, providing search engine and maintaining timely transfer of funds to the seller along with secured transactions for buyer. For example,

1. **Inforocket.com/ askme.com/ quora.com –** paid C2C model where experts are selected who can answer**.**
2. **Olx/ Quikr –** free C2C model used to sell any goods and services**.**
3. **Ola/ Uber –** on demand services.

In C2C e-commerce, the consumer prepares the product for market, places 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.

Interestingly, with the passage of time these online models have also matured. A B2C model is no longer a 'business-to-consumer' model, it is integrating functionalities of other models like C2C or C2B also. It is far easier for a website that is successful at selling one product to branch into others. For example, Amazon has moved from selling books only to selling sea foods and other products as well. It is now hosting auctions, and courting eBay traders. Similarly, eBay is

no longer a C2C platform but is also selling goods at fixed price, like e-tailer, B2C. Online market place is more dynamic and ready for all kinds of innovation. Yahoo! has made so many recent changes to its business that it is being called “the new google”, while Google is using it’s advertising formula to steer specialist buyers straight to specialist online sellers.

2.4 CONSUMER-TO-BUISNESS (C2B) E-COMMERCE

Consumer-to-business (C2B) is a business model where an end user or consumer makes a product or service that an organization uses to complete a business process or gain competitive advantage. The C2B methodology completely transposes the traditional business-to-consumer (B2C) model, where a business produces services and products for consumer consumption. The C2B approach evolved from the growth of popular consumer-generated media and content across different consumer segments, such as websites, blogs, podcasts, videos and social networks.

It is an innovative retail-marketing platform, where a business entity offers a variety of packages or options to entice the online customer. Here the business entity/ service provider bids for consumer. It is often referred to as ‘reverse auction’. Such models are widely prevalent in tourism and travel industry. The tour operators, hotels and airlines not only give deep discounts to the consumers but also give them option to negotiate the prices. It is a pro-active version of e-commerce as it offers deals, packages or bundle of products at competitive prices.

In the C2B model, a consumer provides a business with a fee-based opportunity to market a product or service on the consumer's website or blog. In this type of relationship, a website owner is paid to review the product or service through blog posts, videos or podcasts. In most cases, paid advertisement space is also available on the consumer website.

2.5 MOBILE E-COMMERCE (M-COMMERCE)

Nowadays, most of consumer’s time is spent over mobile devices for booking services, making online payments and searching online contents. Hence, mobile devices play a vital role in E-commerce. The process of using mobile devices involving cellular and wireless networks for online transactions over the internet is called as Mobile E-commerce. Currently, M-commerce adds on a major trend in upgrading E-commerce.

The steady shift of consumer behavior to online shopping from retail stores hasn't been lost on wireless electronic device manufacturers. Mobile electronic commerce is yet another way to purchase online items from electronic storefronts or online services from automated service providers. Computer-mediated networks enable these transaction processes through electronic store searches and electronic point-of-sale capabilities. Other mobile devices include dash-top mobile devices, personal digital assistants or smartphones.

Device vendors target younger generations who use mobile phones more than any other age group, prompting online vendors to collaborate with big names in the telecommunications industry to promote the advancement of e-commerce to m-commerce such that users can shop online from their phones. Most of these advances are accomplished through sophisticated application designs that are constantly emerging and evolving.

One of the features of m-commerce sites is the adaptation of websites to make them easier to use with smaller screen sizes. There are a number of adaptations that can be made including the removal of large graphics and the optimization of fonts for easier viewing and ergonomics.

2.6 SOCIAL E-COMMERCE

E-commerce generated by social networks and online connections is called as Social E-commerce. Demand in creating Facebook, Instagram, Pinterest and YouTube accounts, liking and disliking of the social contents, development of collective online tool for shopping, building online connections through friend recommendations, creating virtual shops over social network, buy button and shopping tabs upholds E-commerce.

The social E-commerce is also collaborated with mobile devices by creating an app for Facebook, YouTube and Instagram to keep the consumers engaged through messages. This variation of Social E-commerce is called as **Conversational commerce**.

Social e-commerce is often intertwined with m-commerce, particularly as more and more social network users access those networks via mobile devices. A variation of social e-commerce known as conversational commerce leverages the mobile connection even further. Conversational commerce involves the use of mobile messaging apps such as Facebook Messenger, WhatsApp, Snapchat, Slack, and others as a vehicle for companies to engage with consumers.

Understanding Social Commerce: Social commerce professionals create and post messages and interactive features that promote online sales and other e-commerce initiatives. Some of the marketing tactics social commerce employs include:

- Inviting users to vote on product style or choices
- Offering personalized buyer options
- Applying large and striking graphics to attract viewer clicks
- Using videos to show the product in use and from multiple angles
- Encouraging user-submitted photos, commentary, and feedback
- Using celebrity endorsements of the product line
- Linking directly to the checkout or shopping cart
- Offering promotions or giveaways to users who share the product on their feeds

Social commerce encourages social shopping tools such as forums and communities where buyers and sellers discuss their online shopping experiences and compare notes.

Special Considerations:

Social commerce is a growing and changing field of online marketing that works in conjunction with social media and online shopping growth. Fashion and shopping-related blogs use social commerce and media to entice shoppers to purchase linked items online.

For example, many popular fashion blogs have Instagram accounts that allow followers to like, share, and comment on the offered product. The tagged article frequently links directly to the store's shopping cart or check-out desk.

2.7 LOCAL E-COMMERCE

Engaging the consumer to E-commerce based on his/her geographic location is called Local E-commerce. The local shops or merchants use various marketing strategies to attract their regular customers for their shops creating a better business. For example,

- **Reliance mart** – Providing discount coupons for the next purchase.
- **Med Plus** – providing points on each purchase that could be summed up for the discount.

2.7.1 A Brief History

E-commerce is said to be,

- Started in 1970 when pharmaceutical firm known as Baxter Healthcare created a B2B model using telephone based modem for hospitals to reorder supplies from Baxter.
- In 1980 PC based remote order entry system was introduced based on Electronic Data Interchange (EDI) standards that helped the firm to exchange commercial documents and perform digital transactions.
- In 1981 the first large scale B2C model based digital transaction system called as '**Minitel'** was introduced. It is a French videotext system with 8inch screen.
- In 1994, AT&T, Volvo, sprint started Banner based advertisements and in 1995 First sales of banner ad space was done by Netscape & Infoseek.
- Around 2006, the E-commerce services such as ticket booking travel services, retail products and online banking was added on.

Overall, E-commerce is divided into 3 periods,

1. **1995-2000 :** Period of Invention
2. **2001-2006 :** Period of Consolidation
3. **2007 :** Period of Reinvention

1. **Period of Invention**: This period of E-commerce involved selling of simple Retail products over internet since there was no bandwidth for complex products. The marketing was carried using simple static ads and static web pages were used to represent brand for large companies. The search engines were not powerful. Around 2000 stock market found a great fall as most of the companies disappeared due to .com crash.

   E-commerce created a milestone in the commercial history where Internet was connected to Personal computers creating Local area network. Universal communications was made possible by creating freely accessible HTML pages with cheap computers.

   E-commerce also played a major role economically at early times. As the products of different brands are made available to customers over internet by creating a market space,

   - There is an equal distribution of price, cost and quality reducing information asymmetry.

- Decreases search and marketing cost.
- Intermediate costs spent over distributors and retailers are removed.
- The collection of customer details on every search made over market space helps merchants to conduct customer targeted marketing with less effort.
- Price changing cost of a product is low.
- Fiction free Ecommerce is managed by adjusting the price of the product on demand.
- The new firm can easily build brand name recognition by expanding the customer base.
- New technologies applied creates an informative and community like features. The customer once dependent on particular company web interface would less likely switch to other competitors.

2. **Period of Consolidation**: This period of E-commerce is technology as well as business driven. Strengthening the brands became more important than creating new brands in this era. Financing companies moved on to capital markets. Along with retail services, travel and financial services were added on. The business upgraded with presence of broadband network and cheap Personal computers. Better search engines were implied for marketing over internet. Ads were based on user queries, rich media and video. Behavioral target on customer was carried on through websites and email. Multiple websites were created for each product.

3. **Period of Reinvention**: This period of E-commerce shows the growth of blogs, video, photo sharing apps and wikis for content. The use of mobile devices became common which helped to incorporate local goods and services in E-commerce. On demand services were supported by mobile apps and cloud computing by selling unused assets such as cars, spare rooms and personal time. Hence, this period of E-commerce was considered to be business oriented, technological as well as sociological. Entertainment content is considered as a major source in this period. Marketing was pursued through social networks, word of mouth, virtual marketing and use of analytical tools for personal marketing. Firms having static web pages were moved on to apps and social network for expanding their brand.

2.8 UNDERSTANDING E-COMMERCE

Understanding E-commerce at one attempt has become burdensome. Hence, it is acknowledged into 3 perspectives – Technological, Business and Society.

2.8.1 Organizing Themes

i. *Technology:* Understanding E-commerce based on the infrastructure incorporated. Due to the development of digital computing and communication technology, understanding E-commerce requires the basic knowledge of information technology and fundamentals of computer science. It needs the wide knowledge gathering not only on web and internet but also cloud computing, desktop computers, mobile devices, local area network, different databases, client server computing, data mining technologies. These technologies are applied over the different business cycle such as supply chain management, resource planning and customer relationship management. One must also be aware of concepts such as packet switching communication, TCP/IP protocol, HTML5, CSS and software programming like Flash and javascript for client side and PHP, java for server side of client/ server computing to understand E-commerce better over technological perspective.

ii. *Business:* Understanding E-commerce based on Return on Investment for a company. Once the technology is applied over business, it becomes commercial creating interest and excitement on E-commerce and presenting business with new ways of production and transaction. Strategies and plans for new firms need to be changed. One need to have the knowledge of digital markets, digital goods, business models, firm and industry, value chains, value webs, industry structures, consumer behavior and financial analysis to understand E-commerce in business perspectives.

iii. *Society:* Impact of globalized E-commerce is putting pressure on a society to enforce laws of nations. It affects individual privacy of the customer by gathering his information for behavioral marketing. The intellectual property right is influenced by sharing digital copy of copyrighted contents such as music, books and videos. The issue of equity, equal access and content regulations will take hold of welfare policy.

2.8.2 Academic Disciplines Concerned with E-commerce

There are 2 perspectives of E-commerce: Technical and Behavioral

1. **Technical**:
    - The *computer scientist* sees E-commerce as one of the salient application of Internet. They are involved in development of computer hardware, software and improvement of standards, encryption, databases and operations.
    - The *operational management scientist* builds mathematical models to apply for the business and improvise them.
    - The *information technology team* is concerned about data mining, business analytics, search engine and artificial intelligence.

2. **Behavioral**:

    - The *information scientists* are interested in E-commerce because of its involvement in industry value chains, structure and corporate strategy.
    - *Economists* are concerned about online consumer behavior, digital goods pricing and identical features of digital electronic market. They also corporate with market scholars to collect consumer response to market and ad campaigns, understand the firms potential to brand, segment markets, target consumers and position products to achieve good Return on Investment. (ROI)
    - *Marketing scholars* are focused in marketing ways, development of brand and extension of the firm, understand online consumer behavior, analyze the capability of E-commerce technologies to divide and target consumer groups.
    - *Management scholars* are concerned on entrepreneurial behavior and challenges taken by newly started firms developing organizational structures in less time.
    - *Finance and accounting scholars* are interested on valuation and accounting practices of E-commerce.
    - *Psychologists* are focused on study of Internet usage, web usage as a social network and communication tool.
    - *Legal scholars* are focused on preserving intellectual property, privacy and content regulations.

2.9 CHECK YOUR PROGRESS

1. eBay, Amazon.com belongs to which of the below segments
    a. B2B
    b. B2C
    c. C2B
    d. C2C
2. The primary source of financing during early years of E-commerce was _____
    a. Bank loans
    b. Venture capital fund
    c. Large retail firms
    d. Initial public offering
3. Which of the following is not a technology to gather consumer information?
    a. Spy ware
    b. Cookies
    c. Gmail
    d. Anonymizers
4. _____ is a set of planned activities for getting profit in a market place.
    a. Business model
    b. Profit model
    c. Business plan
    d. Revenue plan
5. The best product to sell in B2C E-commerce are _____.
    a. Small products
    b. Digital products
    c. Fresh products
    d. Perishable products

Answers to check your progress:

1. b) B2C, they involve in the process of selling goods and services directly to the consumers.
2. b) Venture capital fund, small money invested over a firm.

3. d) Anonymizers, it is a proxy server that acts as a shield between client computer and the internet.
4. a) Business Model
5. b) Digital products, they can be sold and distributed repeatedly without replenishing inventory.

2.10 SUMMARY

In this unit we discussed the different business models such as B2C E-commerce, B2B E-commerce, C2C E-commerce, Mobile E-commerce, Social E-commerce and Local E-commerce. We discussed process involved in different types of E-commerce by mentioning some examples. In general terms, e-commerce is a business methodology that addresses the needs of organizations, traders and consumers to reduce costs while improving the quality of goods and services and increasing the speed of service delivery. The evolution of E-commerce in 3 periods is talked over. We also discussed on different perspectives of understanding the E-commerce based on organizing themes and academic disciplines.

2.11 KEYWORDS

1. **Business-to-Consumer E-commerce (B2C)**: Online business selling to individual customer is called Business to Consumer E-commerce.
2. **Business-to-Business E-commerce (B2B)**: Online business selling to another business is called Business to Business E-commerce.
3. **Consumer-to-Consumer E-commerce (C2C)**: Individual Consumer selling product to another individual consumer is called Consumer to Consumer Ecommerce.
4. **Mobile E-commerce:** The process of using mobile devices involving cellular and wireless networks for online transactions over the internet is called as Mobile E-commerce.
5. **Social E-commerce:** E-commerce generated by social networks and online connections is called as Social E-commerce.
6. **Local E-commerce:** Engaging the consumer to E-commerce based on his/her geographic location is called Local E-commerce.
7. **Conversational commerce**: The process of engaging the consumers through messages over mobile devices by creating an app for Facebook, YouTube and Instagram.

2.12 SELF ASSESSMENT QUESTIONS

1. Explain major types of E-commerce.
2. Describe the basic themes required for understanding E-commerce.
3. Discuss on major academic disciplines contributing to E-commerce.
4. Explain 3 periods of E-commerce evolution.
5. What is conversational E-commerce? Explain.

2.13 REFERENCES

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UNIT -3: E-COMMERCE INFRASTRUCTURE

STRUCTURE

3.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Understand key concepts and background of Internet Technology
- ✓ Define the terms IP address, Domain names, DNS and URLs
- ✓ Describe what is the use of domain names
- ✓ Explain client server computing model and cloud computing model.
- ✓ Describe Mobile Platform in detail.

3.1 THE INTERNET

The internet is derived from the word internetwork. It is an interconnected network of computers called as hosts providing services for individuals, linking business, educational institutions and government agencies. It is not controlled or owned by any organizations. The services provided are such as email, messaging, shopping, research, music, video etc.

It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronic and optical networking technologies. The Internet carries a vast array of information resources and services, most notably the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail.

One of the popular services provided by Internet is web. Web is a collection of pages containing graphics, contents, video, audio and other attractive objects created from a programming language called as HTML. Web browser is used to host the web pages and navigation from one page to another happens on the click of hyperlinks.

Most traditional communications media, such as telephone and television services, are reshaped or redefined using the technologies of the Internet, giving rise to services such as Voice over Internet Protocol (VoIP) and Internet Protocol television (IPTV). Newspaper publishing has been reshaped into Web sites, blogging, and web feeds. The Internet has enabled or accelerated the creation of new forms of human interactions through instant messaging, Internet forums, and social networking sites.

The origins of the Internet reach back to the 1960s when the United States funded research projects of its military agencies to build robust, fault-tolerant and distributed computer networks. This research and a period of civilian funding of a new U.S. backbone by the National Science Foundation spawned worldwide participation in the development of new networking technologies and led to the commercialization of an international network in the mid 1990s, and resulted in the following popularization of countless applications in virtually every aspect of modern human life. As of 2009, an estimated quarter of Earth's population uses the services of the Internet.

3.2 TECHNOLOGY BACKGROUND

It was stated that the Internet was started 55 years ago and it is divided into 3 phases.

1. **Innovation Phase (1961-1974):** This phase started with the fundamentals of Internet. The concepts like packet switching, global computer network, common communication protocol called as TCP/IP and common addressing scheme for all computers connected to the network were introduced. Client/server computing was implemented on hardware and software to share files, run applications and send messages. In this phase, internet was basically implemented to connect large mainframe computers on different college campus.
2. **Institutionalization Phase (1975-1995):** In this phase, Internet was made of use by US Department of Defense (DOD) and National Science Foundation (NSF). They provided funds and authorization for the development of Internet. Later the wide area packet switched network with distributed control called as Advanced Research Project Agency network (ARPANET), the hyperlink concept of navigating from one page to another, the concept of making internet available to all called as ‘civilian internet’, the idea of giving names to network address called as Domain name system (DNS) for easy understanding of the clients was commercially introduced. ‘Netscape’ a first commercial web browser was initiated during this time.
3. **Commercialization Phase (1995 onwards):** The private corporations took over the expansion of internet over military and colleges resulting in establishment of fully commercial civilian network. This period was the beginning of E-commerce providing

services for retail stores and auctions. The discussions were made over future needs of security and functionality over internet technology.

3.3 INTERNET- KEY TECHNOLOGY CONCEPTS

In 1995, Federal Networking Council (FNC) termed Internet as network that supports Transmission Control Protocol (TCP), uses IP Addressing Scheme where information system is logically linked together by a globally unique address space and provides voice and data services to the public. The basic concepts required to understand Internet is packet switching, TCP/IP communication protocol and client/ server computing.

Packet Switching: It is a segmentation of digital message into several individual units called as packets. These packets are dispersed along several paths from the source and reassembled at the destination point.

Earlier, the communication was through the dedicated network between one end to another end of the terminal called as circuit switching network. Here, the point to point network has to be setup before the communication can proceed and large amount of communication time is wasted for pause between words and assembling the circuit segments. This drawback led to the introduction of packet switching network.

In packet switching network, the messages are divided into segments called as packets. Each packet is appended with other information such as source address, destination address, length of the message, total number of packets sent, error control bits and flow control bits. These packets are dispersed along different paths through special purpose computers called as routers that interconnects different computer networks to make up an internet. Each router guides the packets for taking up the next path based on the program written over it called as routing algorithm ensuring packet reaches the destination computer where all the packets are assembled to get the message. This process helps in using any spare capacity over a network unlike dedicated circuit switching network.

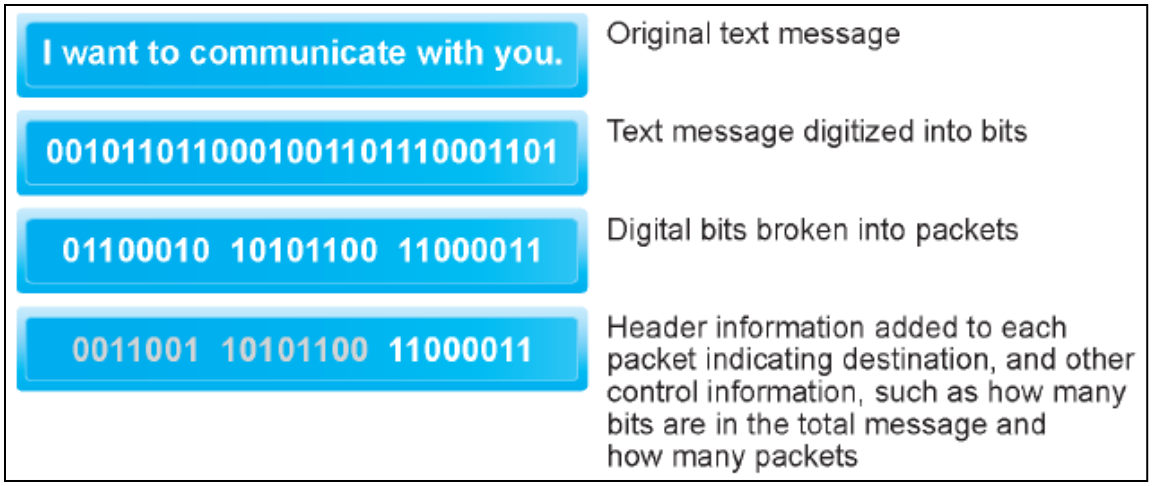

Fig.3.1: Segmented digital message

3.4 TCP/IP

The packet switching network had a great concept of using a spare capacity of the network, but there was no standard rule that agreed upon for the process of packet segmentation, routing the packets in a proper route and reassembling the packets received at the destination. Hence, a set of rules and standards were introduced termed as protocol to control ordering, compression, routing and reassembling of the packets.

One of the chief Protocols for Internet is Transmission Control Protocol/ Internet Protocol (TCP/ IP). TCP establishes connection between the computers and manages the packets to get received at the destination in a correct order without any packet loss. IP manages the addressing scheme for the packets to be routed over different paths to reach a destination.

TCP/IP architecture is composed of 4 different layers as shown below,

1. **Network Interface Layer:** This layer is responsible for sending and receiving the packets from the network medium.
2. **Internet Layer:** This layer is responsible for packaging, addressing and routing the packets in the Internet.
3. **Transport Layer:** This layer helps in creating a communication with other applications by sequencing and acknowledging the packets to and from the applications.
4. **Application Layer:** The set of protocols in this layer helps in providing services to the user and exchange of data. Some of those protocols are Border Gateway Protocol (BGP),

Hyper Text Transfer Protocol (HTTP), File Transfer Protocol (FTP) and Simple Mail Transfer Protocol (SMTP).

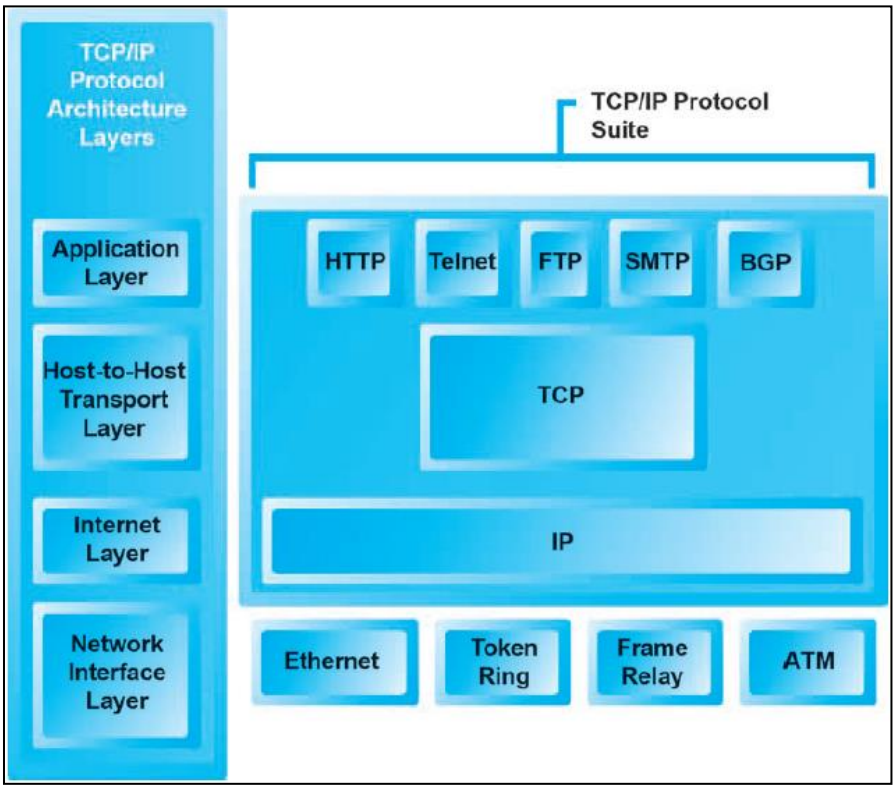

Fig. 3.2 TCP/IP Model

3.5 IP ADDRESSES

IP Address is used to communicate between the computers and helps in identification of individual computer over an Internet. When an user joins the internet using dail-up or cable modem, the computer is assigned with a temporary IP address by Internet Service Provider (ISP) whereas some of the universities are provided connected over Local Area Network (LAN) are assigned with a permanent IP address.

An Internet Protocol address (also known as an IP address) is a numerical label assigned to each device (e.g., computer, printer) participating in a computer network that uses the Internet Protocol for communication. An IP address serves two principal functions: host or network interface identification and location addressing. Its role has been characterized as follows: "A name indicates what we seek. An address indicates where it is. A route indicates how to get there."

The designers of the Internet Protocol defined an IP address as a 32-bit number consisting of 4 octets and this system, known as Internet Protocol Version 4 (IPv4), is still in use today. However, due to the enormous growth of the Internet and the predicted depletion of available addresses, a new version of IP (IPv6), using 128 bits for the address, was developed in 1995. IPv6 was standardized as RFC 2460 in 1998 and its deployment has been ongoing since the mid-2000s.

IP addresses are binary numbers, but they are usually stored in text files and displayed in human-readable notations, such as 172.16.254.1 (for IPv4), and 2001:db8:0:1234:0:567:8:1 (for IPv6).

Eg. 74.125.73.106 (IP address) will get you Google!

The Internet Assigned Numbers Authority (IANA) manages the IP address space allocations globally and delegates five regional Internet registries (RIRs) to allocate IP address blocks to local Internet registries (Internet service providers) and other entities. (http://en.wikipedia.org/wiki/IP_address)

The Internet Protocol (IP) is part of the TCP/IP suite and is the most widely used internetworking protocol. As with any protocol standard, IP is specified in two parts:

- The interface with a higher layer (e.g., TCP), specifying the services that IP provides
- The actual protocol format and mechanisms.

There are 2 types of IP Address- **IPv4** and **IPv6**

- **IPv4:** It is a 32 bit address that appears as a sequence of 4 numbers separated by periods such as **a.b.c.d**. Each number (**a/b/c/d**) ranges from 0-255. There can be 2^{32} addresses generated from IPv4. IP address is comprised of 2 components called *Host address* that identifies an individual host on specific network segment and *Network address* that identifies the TCP/IP network containing the host.
- **IPv6:** It is a 128 bit address that appears as a sequence of 4 numbers separated by periods such as **a.b.c.d**. Each number (**a/b/c/d**) ranges from 0-255. There can be 2^{128} addresses generated from IPv6.

3.6 DOMAIN NAMES

It is very difficult to remember 32 bit or 128 bit IP address for identification of a computer and to establish communication. Hence there was a need for easily remembered names for these addresses which led to the initiation of Domain names.

Domain name is an internet resource name globally made known to Web servers and online organizations providing all destination information. It is comprised of 2 components separated by a period such as *example.com.* It is used to identify single IP address or group of IP addresses.

Domain names are formed by the rules and procedures of the Domain Name System (DNS). Any name registered in the DNS is a domain name.

3.7 DNS and URLs

DNS: Domain Name System is termed as DNS. It is an internet system for mapping the numeric address with an alphanumeric name. When user needs to load a webpage, the alphanumeric name given over the browser need to be converted to corresponding IP address to locate the website.

Namespace can be of two types -

- **Flat namespace:** In a flat name space, a name is assigned to an address. A name in this space is a sequence of characters without structure.
- **Hierarchical namespace:** In a hierarchical name space, each name is made of several parts. The first part can define the nature of the organization, the second part can define the name of an organization, and the third part can define departments in the organization, and so on. In this case, the authority to assign and control the name spaces can be decentralized.

DNS is hierarchical in structure with root server at the top as shown in Figure 3.3. The next level contains top domain domains to identify organization type or geographical location such as *.com, .org, .gov, .uk, .ca*. For every top level domains can have second level domains and third level domains as well to identify the organization or an individual.

In the namespace design, the names are defined in an inverted-tree structure with the root at the top. The tree can have only 128 levels: level 0 (root) to level 127. For the Internet, the top of the

naming hierarchy is managed by an organization called ICANN (Internet Corporation for Assigned Names and Numbers).

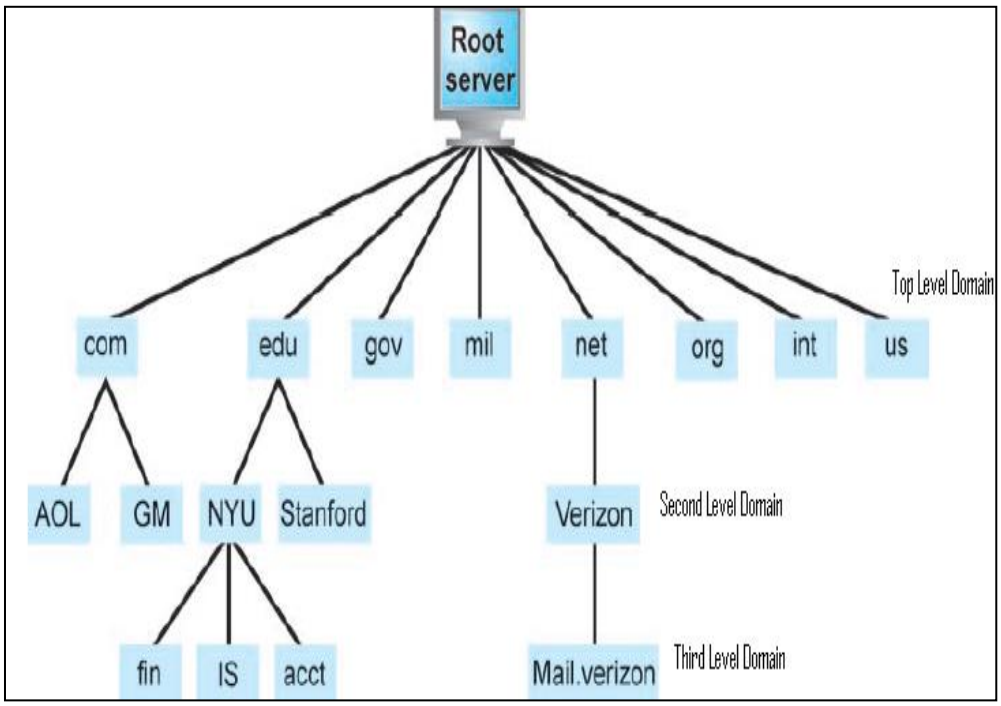

Fig. 3.3 Hierarchal structure of Domain Name System

Some simple terms used in DNS namespace-

- **Label:** Each node in the tree has a label, which is a string with a maximum of 63 characters. The root label is a null string (empty string).
- **Domain Name:** Each node in the tree has a domain name. A full domain name is a sequence of label separated by dots (.). The domain names are always read from the node up to the root. The last label is the label of the root (null).
- **Fully Qualified Domain Name:** If a label is terminated by a null string, it is called a fully qualified domain name (FQDN). An FQDN is a domain name that contains the full name of a host. It contains all labels, from the most specific to the most general, that uniquely define the name of the host. For example, the domain name ***challenger.ate.tbda.edu***.

- **Partially Qualified Domain Name:** If a label is not terminated by a null string, it is called a partially qualified domain name (PQDN). A PQDN starts from a node, but it does not reach the root. It is used when the name to be resolved belongs to the same site as the client. Here the resolver can supply the missing part, called the suffix, to create an FQDN. For example, if a user at the *jhda.edu.* site wants to get the IP address of the *challenger* computer; he or she can define the partial name ***challenger.***

URLs: Uniform Resource Locator is termed as URL. It is an address provided to the web browser to identify the location of the content in web. The domain name is also a part of the URL. Each page is assigned a **URL** (**Uniform Resource Locator**) that effectively serves as the page's worldwide name. URLs have three parts: the protocol (also known as the **scheme**), the DNS name of the machine on which the page is located, and the path uniquely indicating the specific page (a file to read or program to run on the machine). As an example, the URL of the page shown is http://www.abc.in/index.html.

For example, if the URL is given as www.example.com, www refers to hostname, example.com refers to domain name. Here DNS will map the www.example.com to an IP address 192.0.2.1. The process of mapping takes place as shown below,

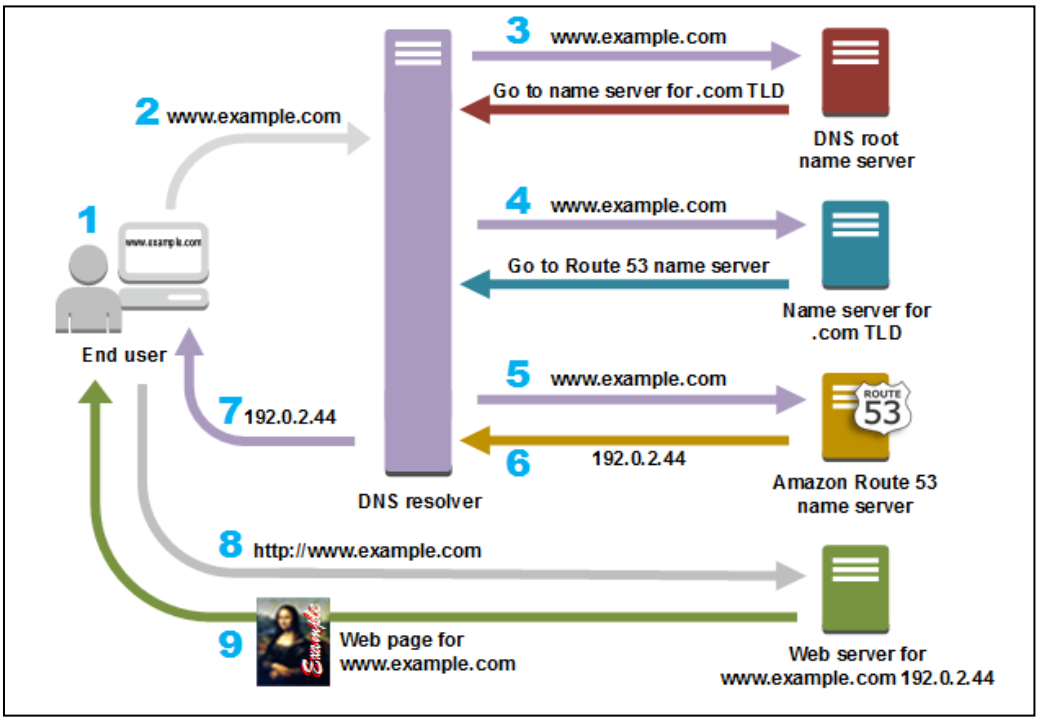

Fig. 3.4 Mapping of DNS to IP

When the user types www.example.com on the web browser and clicks on enter button, DNS resolver managed by Internet Service Provider (ISP) will take up the URL and pass it on to the root server. The request is again passed on to the Top Level Domain (TLD) server for .com domains. The name servers associated with the example.com is a response for this request. Now the request is passed on to the corresponding name server where the associated IP address for the URL is obtained and responded back to the DNS resolver which is taken up by the web browser and opens up the content of www.example.com.

3.8 CLIENT SERVER COMPUTING

During 1960's the computing was centralized and the task was entirely done at the single main frame computer connected to the users by terminals. Due to the insufficient computing power for graphics and other functionalities and development of personal computers and LAN around 1970 and 1980 client server model was initiated.

Client server computing is a model of computing where client computer is connected to the network of one or more computers called as servers dedicated to perform different functions.
Client computer is a powerful desktop computer which is a part of the network. Server computer is a networked computer dedicated to perform different functions that the client needs such as file storage, software application and printing.

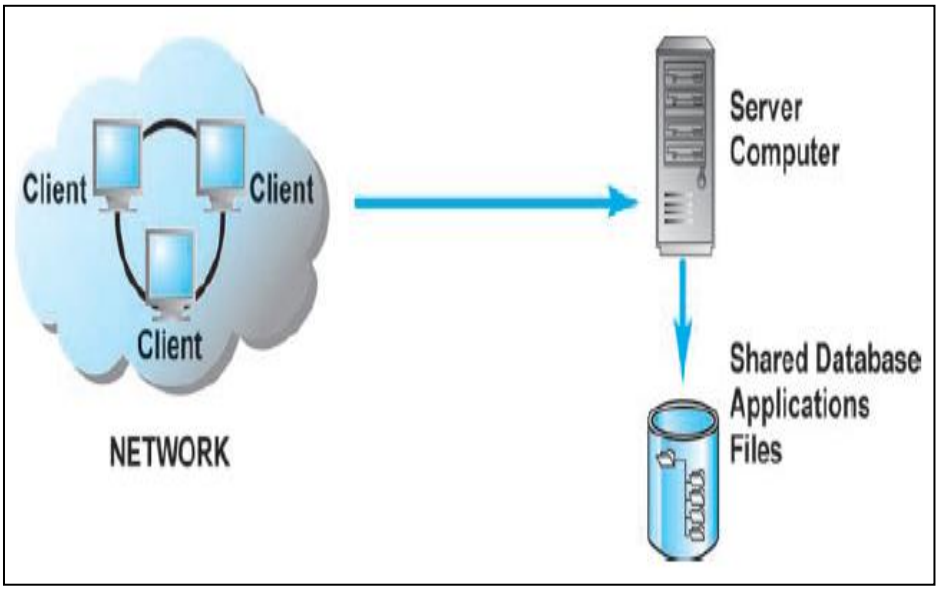

Fig. 3.5 Client Server model

Here the expansion is easy by adding any number of server and client computers. If the server goes down backup servers can take up the task and if client is inoperable then other part of the network keeps working unaffected. The load is balanced across the servers and hence the hardware and software at the client side can be kept simple.

Client-server architecture: architecture of a computer network in which many clients (remote processors) request and receive service from a centralized server (host computer). Client computers provide an interface to allow a computer user to request services of the server and to display the results the server returns. Servers wait for requests to arrive from clients and then respond to them. Ideally, a server provides a standardized transparent interface to clients so that clients need not be aware of the specifics of the system (i.e., the hardware and software) that is providing the service. Clients are often situated at workstations or on personal computers, while servers are located elsewhere on the network, usually on more powerful machines. This computing model is especially effective when clients and the server each have distinct tasks that they routinely perform. In hospital data processing, for example, a client computer can be running an application program for entering patient information while the server computer is running another program that manages the database in which the information is permanently stored. Many clients can access the server's information simultaneously, and, at the same time, a client computer can perform other tasks, such as sending e-mail. Because both client and server computers are considered independent devices, the client-server model is completely different from the old mainframe model, in which a centralized mainframe computer performed all the tasks for its associated "dumb" terminals, which merely communicated with the central mainframe.

3.9 CLOUD COMPUTING MODEL

Cloud computing is a process of providing computer processing, software, storage and other services as a shared pool of virtualized resources over an Internet. The resource and services can be accessed whenever needed from any connected device and location. The characteristics of cloud computing are,

- **On-demand self-service**: The server time and resource required by the consumer for computations can be accessed by their own whenever required.

- **Universal network access**: The cloud resource can be accessed by any standard network, internet devices or mobile network.
- **Location-independent resource pooling**: The resources required for the computation need to be served to multiple users. The virtual copy of the same resource is shared to the users based on their demand without disclosing the actual location of the resource.
- **Rapid Elasticity**: The resource required for computation can be increased, decreased or managed based on the demand created by the user.
- **Measured service**: The charges made for the service provided to the user is based on the amount of resources already been used.

Types of Cloud computing based on what service is provided to the customer:

1. **Infrastructure as a Service (IaaS)**: Here the customer uses network, storage and processing power to run their information systems from the third party service providers called as cloud service providers. The customers are charged for the storage and computation power used from the third party servers.

   For example, Amazon uses Amazon web Services (AWS) that offers Simple Storage Service (S3) for storing customer data and Elastic cloud computing (EC2) for computation.
2. **Software as a Service (SaaS)**: Here vendors host the software as a service over cloud infrastructure and make accessible to the customer through network. The customer is charged for the service as annual subscription.

   For example, Google apps provides a collection of business application and Salesforce.com maintains customer relationship management (CRM) along with related software services over the internet.
3. **Platform as a Service (PaaS)**: Here the customer uses infrastructure and programming platform provided over cloud as a service to run the applications.

   For example, IBM provides Bluemix for application development and testing over the cloud environment.

Types of Cloud computing based on who owns the service provided to the customer:

- **Public Cloud:** The third party service providers owns and manages the service such as storage, processing and network provided to the customer. The customer pays for the

amount of resources and computing power used. The enterprise that do not own their own software or hardware resources and requires less security over the computing data uses this type of cloud.

Example: Google Drive, Dropbox and Apple iCloud.

- **Private cloud:** The cloud infrastructure is maintained merely for single organization for providing services such as storage, network and processing. These services are hosted internally by in house IT or externally by private third party service providers. The enterprise here requires strict data security and control over the data used.

  Example: Financial and Healthcare companies.

- **Hybrid cloud:** The private cloud infrastructure is used only for the core business activities whereas the less critical computing or extra processing capacity requires the public infrastructure is called Hybrid cloud. These clouds are owned by in house IT, private host or third party service providers.

3.10 MOBILE PLATFORM

The mobile devices such as Smartphone, laptop, tablet and iPad have become the primary source for accessing the internet nowadays for shopping, bill payment and other services which shows that the mobile devices act as a basic platform for E-commerce. This is because the mobile devices are lighter, can be carried anywhere and accessible any time using applications that doesn't require complex operating system. Smartphone have found the drastic improvements in technology with varying operating systems such as Microsoft, Apple iPhone iOS and java/Linux. The high power consuming hardware in personal computers is replaced by less power draining flash memory chips with storage up to 128 GB in Smartphone.

3.11 CHECK YOUR PROGRESS

1. What does Arpanet stand for?
    a. Advanced Research Project Agency Network
    b. Advanced Research Programmed Auto Network
    c. Advanced Research Project Automatic Network
    d. Advanced Research Project Authorized Network

2. The special purpose computers through which the packets are dispersed along different path is called
    a. Switches
    b. Hub
    c. Routers
    d. Firewall

3. IPv6 is comprised of _____ bit address
    a. 256
    b. 32
    c. 64
    d. 128

4. Which of the following device converts hostname into IP address?
    a. DNS Server
    b. Hub
    c. DHCP Server
    d. Firewall
5. What is a DNS Client called as?
    a. DNS handler
    b. DNS resolver
    c. DNS updater
    d. None of the above
6. The entire hostname has a maximum of _____ characters
    a. 255
    b. 127
    c. 63
    d. 31
7. Which of the following is a type of cloud computing service?
    a. Service-as-a-Software (SaaS)
    b. Software-and-a-Server (SaaS)
    c. Software-as-a-Service (SaaS)
    d. Software-as-a-Server (SaaS)

8. Which of the following is an example of the cloud?
    a. Amazon Web Services (AWS)
    b. Dropbox
    c. Cisco WebEx
    d. All of the Above
9. The _____ allows systems and services to be accessible by a group of organizations.
    a. Public cloud
    b. Private cloud
    c. Community cloud
    d. Hybrid cloud
10. URL is _____
    a. Source address
    b. Users address
    c. Web Address
    d. An attribute

Answers to check your progress:

1. a) Advanced Research Project Agency Network
2. c) Routers
3. d) 128
4. a) DNS Server
5. b) DNS resolver
6. a) 255
7. c) Software-as-a-service
8. d) All of the above
9. a) Public cloud
10. c) Web Address

3.12 SUMMARY

In this unit we discussed the definition of Internet and technology background of the internet. We also discussed the definitions and functionalities of several key concepts of Internet such as Packet switching, TCP/IP, IP Address, Domain names, DNS and URL's. Later we described on the different computing models such as Client server model, Cloud computing model and its types. Finally, we described how E-commerce is impacted by the mobile platform.

3.13 KEYWORDS

1. **Internet:** It is an interconnected network of computers called as hosts providing services for individuals, linking business, educational institutions and government agencies.
2. **Packet switching:** It is a segmentation of digital message into several individual units called as packets.
3. **TCP/IP:** Transmission Control Protocol/ Internet Protocol (TCP/ IP) is an Internet Protocol that establishes connection between the computers and manages the packets to get received at the destination in a correct order without any packet loss.
4. **IP Address:** IP Address is used to communicate between the computers and helps in identification of individual computer over an Internet.
5. **Domain Names:** Domain name is an internet resource name globally made known to Web servers and online organizations providing all destination information.
6. **DNS:** Domain Name System is an internet system for mapping the numeric address with an alphanumeric name.
7. **URL:** Uniform Resource Locator is an address provided to the web browser to identify the location of the content in web.
8. **Client Server Computing:** Client server computing is a model of computing where client computer is connected to the network of one or more computers called as servers dedicated to perform different functions.
9. **Cloud Computing:** Cloud computing is a process of providing computer processing, software, storage and other services as a shared pool of virtualized resources over an Internet.

3.14 SELF ASSESSMENT QUESTIONS

1. Explain key technology concepts behind the Internet.
2. Explain 3 different types of cloud computing model.
3. Why is packet switching essential to the Internet?
4. Define TCP/IP, Domain name, DNS, URL and IP Address with example.
5. Explain the impact of mobile platform on E-commerce.
6. Explain client server computing model.

3.15 REFERENCES

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UNIT -4: INTERNET AND WEB

STRUCTURE

4.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Define the terms Hypertext, HTML and XML
- ✓ Explain Web servers and clients
- ✓ Describe the role of server
- ✓ Explain Web browsers.
- ✓ List and explain different communication tools.
- ✓ Discuss about different messaging apps available
- ✓ Define Internet Telephony

4.1 HYPERTEXT

The web address typed on the web browser software in Personal computer fetches the web pages required from the server where the resource is hosted through network using Hypertext Transfer Protocol (HTTP). Hypertext is way of formatting the pages associated with the links that connect one document to another and connecting the pages with other media like graphics, sound, video and animation files. When the hyperlink is clicked over the page, the graphics get opened or the video gets played.

The web address typed over the browser is composed of several parts such as HTTP, domain name, directory path and document name.

http://domainname/directorypath/filename

- **HTTP**: Hypertext transfer protocol is used to fetch and display the page requested by the user from the hosted server
- **Domain name**: It specifies the name of the organization server where the resource is hosted. Most of the times the domain name will very near to the name of the organization.
- **Directory path**: The actual path where the resource is resided over the hosted server.
- **Document name**: The name of the document requested.

Example: http://www.megacorp.com/content/features/23263.html

- www.megacorp.com - Domain
- content/features – Directory path
- 23263.html – Document name

4.2 HTML

The most widely used web page formatting language is HTML (Hypertext Markup Language). It was introduced based on Generalized Markup Language (GML) developed in 1960's. The set of markup tags are provided to format the web pages. The web browser will interpret these tags into a page display. The HTML defines the style and structure of the web page including heading, text formatting, positioning, tables and graphics. From the day HTML was launched, the browsers are adding the features continuously to refine the layout of the page displayed. Hence, when E-commerce website is designed it has to be taken care that it is supported by all the browsers even in the older versions. The recent version HTML5 introduces features such as drag and drop, video playback, mobile websites and responsive websites with adaptive web delivery. The HTML design can be done on the software tools such as notepad, dreamviewer.

The HTML originally invented by Tim Berners-Lee in 1989,was strongly based on Standard Generalized Mark-up Language (SGML),.It is an internationally agreed language used for describing how pages of text,graphics and other information are organized formatted and linked together.

HTML is the official language of the World Wide Web and was first developed in 1990. HTML is a product of SGML (Standard Generalized Markup Language). SGML is a complex, technical specification describing markup language. HTML was originally created to allow the users who were not specialized in SGML to publish and exchange scientific and other technical documents. HTML especially facilitated this exchange by incorporating the ability to link documents electronically using *hyper*links. Thus the name *Hyper*text Markup Language.

HTML is a language for describing web pages.

- HTML stands for **H**yper **T**ext **M**arkup **L**anguage
- HTML is a **markup** language
- A markup language is a set of markup **tags**
- The tags **describe** document content

- HTML documents contain HTML **tags** and plain **text**
- HTML documents are also called **web pages**

4.2.1 HTML Tags

HTML mark up tags are usually called HTML tags:

- HTML tags are keywords surrounded by **angle brackets** like <html>
- HTML tags normally **come in pairs** like and
- An HTML element starts with a **start tag / opening tag**
- An HTML element ends with an **end tag / closing tag**
- Start and end tags are also called **opening tags** and **closing tags**
- The **element content** is everything between the start and the end tag
- Some HTML elements have **empty content**
- Empty elements are **closed in the start tag**
- Most HTML elements can have **attributes**
- The HTML Tags are case in sensitive.

Tags are used to represent various elements of web page like Header, Footer, Title, Images etc. Tags are of two types: **Container Tags, Empty Tags.**

4.2.2 Writing HTML Using Notepad or TextEdit

HTML can be edited by using a professional HTML editor like:

- Adobe Dreamweaver
- Microsoft Expression Web
- CoffeeCup HTML Editor

However, for learning HTML we recommend a text editor like Notepad (PC) or TextEdit (Mac).

Follow the 4 steps below to create your first web page with Notepad.

Step 1: Start Notepad

Step 2: Edit HTML file with Notepad

Step 3: Save HTML like -> Select Save as. filename: filename.html. in Notepad's file menu.

Step 4: Run the HTML in any Browser.

4.2.3 HTML Page Structure

Basic HTML Document Code Structure

```
<!-- This is a comment -->
<!DOCTYPE html>
<html> <head><title>Title of the page</title></head>
    <body>
        <h1>This a heading</h1>
         <p>This is a paragraph.</p>
         <p>This is another paragraph.</p>
    </body>  </html>
```

4.3 XML

XML is eXtensible Markup language unlike HTML. HTML is used for the "look and feel" and display of data on the page whereas XML is used to describe data and information. XML is rich in syntax and extensible by allowing the user to create his own tags. It transforms the data into new formats such as importing the data from the database and displaying it as a table.

The enterprises can use XML to describe invoices, payroll and financial information and shared throughout the organization via intranet.

Example,

```
<? xml version="1.0"?>
<note>
    <from>Jack</from>
    <to>Mary</to>
     <subject>Ecommerce</subject>
     <body>Ecommerce is a trade and business over internet</body>
</note>
```

The first line in above example is XML declaration specifying the version of document. The next line '<note>' defines the root, next 4 lines defines the 4 child elements of the root element (<to>, <from>, <subject>, <body>) and last line defines end of the root element '<note>'.

The XML format called as Really Simple Syndication (RSS) helps user to include text, articles, blogs, audio files and digital content for data sharing over internet. When the RSS aggregator software is installed in the computer, it scans and gathers the information from articles, blogs and websites.

Example: Feedly, Reeder, and NewsBlur.

4.4 WEB SERVERS AND CLIENTS

Web server: It is a software that delivers the web page written in HTML to the client computers over a network when installed and request for the service is made using HTTP. Apache is the most widely used Web server software on Linus and Unix platform. Internet Information Service (IIS) plays a significant role on Microsoft platform. Every web server computer over an internet is provided with IP address.

The web server also provides other functionalities such as,

- Security service: This is to provide authentication and authorization of the person to access the particular website. The payment transactions are associated with SSL and TLS protocol for secure transmission of information over the network.
- File Transfer Protocol (FTP): This protocol is used to transfer the files to and from the server.
- Search Engine: This is used to search entire web for the particular document. The web server software associates the index with each web page to make easy keyword search over the content and delivering all likely matching web pages.
- Data capture: The log file maintained at the server will keep track of number of times a particular web site is accessed, the details of user who accessed the website, date and time of the access, length of the access and information on specific pages that were accessed. This information can be later used by the site manager to analyze and specify the most popular web site.

Apart from web servers, there are several other servers performing a particular task such as database servers, ad servers, mail servers and video servers.

Web server operations:

- All the communications between a web client and a web server use the HTTP

- When a web server begins execution, it informs the Operating System (OS) under which it is running & it runs as a background process
- A web client or browser, opens a network connection to a web server, sends information requests and possibly data to the server, receives information from the server and closes the connection.
- The primary task of web server is to monitor a communication port on host machine, accept HTTP commands through that port and perform the operations specified by the commands.
- When the URL is received, it is translated into either a filename or a program name.

General characteristics of web server:

- The file structure of a web server has two separate directories
- The root of one of these is called **document root** which stores web documents
- The root of the other directory is called the **server root** which stores server and its support software's
- The files stored directly in the document root are those available to clients through top level URLs
- The secondary areas from which documents can be served are called **virtual document trees.**
- Many servers can support more than one site on a computer, potentially reducing the cost of each site and making their maintenance more convenient. Such secondary hosts are called **virtual hosts.**
- Some servers can serve documents that are in the document root of other machines on the web; in this case they are called as **proxy servers**

Example:

Apache

- Apache is the most widely used Web server.
- The primary reasons are as follows: Apache is an excellent server because it is both fast and reliable.
- Furthermore, it is open-source software, which means that it is free and is managed by a large team of volunteers, a process that efficiently and effectively maintains the system.

- Finally, it is one of the best available servers for Unix-based systems, which are the most popular for Web servers.
- Apache is capable of providing a long list of services beyond the basic process of serving documents to clients.
- When Apache begins execution, it reads its configuration information from a file and sets its parameters to operate accordingly.

Internet Information Services (IIS)

- Microsoft IIS server is supplied as part of Windows—and because it is a reasonably good server—most Windows-based Web servers use IIS.
- With IIS, server behavior is modified by changes made through a window-based management program, named the IIS snap-in, which controls both IIS and File Transmission Protocol (ftp).
- This program allows the site manager to set parameters for the server.
- Under Windows XP and Vista, the IIS snap-in is accessed by going to *Control Panel, Administrative Tools, and IIS Admin.*

Web client: The web client is a computing device that is capable of requesting a document from the server using HTTP and displaying the HTML pages. Web client can be any mobile devices, printer, refrigerator and home lighting systems,

4.5 WEB BROWSERS

Browser is a software used to display web pages. When a user requests for the web page from particular website, the web browser will fetch the necessary content from web server and displays it on the user's device.

Example: Google chrome, Internet Explorer, Mozilla Firefox, Microsoft Edge and Safari.

A **web browser** is a software application for retrieving, presenting, and traversing information resources on the World Wide Web. An information resource is identified by a Uniform Resource Identifier (URI) and may be a web page, image, video, or other piece of content. Hyperlinks present in resources enable users to easily navigate their browsers to related resources.

Although browsers are primarily intended to access the World Wide Web, they can also be used to access information provided by Web servers in private networks or files in file systems. Some browsers can be also used to save information resources to file systems.

While developing a site, we should try to make it compatible to as many browsers as possible. Especially site should be compatible to major browsers like Explorer, FireFox, Netscape, Opera and Safari.

Internet Explorer

Internet Explorer (IE) is a product from software giant Microsoft. This is the most commonly used browser in the universe. This was introduced in 1995 along with Windows 95 launch and it has passed Netscape popularity in 1998.

Netscape

Netscape is one of the original Web browsers. This is what Microsoft designed Internet Explorer to compete against. Netscape and IE comprise the major portion of the browser market. Netscape was introduced in 1994.

Mozilla

Mozilla is an open-source Web browser, designed for standards compliance, performance and portability. The development and testing of the browser is coordinated by providing discussion forums, software engineering tools, releases and bug tracking. Browsers based on Mozilla code is the second largest browser family on the Internet today, representing about 30% of the Internet community.

Konqueror

Konqueror is an Open Source web browser with HTML 4.01 compliance, supporting Java applets, JavaScript, CSS 1, CSS 2.1, as well as Netscape plugins. This works as a file manager as well. It supports basic file management on local UNIX file systems, from simple cut/copy and paste operations to advanced remote and local network file browsing.

Firefox

Firefox is a new browser derived from Mozilla. It was released in 2004 and has grown to be the second most popular browser on the Internet.

Safari

Safari is a web browser developed by Apple Inc. and included in Mac OS X. It was first released as a public beta in January 2003. Safari has very good support for latest technologies like Extensible Hypertext Markup Language (XHTML), Cascading Style Sheets (CSS2) etc.

Opera

Opera is smaller and faster than most other browsers, yet it is full- featured. Fast, user-friendly, with keyboard interface, multiple windows, zoom functions, and more. Java and non Java-enabled versions available. Ideal for newcomers to the Internet, school children, handicap and as a front-end for CD-Rom and kiosks.

Lynx

Lynx is a fully-featured World Wide Web browser for users on Unix, Virtual Memory System (VMS), and other platforms running cursor-addressable, character-cell terminals or emulators.

4.6 COMMUNICATION TOOLS

It is a tool that allows people to connect globally either one to one or one to many basis. Some of them include E-mail, messaging apps, online message boards and internet telephony.

4.6.1 E-mail

Electronic mail is the most widely used communication tool since the earlier days. E-mail is associated with a set of protocols that supports text, image, audio and video to be sent from one person to another via internet. Along with the embedded text in a mail, the files such as documents, audio, video and image files are sent as an attachment inserted as a part of e-mail message.

4.6.2 Messaging apps

Instant messaging allows to share messages in real time. Unlike E-mail that takes several seconds to reach the recipients, the text appears more instantly on the receiver side using instant messaging. The sender will create a buddy list they want to communicate with and type a text message that is received by the buddies instantly and the buddies can respond to the sender the same way while both keeping online.

Although text is the primary mechanism, it also provides voice and video chat functionality. It is cheaper when compared to SMS and MMS texting.

Example: Skype, Yahoo Messenger, Google hangouts.

Other messaging apps such as Facebook messenger, WhatsApp, snapchat, Kik, Viber are more widely used providing competition to Instant Messaging.

4.6.3 Online message boards

Online message boards referred as forums, bulletin board or discussion group is a web application that enables users to communicate with each other. The messaging boards provides a separate thread for the members of the board. Firstly, the board administrator has to grant permission for the members of the boards to start their own thread and reply to the other people's thread. The board administrator has the authority to edit, delete, modify or move any thread on the message board. Here the members have to visit the board to get the updates on the new posts.

4.6.4 Internet Telephony

When the existing telephone system is built over from scratch using internet and packet switching technology over network with TCP/IP, it would make it less expensive and more efficient. And thus internet telephony was introduced and called as IP telephony in short. It is a technology that use Voice over Internet Protocol (VoIP) and packet switching network to transmit voice, fax and other audio over internet. VoIP can be used over basic handset and mobile devices. Currently it has become more popular since it is provided as a triple play (Voice, Internet and TV) in a single package.

Example: Skype

4.7 CHECK YOUR PROGRESS

1. Which is the correct syntax for web address
    a. http://directorypath/domainname/filename
    b. http://domainname/directorypath/filename
    c. http://domainname/filename/directorypath
    d. http://filename/directorypath/domainname

2. HTML stands for -
    a. HighText Machine Language
    b. HyperText and links Markup Language
    c. HyperText Markup Language
    d. None of these

3. Which internet language is used for including text, articles, blogs for data sharing over internet?
    a. RSS
    b. RDF
    c. WSDL
    d. OWL
4. Software that requests data from web server is called _____
    a. Users
    b. Hosts
    c. Clients
    d. Programs

5. Which of the following allow us to access E-mail from anywhere?
    a. Forum
    b. Web blog
    c. Message board
    d. Webmail interface

Answers to Check Your Progress

1. b) http://domainname/directorypath/filename
2. c) HyperText Markup Language
3. a) RSS
4. c) Clients
5. d) Webmail interface

4.8 SUMMARY

In this unit we started with the key terminologies such as Hypertext discussing the syntax of web address. Then we discussed different languages for the purpose of designing webpage, holding and transferring the data called HTML and XML. We also had a discussion on Web server, web clients and web browsers. Later we mentioned some of the communication tools with their functionality.

4.9 KEYWORDS

1. **Hypertext:** Hypertext is way of formatting the pages associated with the links that connect one document to another and connecting the pages with other media like graphics, sound, video and animation files.
2. **HTML:** It is a web formatting language used to define the style and structure of the web page.
3. **XML:** XML is used to describe data and information.
4. **Web server:** It is a software that delivers the web page written in HTML to the client computers over a network.
5. **Web client:** The web client is a computing device that is capable of requesting a document from the server using HTTP and displaying the HTML pages.
6. **Web Browser:** Web Browser is a software used to display web pages.

4.10 SELF ASSESSMENT QUESTIONS

1. List the differences between HTML and XML.
2. Explain Web servers, Web clients and Web browsers.
3. What is the significance of Hypertext? Explain the syntax of web address with example.
4. Describe different communication tools.
5. Define Browser and explain different types of Browsers.

4.11 REFERENCES

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BLOCK 2 INTRODUCTION

This block speaks of how an e-commerce idea (a website or an application) be put up across the marketplace. That is, how to convert an idea into a money-generating product. The block also conveys what are the different approaches towards the conversion, what is the software and hardware needed, site tools etc. It conveys the various security issues that the e-commerce product face and what is its viable solution for prevention. Also, once the product is ready to the market, what are the different ways of payments that could be presented to the customers for accessing the services. The last unit will convey the various business strategies and the various business to customer models.

This block consists of 4 units and is organized as follows:

Unit 5- E-commerce presence – Building an e-commerce idea, Systematic approach, Choosing software and hardware, E-commerce site tools

Unit 6- E-commerce security E-commerce System environment, Security threats, Technology solutions

Unit 7- E-commerce payment systems: Management policies, E-commerce payment systems, Electronic billing presentment and payment

Unit 8- E-commerce Business Strategies: E-commerce business models, Major B2C Business models, B2B Business models

UNIT 5: E-COMMERCE PRESENCE

STRUCTURE

5.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Convert an idea into an e-commerce presence
- ✓ Define and imagine an e-commerce presence in the market
- ✓ Explain the Systems Development Life Cycle
- ✓ Describe factors to consider in developing an e-commerce presence
- ✓ Choose and use the right kind of software and hardware for your product
- ✓ Discuss about other e-commerce site tools

5.1 INTRODUCTION

In the previous units, you learned about the technological foundation for e-commerce. We learnt and understood about the internet, the web and the mobile platform. In this chapter you will know and understand the important factors that a manager should consider while building an e-commerce presence. We learn how an idea can be converted to an e-commerce website or an application. We discuss the various software and hardware needed for the successful running of this e-commerce product. These days, software and hardware prices have gradually reduced but are more powerful than at the advent of the early e-commerce days. We also discuss the merging of mobile devices and the social network platforms like facebook.com (now called "meta") that adds to the complexity of having the e-commerce presence into three platforms: The web, the mobile and the social networks.

5.2 IMAGINE THE E-COMMERCE PRESENCE

Before we begin to build a website or an application of our own, we need to provide answers to a few questions. The questions list is as follows:

1. What is the idea?
2. Where is the money for running the site or app coming from?
3. Who is the target for whom we are creating the product?
4. Where is this target coming from?
5. Where is the content coming from and what type of content is it?

The answers to these questions are important.

1. The idea is the concept or ideology behind running the e-commerce website or app. We should know the pros and cons of converting the idea into to a product. It is the vision that runs in the background and with whose hope that we can accomplish and how to accomplish towards the conversion of an e-commerce presence.

The vision of the e-commerce presence plays an important role. If you open any website, through the home page we can make out what the vision of the company is. For example: Amazon wants to be the biggest marketplace in the world, Facebook wants the world to be more open and connected and for Google it's to organize the world's information and make the information available easily and accessible globally.

2. Once the mission and vision is defined, we need to start thinking about where the money will come for running our e-commerce presence. A preliminary idea of the business and revenue models should be created. We need to also think how the general idea will generate revenue.
The basic revenue model alternatives are advertising, subscriptions, transaction fees, sales, and affiliate revenue.

Many a time's one single business model will be a logical combination of one or more of the above alternate revenue models. As an example – facebook.com runs advertising in the right side of their website. Google search engine has an ads feature – which ranks at the top of their website.

3. We need to know for whom we are creating the product. The target audience is extremely important for the launch of any website or application. We should also know where best we can reach this target audience.

The target audience can be described in a number of ways: demographics, behavior patterns (lifestyle), current consumption patterns (online vs. offline purchasing), digital usage patterns, content creation preferences (blogs, social networks, sites like Pinterest), and buyer personas (profiles of your typical customer).

Understanding the demographics of your target audience is usually the first step. Demographic information includes age, income, gender, and location.
We take an example of Harley Davidson motorcycles to understand about the importance of demographics.

People from the age of 34 and all the way till 65 purchase motorcycles. These men travel with women during the rides. The Harley Davidson website has a collection of women's clothing and several web pages devoted to women riders. The love for motorcycles and the brand, and the lifestyle associated with touring highways of America on a powerful cycle is the one that drives Harley Davidson customers together.

4. The chances of the product's success will depend greatly on the characteristics of the market that you are about to enter. The marketplace for the target audience is a very important factor.
This does not just depend on your entrepreneurial brilliance and the brains behind it. Enter into a declining market filled with strong competitors, and you will multiply your chances of failure. Enter into a market that is emerging, growing, and has few competitors, and you stand a better chance. Enter a market where there are no players, and you will either be rewarded handsomely with a profitable monopoly on a successful product no one else thought of (Apple) or you will be quickly forgotten because there isn't a market for your product at this point in time

5. Websites are like books: they're composed of a lot of pages that have content ranging from text, to graphics, photos, and videos. People or customers visit our website only for the content that we showcase. This acts as a major force and foundation for the revenue generation and ultimate success of the e-commerce presence.

There are basically two types of content: static and dynamic content:

The static content is text and images that do not change frequently over a period of time. Dynamic content is content that changes regularly, say, daily or hourly. Dynamic content can be created by you, or increasingly, by bloggers and fans of your website and products. User generated content has a number of advantages: it's free, it engages your customer fan base, and search engines are more likely to catalog your site if the content is changing. Other sources of content, especially photos, are external websites that aggregate content such as Pinterest.

Know yourself: Conduct a SWOT analysis

Finally, before investing the time and effort along with the idea to join your website or application into the market, it's important first of all to know ourselves. A SWOT (Strength, Weakness, Opportunity, Threats) analysis helps us for that.

Fig.5.1: SWOT Analysis

5.3 BUILDING AN E-COMMERCE PRESENCE: A SYSTEMATIC APPROACH

E-commerce has moved from a PC-centric activity on the web to a mobile and tablet-based. Though 70% of e-commerce retail and travel revenues happen through the desktop computers, an increase in using smartphones and tablets for purchase is observed.

But still, we need to give significance to these "touch points" where a customer seeks for the product's service.

The e-commerce presence can be classified into four types. They are:

1. Website/App
2. Social Media
3. E-mail
4. Offline media.

There are different platforms for each of this presence. The figure 5.2 illustrates the various e-commerce presences with their platforms.

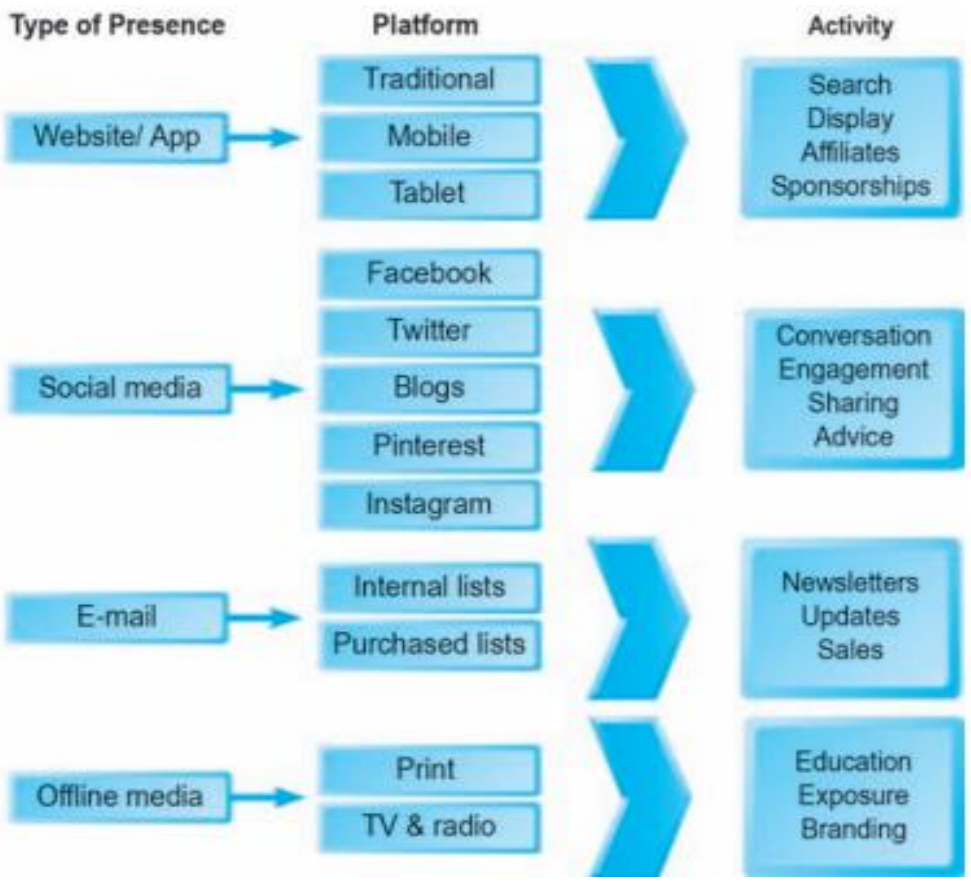

Fig.5.2: E-Commerce presence MAP

For instance, in the case of websites and/or apps, there are three different platforms: traditional desktop, tablets, and smartphones, each with different capabilities. And for each type of e-commerce presence there are related activities you will need to consider. For instance, in the case of websites and apps, you will want to engage in search engine marketing, display ads, affiliate programs, and sponsorships. Offline media, the fourth type of e-commerce presence, is included here because many firms use multiplatform or integrated marketing where print, television, or radio ads refer customers to websites and apps.

Also, it is advised to develop a timeline with milestones for the development of a startup.

There are five phases that summarizes the e-commerce presence. They are:

1. Planning
2. Website Development
3. Web implementation
4. Social media plan
5. Social media implementation

6. Mobile plan.

PHASE	ACTIVITY	MILESTONE
Phase 1: Planning	Envision e-commerce presence; determine personnel	Mission statement
Phase 2: Website development	Acquire content; develop a site design; arrange for hosting the site	Website plan
Phase 3: Web implementation	Develop keywords and metatags; focus on search engine optimization; identify potential sponsors	A functional website
Phase 4: Social media plan	Identify appropriate social platforms and content for your products and services	A social media plan
Phase 5: Social media implementation	Develop Facebook, Twitter, and Pinterest presence	Functioning social media presence
Phase 6: Mobile plan	Develop a mobile plan; consider options for porting your website to smartphones	A mobile media plan

Fig.5.3: E-Commerce presence Timeline

5.3.1 Factors to consider in developing an E-commerce Presence

Developing an e-commerce presence is not an easy task. Development can be done in two ways. In the first there is your team of people with various talents who develop it. Or in the second case, we outsource the development to a different team and set of people.

There are various factors to consider in developing an e-commerce presence. They are: Management, Software, Hardware architecture, Design, Telecommunications, Human Resources.

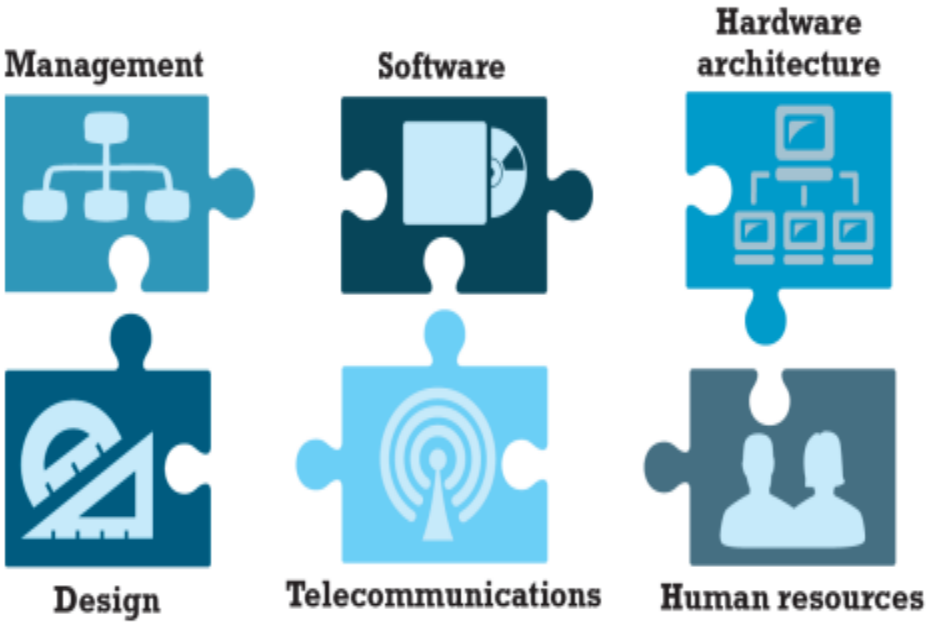

Fig.5.4: Factors to consider in developing an E-Commerce presence

Management is about the skills needed to manage every aspect for the development of the presence.

We discuss software and hardware in detail below:

Design conveys the various ways in which the factors have to interact for a successful running of the e-commerce presence.

- Telecommunications – are the different ways and methods in which the various components communicate with each other.
- Human resources – is about managing both resources (people v/s non-people entities)

5.3.2 The systems development life cycle

The Systems Development Life cycle (SDLC) is a methodology for understanding the business objectives of any system and designing an appropriate viable solution. The development of the cycle does not guarantee that success will be obtained, but still it is better than having no proper plan for development.

There are 5 major steps involved in the systems development life cycle. They are:

1. System Analysis / Planning – do the planning for the complete product.

2. Systems design – design individual components separately
3. Building the system - Combine and integrate the individual components to a single workable software product.
4. Testing – Perform various kinds of testing. The testing can be done to individual components and for the complete software.
5. Implementation – Run the components as a group so that the complete functionality of the software is achieved.

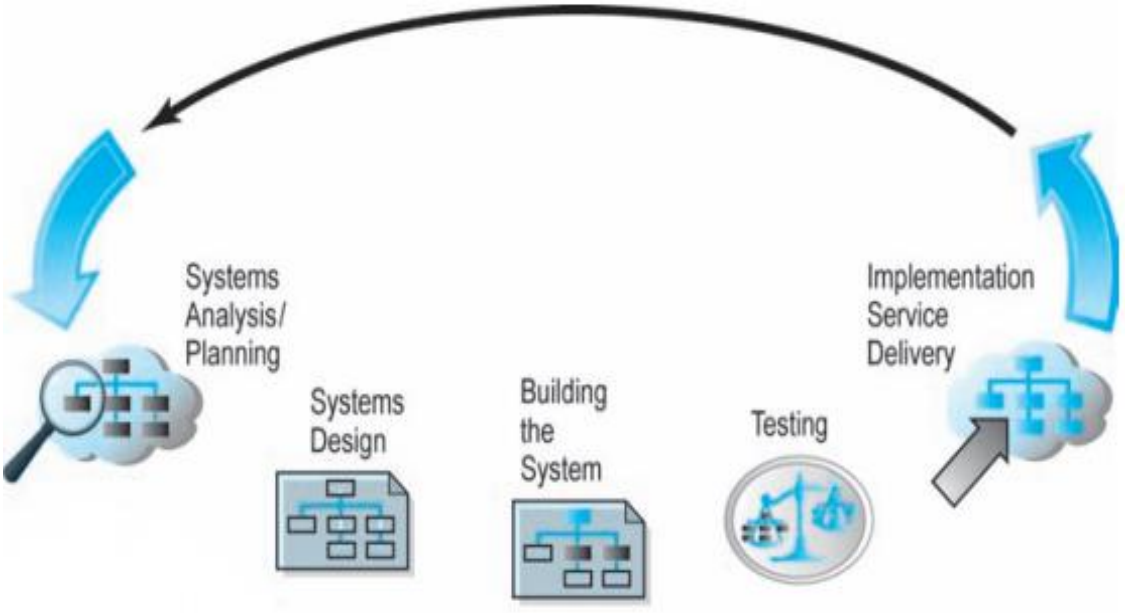

Fig.5.4: Websites System Development Life Cycle

5.4 CHOOSING THE SOFTWARE

We should be careful while selecting the software that we choose to start the startup or the e-commerce presence. Also, the software that we choose should be scalable both horizontally and vertically.

Most of the software used in startups is based on the following architectures:

1. Two-tier architecture
2. Multi-tier architecture.

The type of the tier that we need to choose is based on our consumer demands and needs. The following other kinds of software are also needed for the startup:

1. Web server software – Examples: Apache HTTP Server, Apache Tomcat server
2. Application servers – Software that runs the applications.

APPLICATION SERVERS

Web application servers are software programs that provide the specific business functionality required of a website. The basic idea of application servers is to isolate the business applications from the details of displaying web pages to users on the front end and the details of connecting to databases on the back end. Application servers are a kind of middleware software that provides the glue connecting traditional corporate systems to the customer as well as all the functionality needed to conduct e-commerce. In the early years, a number of software firms developed specific separate programs for each function, but increasingly, these specific programs are being replaced by integrated software tools that combine all the needed functionality for an e-commerce site into a single development environment, a packaged software approach. In most cases choosing open source software is considered viable than proprietary software. The various open source software options are detailed in the figure 5.4

Open source software is software developed by a community of programmers and designers, and is free to use and modify. The advantage of using open source web building tools is that you get exactly what you want, a truly customized unique website. The disadvantage is that it will take several months for a single programmer to develop the site and get all the tools to work together seamlessly.

FUNCTIONALITY	OPEN SOURCE SOFTWARE
Web server	Apache (the leading web server for small and medium businesses)
Shopping cart, online catalog	Many providers: osCommerce, Zen Cart, AgoraCart, X-cart, AspDotNetStorefront
Credit card processing	Credit card acceptance is typically provided in shopping cart software but you may need a merchant account from a bank as well.
Database	MySQL (the leading open source SQL database for businesses)
Programming/scripting language	PHP is a scripting language embedded in HTML documents but executed by the server, providing server-side execution with the simplicity of HTML editing. Perl is an alternative language. JavaScript programs are client-side programs that provide user interface components. Ruby on Rails (RoR, Rails) and Django are other popular open source web application frameworks.
Analytics	Analytics keep track of your site's customer activities and the success of your web advertising campaign. You can also use Google Analytics if you advertise on Google, which provides good tracking tools; most hosting services will provide these services as well. Other open source analytic tools include Piwik, CrawlTrack, and Open Web Analytics.

Fig.5.4: Open source software options

5.5 CHOOSING THE HARDWARE

Whether you host your own site or outsource the hosting and operation of your site, you will need to understand certain aspects of the computing hardware platform. The hardware platform refers to all the underlying computing equipment that the system uses to achieve its e-commerce functionality. Your objective is to have enough platform capacity to meet peak demand (avoiding an overload condition), but not so much platform that you are wasting money.

The scalability of the hardware that we need to procure again is based on two needs:

1. The Demand side
2. The supply side

There are various ways of vertical and horizontal scaling techniques. They are:

1. Use a faster computer
2. Create a cluster of computers to run in parallel.
3. Usage of appliance servers.
4. Segment workload
5. Batch requests – single batch, multiple batch
6. Manage connections – single or multiple connections.
7. Aggregate user data – into data pools, so that relevant and related can be pooled in.
8. Cache – store frequently used data in cache than in any other memory.

5.6 OTHER E-COMMERCE

TOOLS FOR SEARCH ENGINE OPTIMIZATION

A website is only as valuable from a business perspective as the number of people who visit. The first stop for most customers looking for a product or service is to start with a search engine, and follow the listings on the page, usually starting with the top three to five listings, then glancing to the sponsored ads to the right. The higher you are on the search engine pages, the more traffic you will receive. Page 1 is much better than Page 2. So how do you get to Page 1 in the natural (unpaid) search listings? While every search engine is different, and none of them publish their algorithms for ranking pages.

TOOLS FOR INTERACTIVITY AND ACTIVE CONTENT

The more interactive a website is, the more effective it will be in generating sales and encouraging return visitors. Although functionality and ease of use are the supreme objectives in site design, you will also want to interact with users and present them with a lively, "active" experience. You will want to personalize the experience for customers by addressing their individual needs, and customize the content of your offerings based on their behavior or expressed desires. In order to achieve these business objectives, you will need to consider

carefully the tools necessary to build these capabilities. Simple interactions such as a customer submitting a name, along with more complex interactions involving credit cards, user preferences, and user responses to prompts, all require special programs.

Brief description of some commonly used software tools for achieving high levels of site interactivity are as given below:

- **Common Gateway Interface (CGI)**: a set of standards for communication between a browser and a program running on a server that allows for interaction between the user and the server
- **Active Server Pages (ASP)** a proprietary software development tool that enables programmers using Microsoft's IIS package to build dynamic pages.
- **ASP.NET:** successor to ASP Java a programming language that allows programmers to create interactivity and active content on the client computer, thereby saving considerable load on the server.
- **Java**: a programming language that allows programmers to create interactivity and active content on the client computer, thereby saving considerable load on the server
- **Java Server Pages (JSP)**: like CGI and ASP, a web page coding standard that allows developers to dynamically generate web pages in response to user requests.
- **JavaScript:** a programming language invented by Netscape that is used to control the objects on an HTML page and handle interactions with the browser.
- **ActiveX:** a programming language created by Microsoft to compete with Java
- **VBScrip**t: a programming language invented by Microsoft to compete with JavaScript
- **ColdFusion:** an integrated server-side environment for developing interactive web applications **PHP:** open source, general purpose scripting language
- **Ruby on Rails (RoR/ Rails):** open source web application framework based on Ruby programming language

5.7 CHECK YOUR PROGRESS

1. The idea plays an important role towards starting the company / product. State True or False.
2. We have to scale the software and hardware as per the demand and needs of the customers. State True or False.
3. Its important many a times to have an idea that can be converted to a product across a _____ marketplace.
4. Customers play an important role in running any business model. State True or False.
5. The _____ audience is important to run any business model.
6. The _____ analysis helps us to know our strengths and weakness before entering the market with our idea as a product.
7. Expand the acronym SDLC.

Answers to Check Your Progress:

1. True
2. True
3. sparse
4. True
5. target
6. SWOT
7. Systems Development Life Cycle

5.8 SUMMARY

In this unit, we discussed how to convert an idea to a e-commerce product. We also learnt about the stakeholders who run the product. It was made aware about the Systems Development life cycle. We discussed what is the software and hardware needs for running the product. We also observe and learn about other e-commerce site tools.

5.9 KEYWORDS

- **Vision** – The idea and ideology behind which a product can be created.
- **Business model** – The model that converts an idea to a business viable product. The product generates revenue.
- **Target audience** – It is our customers or consumers who seek-peek and consume our services.
- **Software** – The software tools needs to run a successful product. These tools are installed into the hardware.
- **Hardware** – The source of tools needed to run the software and in turn manage the product's scalability
- **SDLC** – The different phases of systems development life cycle.

5.10 SELF ASSESSMENT QUESTIONS

1. What are the main factors to consider when developing an e-commerce presence?
2. Name the four main kinds of e-commerce presence and the different platforms for each type.
3. Define the systems development life cycle and discuss the various steps involved in creating an e-commerce site.
4. Explain the need of picking the right hardware and software for running the e-commerce presence.
5. How is scalability of software and hardware managed in any e-commerce presence?

5.11 REFERENCES

1. Laudon, Kenneth C., and Carol Guercio Traver. *E-Commerce 2017 Business*. Pearson, 2020.

UNIT 6- E-COMMERCE SECURITY

STRUCTURE

6.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Explain security with respect to e-commerce.
- ✓ Identify role of security in running a successful e-commerce product.
- ✓ Discuss different kinds of security threats.
- ✓ Define hacking
- ✓ Explain about Cyber vandalism
- ✓ Describe about hactivism
- ✓ Provide technology solutions for overcoming these security threats.

6.1 INTRODUCTION

The Internet and Web are increasingly vulnerable to large-scale attacks and potentially large-scale failure. Increasingly, these attacks are led by organized gangs of criminals operating globally—an unintended consequence of globalization.

Even more worrisome is the growing number of large-scale attacks that are funded, organized, and led by various nations against the Internet resources of other nations. Anticipating and countering these attacks has proved a difficult task for both business and government organizations. However, there are several steps you can take to protect your websites, your mobile devices, and your personal information from routine security attacks.

6.2 E-COMMERCE SYSTEM ENVIRONMENT

For most law-abiding citizens, the Internet holds the promise of a huge and convenient global marketplace, providing access to people, goods, services, and businesses worldwide, all at a bargain price. For criminals, the Internet has created entirely new—and lucrative—ways to steal from the more than 1.6 billion Internet consumers worldwide in 2016. From products and services, to cash, to information, it's all there for the taking on the Internet.

It's also less risky to steal online. Rather than rob a bank in person, the Internet makes it possible to rob people remotely and almost anonymously. Rather than steal a CD at a local record store,

you can download the same music for free and almost without risk from the Internet.

Cybercrime is becoming a more significant problem for both organizations and consumers. Bot networks, DDoS attacks, Trojans, phishing, ransomware, data theft, identity fraud, credit card fraud, and spyware are just some of the threats that are making daily headlines.

Criminals who steal information on the Internet do not always use this information themselves, but instead derive value by selling the information to others on the so-called underground or shadow economy market. Data is currency to cybercriminals and has a "street value" that can be monetized. For example, in 2013, Vladislav Horohorin (alias "BadB") was sentenced to over 7 years in federal prison for using online criminal forums to sell stolen credit and debit card information (referred to as "dumps"). At the time of his arrest, Horohorin possessed over 2.5 million stolen credit and debit card numbers.

6.2.1 What is good e-commerce security?

To understand this question, we need to find the answer for what is a secure commercial transaction?

Anytime you go into a marketplace you take risks, including the loss of privacy (information about what you purchased). Your prime risk as a consumer is that you do not get what you paid for. As a merchant in the market, your risk is that you don't get paid for what you sell. Thieves take merchandise and then either walk off without paying anything, or pay you with a fraudulent instrument, stolen credit card, or forged currency.

E-commerce merchants and consumers face many of the same risks as participants in traditional commerce, albeit in a new digital environment. Theft is theft, regardless of whether it is digital theft or traditional theft. Burglary, breaking and entering, embezzlement, trespass, malicious destruction, vandalism—all crimes in a traditional commercial environment—are also present in e-commerce. However, reducing risks in e-commerce is a complex process that involves new technologies, organizational policies and procedures, and new laws and industry standards that empower law enforcement officials to investigate and prosecute offenders. The figure 6.1 illustrates the multi-layered nature of e-commerce security.

Fig.6.1: Multi-Layered Nature of E-Commerce Security

6.2.1 Dimensions of e-commerce security

The below are the dimensions of e-commerce security with their meanings:

1. **Integrity** - the ability to ensure that information being displayed on a website or transmitted or received over the Internet has not been altered in any way by an unauthorized party.
2. **Nonrepudiation** - the ability to ensure that e-commerce participants do not deny (i.e., repudiate) their online actions.
3. **Authenticity** - the ability to identify the identity of a person or entity with whom you are dealing on the Internet.
4. **Confidentiality -** the ability to ensure that messages and data are available only to those who are authorized to view them
5. **Privacy** - the ability to control the use of information about oneself

Table 6.1: Dimensions of e-commerce security

DIMENSION	CUSTOMER'S PERSPECTIVE	MERCHANT'S PERSPECTIVE
Integrity	Has information I transmitted or received been altered?	Has data on the site been altered without authorization? Is data being received from customers valid?
Nonrepudiation	Can a party to an action with me later deny taking the action?	Can a customer deny ordering products?
Authenticity	Who am I dealing with? How can I be assured that the person or entity is who they claim to be?	What is the real identity of the customer?
Confidentiality	Can someone other than the intended recipient read my messages?	Are messages or confidential data accessible to anyone other than those authorized to view them?
Privacy	Can I control the use of information about myself transmitted to an e-commerce merchant?	What use, if any, can be made of personal data collected as part of an e-commerce transaction? Is the personal information of customers being used in an unauthorized manner?
Availability	Can I get access to the site?	Is the site operational?

6.3 SECURITY THREATS

To understand the various security threats that can happen, we should understand the structure of a typical e-commerce transaction. The Figure 6.2 provides the structure and illustrates a typical e-commerce transaction with a consumer using a credit card to purchase a product.

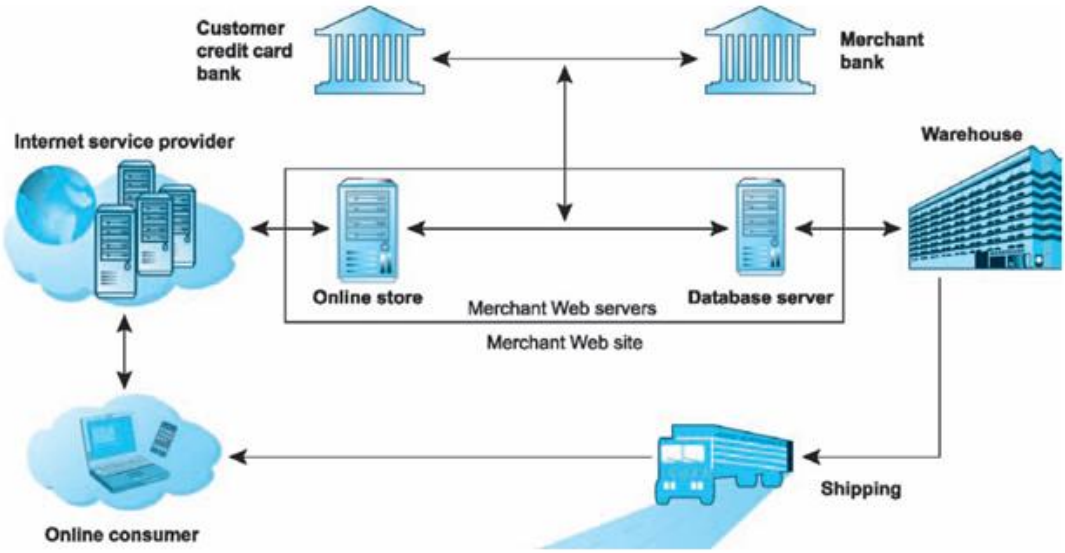

Fig. 6.2: The structure of an e-commerce transaction.

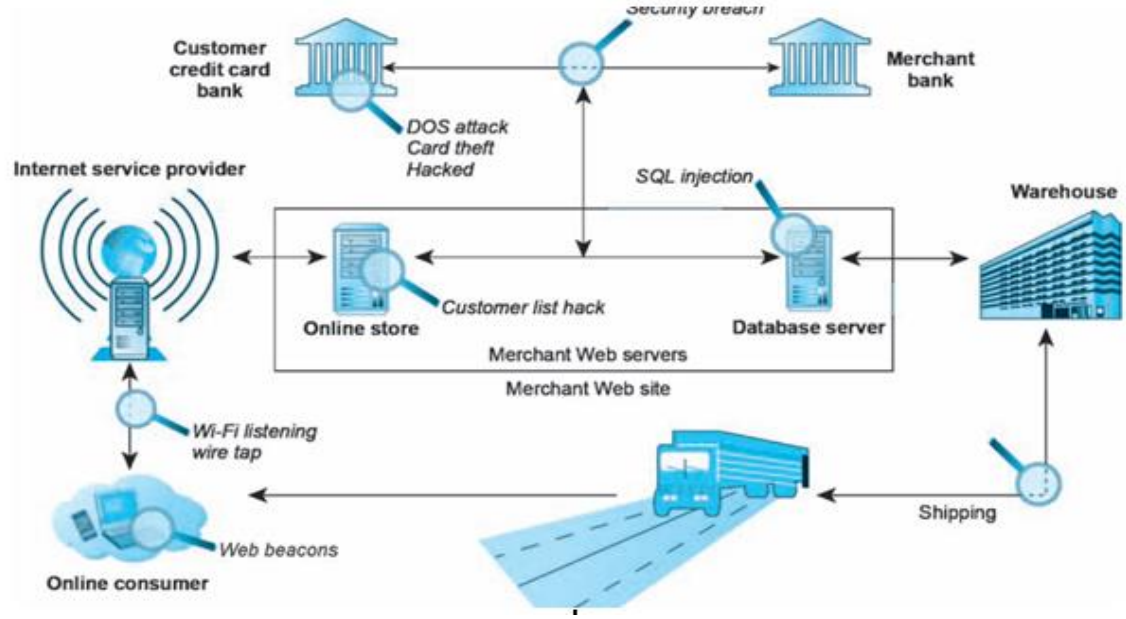

Fig. 6.3: The vulnerable points of an e-commerce transaction.

Also Figure 6.3 discusses the various ways in which this e-commerce transaction be hampered with security threats and breaches.

The various security threats with their meanings is given below:

1. **Malicious code (also called malware)** - includes a variety of threats such as viruses, worms, Trojan horses, and bots

2. **Exploit kit** - collection of exploits bundled together and rented or sold as a commercial product
3. **Maladvertising** - online advertising that contains malicious code
4. **drive-by download** - malware that comes with a downloaded file that a user requests
5. **Virus** - a computer program that has the ability to replicate or make copies of itself, and spread to other files
6. **Worm** - malware that is designed to spread from computer to computer
7. **Ransomware (also called scareware)** - malware that prevents you from accessing your computer or files and demands that you pay a fine or a ransom
8. **Trojan horse** - appears to be gentle and kind, but then does something other than expected. Often a way for viruses or other malicious code to be introduced into a computer system
9. **backdoor** - feature of viruses, worms, and Trojans that allows an attacker to remotely access a compromised computer
10. **bot** - type of malicious code that can be covertly installed on a computer when connected to the Internet. Once installed, the bot responds to external commands sent by the attacker
11. **botnet** - collection of captured bot computers
12. potentially unwanted program (PUP) - program that installs itself on a computer, typically without the user's informed consent

6.3.1 Hacking, Cyber vandalism, and hacktivism

A hacker is an individual who intends to gain unauthorized access to a computer system. Within the hacking community, the term cracker is typically used to denote a hacker with criminal intent. These hackers are people who gain unauthorized access by finding weakness or vulnerable points present in websites and Operating systems.

Today, hackers have malicious intentions to disrupt, deface, or destroy sites or to steal personal or corporate information they can use for financial gain (data breach). This is also called as cyberwar or cyber vandalism.

Hacktivism adds a political plot to the story. Hacktivists typically attack governments, organizations, and even individuals for political purposes, employing the tactics of cyber vandalism, distributed denial of service attacks, data thefts, and doxing (gathering and exposing personal information of public figures, typically from emails, social network posts, and other documents).

6.4 TECHNOLOGY SOLUTIONS

At first glance, it might seem like there is not much that can be done about the onslaught of security breaches on the Internet. Reviewing the security threats in the previous section, it is clear that the threats to e-commerce are very real, widespread, global, potentially devastating for individuals, businesses, and entire nations, and likely to be increasing in intensity along with the growth in e-commerce and the continued expansion of the Internet. But in fact a great deal of progress has been made by private security firms, corporate and home users, network administrators, technology firms, and government agencies. There are two lines of defense: technology solutions and policy solutions.

In this section, we consider some technology solutions: The first line of defense against the wide variety of security threats to an e-commerce site is a set of tools as shown in figure 6.4 that can make it difficult for outsiders to invade or destroy a site.

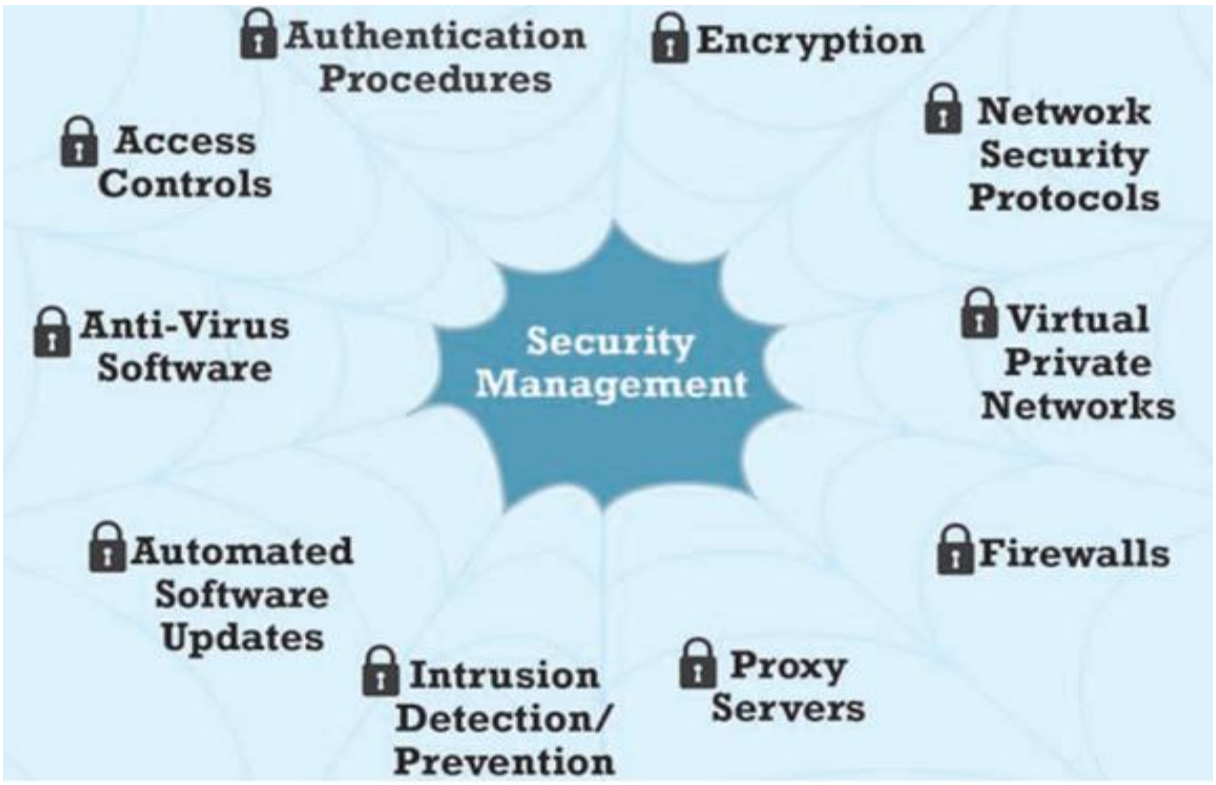

Fig. 6.4: Tools available to achieve site security

To know how to secure the e-commerce site, we need to understand a few terminologies. They are:

1. Encryption – A process of transforming plain text or data to cipher texts that cannot be read by anyone other than the sender and the receiver.

The purpose of encryption is 2-folds:

- To secure stored information.
- To secure information transmission.

Encryption enables 4 of the 6 dimensions mentioned in table 6.1.

- Message integrity—provides assurance that the message has not been altered.
- Nonrepudiation—prevents the user from denying he or she sent the message.
- Authentication—provides verification of the identity of the person (or computer) sending the message.
- Confidentiality—gives assurance that the message was not read by others.

There are different ways of encryption schemes. They are:

1. Symmetric key cryptography

2. Public key cryptography

3. Digital envelopes

4. Digital certificates and Public key infrastructure

Also, there are different algorithms that help the encryption process. To brief a few algorithms:

1. Data Encryption Standard (DES) - developed by the National Security Agency (NSA) and IBM. Uses a 56-bit encryption key

2. Advanced Encryption standard – AES - the most widely used symmetric key algorithm, offering 128-, 192-, and 256-bit keys

6.5 CHECK YOUR PROGRESS

1. Define the term: Integrity.
2. List any 2 encryption algorithms.
3. There are _____ number of dimensions to e-commerce security.
4. Define the term: Virus.
5. Viruses spreads itself by creating copies of the bad program to multiple instances. State True or False?

Answers to Check Your Progress:

1. Integrity - the ability to ensure that information being displayed on a website or transmitted or received over the Internet has not been altered in any way by an unauthorized party.
2. AES and DES algorithms.
3. 06 dimensions
4. A computer program that has the ability to replicate or make copies of itself, and spread to other files
5. True.

6.6 SUMMARY

Through this Unit we were able to learn the e-commerce system environment, the multiple dimensions to e-commerce security, the different kinds of security threats, learn about cyber vandalism and hacktivism.

Also, we learnt about the different encryption schemes with their algorithms.

6.7 KEYWORDS

- **White hats** - "good" hackers who help organizations locate and fix security flaws
- **Black hats** - hackers who act with the intention of causing harm
- **Grey hats** - hackers who believe they are pursuing some greater good by breaking in and revealing system flaws
- **Privacy** - the ability to control the use of information about oneself
- **Hacker** – A person who breaks into a system or an organizational site.
- **Worm** - malware that is designed to spread from computer to computer

6.8 SELF ASSESSMENT QUESTIONS

1. Explain the multiple dimensions to e-commerce security.
2. Illustrate with a diagram the e-commerce system environment.
3. List and explain any 4 security threats with their meanings.
4. Explain hacker, cyber vandalism and hacktivism.
5. Explain any 2 encryption based security dimensions in detail.
6. List any antivirus software that you know and explain its need and usage.

6.9 REFERENCES

1. Laudon, Kenneth C., and Carol Guercio Traver. *E-Commerce 2017 Business*. Pearson, 2020.
2. http://williamstallings.com/Cryptography/

UNIT 7- E-COMMERCE PAYMENT SYSTEMS

STRUCTURE

7.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Explain E-commerce management policies
- ✓ Identify the major e-commerce payment systems in use today.
- ✓ Explain about patent law
- ✓ Discuss about encryption
- ✓ Describe the features and functionality of electronic billing presentment and payment systems.

7.1 MANAGEMENT POLICIES

Worldwide, in 2016, companies are expected to spend over €76 billion on security hardware, software, and services, up 8% from the previous year (Gartner, 2016). However, most CEOs and CIOs believe that technology is not the sole answer to managing the risk of e-commerce. The technology provides a foundation, but in the absence of intelligent management policies, even the best technology can be easily defeated. Public laws and active enforcement of cybercrime statutes also are required to both raise the costs of illegal behaviour on the Internet and guard against corporate abuse of information.

Let's consider briefly the development of management policy.

A SECURITY PLAN: MANAGEMENT POLICIES

In order to minimize security threats, e-commerce firms must develop a coherent corporate policy that takes into account the nature of the risks, the information assets that need protecting, and the procedures and technologies required to address the risk, as well as implementation and auditing mechanisms. **Figure 7.1** illustrates the key steps in developing a solid security plan.

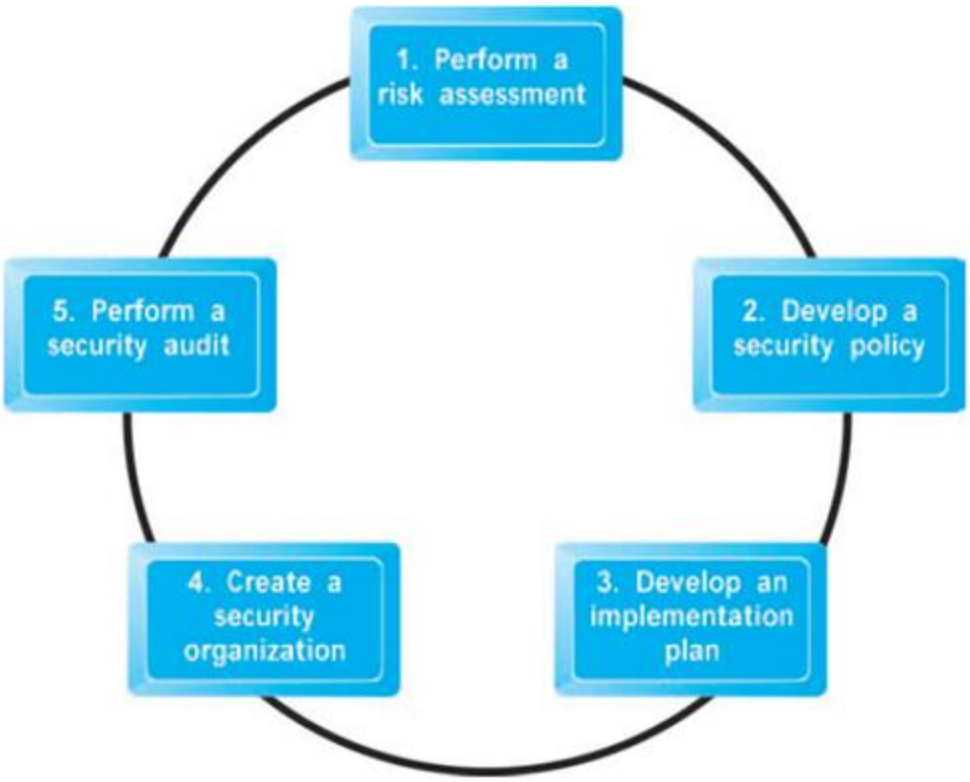

Fig.7.1: E-Commerce Security Plan

A security plan begins with **risk assessment**—an assessment of the risks and points of vulnerability. The first step is to inventory the information and knowledge assets of the e-commerce site and company. What information is at risk? Is it customer information, proprietary designs, business activities, secret processes, or other internal information, such as price schedules, executive compensation, or payroll? For each type of information asset, try to estimate the dollar value to the firm if this information were compromised, and then multiply that amount by the probability of the loss occurring. Once you have done so, rank order the results. You now have a list of information assets prioritized by their value to the firm.

Based on your quantified list of risks, you can start to develop a **security policy**— a set of statements prioritizing the information risks, identifying acceptable risk targets, and identifying the mechanisms for achieving these targets. You will obviously want to start with the information assets that you determined to be the highest priority in your risk assessment. Who generates and controls this information in the firm? What existing security policies are in place to protect the information? What enhancements can you recommend to improve security of these most valuable assets? What level of risk are you willing to accept for each of these assets? Are

you willing, for instance, to lose customer credit card data once every 10 years? Or will you pursue a 100-year hurricane strategy by building a security edifice for credit card data that can withstand the once-in-100-year disaster? You will need to estimate how much it will cost to achieve this level of acceptable risk. Remember, total and complete security may require extraordinary financial resources. By answering these questions, you will have the beginnings of a security policy.

Next, consider an **implementation plan**—the steps you will take to achieve the security plan goals. Specifically, you must determine how you will translate the levels of acceptable risk into a set of tools, technologies, policies, and procedures. What new technologies will you deploy to achieve the goals, and what new employee procedures will be needed?

To implement your plan, you will need an organizational unit in charge of security, and a security officer—someone who is in charge of security on a daily basis. For a small e-commerce site, the security officer will likely be the person in charge of Internet services or the site manager, whereas for larger firms, there typically is a dedicated team with a supporting budget. The **security organization** educates and trains users, keeps management aware of security threats and breakdowns, and maintains the tools chosen to implement security.

The security organization typically administers access controls, authentication procedures, and authorization policies. **Access controls** determine which outsiders and insiders can gain legitimate access to your networks. Outsider access controls include firewalls and proxy servers, while insider access controls typically consist of login procedures (usernames, passwords, and access codes).

Authentication procedures include the use of digital signatures, certificates of authority, and PKI. Now that e-signatures have been given the same legal weight as an original pen-and-ink version, companies are in the process of devising ways to test and confirm a signer's identity. Companies frequently have signers type their full name and click on a button indicating their understanding that they have just signed a contract or document.

Biometric devices can also be used to verify physical attributes associated with an individual, such as a fingerprint or retina (eye) scan or speech recognition system. (**Biometrics** is the study of measurable biological, or physical, characteristics.) A company could require, for example, that an individual undergo a fingerprint scan before being allowed access to a website, or before being allowed to pay for merchandise with a credit card. Biometric devices make it even more

difficult for hackers to break into sites or facilities, significantly reducing the opportunity for spoofing. Newer Apple iPhones (5S and later) feature a fingerprint sensor called Touch ID built into the iPhone's home button that can unlock the phone and authorize purchases from the iTunes, iBooks, and App Stores without requiring users to enter a PIN or other security code. According to Apple, the system does not store an actual fingerprint, but rather biometric data, which will be encrypted and stored only on a chip within the iPhone, and will not be made available to third parties.

Security tokens are physical devices or software that generate an identifier that can be used in addition to or in place of a password. Security tokens are used by millions of corporation and government workers to log on to corporate clients and servers.

One example is RSA's SecurID token, which continuously generates six-digit passwords. **Authorization policies** determine differing levels of access to information assets for differing levels of users. **Authorization management systems** establish where and when a user is permitted to access certain parts of a website. Their primary function is to restrict access to private information within a company's Internet infrastructure.

Although there are several authorization management products currently available, most operate in the same way: the system encrypts a user session to function like a passkey that follows the user from page to page, allowing access only to those areas that the user is permitted to enter, based on information set at the system database.

By establishing entry rules up front for each user, the authorization management system knows who is permitted to go where at all times.

The last step in developing an e-commerce security plan is performing a security audit. A **security audit** involves the routine review of access logs (identifying how outsiders are using the site as well as how insiders are accessing the site's assets). A monthly report should be produced that establishes the routine and non routine accesses to the systems and identifies unusual patterns of activities. As previously noted, tiger teams are often used by large corporate sites to evaluate the strength of existing security procedures. Many small firms have sprung up in the last five years to provide these services to large corporate sites.

Tech Laws of India

The information technology sector is the largest and fastest-growing industry in India. Over the years, this sector has witnessed huge investment along with a considerable amount of growth

contributing to the improved economy of the nation. Tech laws of India is now emerging as the "digital hub" of the world, with it being the largest employer in the private sector.

The incredible inclination with progressive nature in the field of Information Technology and the growth of the information service sector has drastically changed the world economy giving rise to a new system based on intellectuals, resulting in the new areas and scope of research & development, employment, productivity, efficiency, and enhanced attributes of growth.

The Information Technology industry in the last few decades has shown a tremendous contribution to the global economy. To estimate the prospects of the industry, the knowledge about the contribution and the driving factors forms the base.

Information Technology Sector – Indian Perspective

India has become the digital capabilities hub of the world with around 75% of global digital talent present in the country. In light of the increasing IT adoption, the IT sector treats as a separate entity of business model to an integrate model for providing the basic IT infrastructure and applications to keep business on track. Hence, in the current scenario, IT is treated as a business partner which helps in providing solutions to business problems connected with software.

India's software industry is one of the world's successful information technology industries. It has taken a long journey in setting up its base during the 1980s march for being the hub for many global firms by 2019 and still marching. India became the potential hub for the IT industry and almost all the giants of the IT industry started setting up their operations in India. The IT industry has witnessed tremendous transformation since 2000, in customizing to mass customization of products and services for their end-users.

Market Size

IT & BPM industry's revenue is estimated to be around US$ 191 billion in 2020, growing at 7.7% and expected to cross US$ 350 billion by 2025. The digital economy estimates to reach Rs 69,89,000 crore (US$ 1 trillion) by 2025. The total number of employees grew to 1.02 million cumulatively for four Indian IT majors (including TCS, Infosys, Wipro, HCL Tech) as of December 31, 2019.

Investments/ Developments

India is the largest employer in the software sector and has attracted a significant amount of investors from different countries. The computer software and hardware sector in India have been able to attract cumulative Foreign Direct Investment (FDI) inflow worth US$ 44.91 billion in the last two decades. The sector is ranked second in FDI inflow.

Role of Legal Advancement in Booming the IT Industry

- The development of the Indian IT sector dates back to 1974, when a mainframe manufacturer, Burroughs asked Tata Consultancy Services (TCS), to send software programmers for installing system software for a U.S. client. Until then, there was no proper governance of the IT Sector in private companies and the policies were not very effective.
- There was a huge outflow of skilled Indians to the western countries for taking up jobs due to the lack of job opportunities in the country. This gave a good opportunity to the IT sector to establish its base in the United States of America and several European countries. The first software export zone SEEPZ was set up in Mumbai/Bombay in 1973. Around 80 per cent of India's software exports were out of SEEPZ, Bombay in the 1980s.
- The immigration laws in the United States of America were relaxed in 1965 which attracted a large number of skilled Indian professionals aiming for research. The Indian economy remained hostile to the software industry through the 1970s. Import tariffs is as high as 135% on hardware and 100% on software and the software industry that did not consider an "industry",
- Indian Information Technology organizations developed as an industry during the '70s but didn't attract investment in the IT field due to restricting imports of computer peripherals, high import tax, strict Foreign Exchange and Regulation Act (FERA) limiting its allocation.
- The government of India's policy towards the IT sector has a complete new turn in 1984 – New Computer Policy (NCP-1984) will introduce. The policies gave the software sector the status of Industry-opening doors for FDI and other investments. The IT industry was freed from license-permit raj, permission for foreign companies to set up wholly-owned, export-dedicated units, and a scheme to set up a series of software parks that would offer infrastructure at less than market costs.

- In 1991 the Department of Electronics forms a corporation as Software Technology Parks of India (STPI) that, being owns by the government, could provide VSAT communications without moving away from its monopoly
- India and the European Union agreed to bilateral cooperation in the field of science and technology. A joint EU-India group of scholars was formed to further promote joint research and development.
- The IT industry is an employer to both technical and non-technical graduates and has a great potential to create huge foreign exchange inflows for India. India exports software and services to approximately 95 countries around the world. Countries get benefits by outsourcing their work to India due to low labour costs.
- The GOI started providing various incentives like tax holidays and competitive duty structures, reduction in the international communication cost, and infrastructure facilities to support IT Parks. These factors created huge opportunities in the IT sector leading to a boom in the sector.
- With an increase in technological advancement and internet usage, a lot of avenues for crimes coming up, with new laws enacts to curb such practices. Having said that, one of the major advances in the legal regime was the enactment of the Information Technology Act, 2000.
- As of February 2020, there were 417 approved SEZs across the country with 274 from IT & BPM and 143 as exporting SEZs.

Status of data privacy in consonance with the Information Technology sector

As we all know that the information technology market has advanced with the improvement in the field of technology and telecommunication networks. The capacity to collect, process, and store data has also increased. No doubt, such advancement in the IT sector has proved to be very emphatic, however, it has its own negative and devastating impacts covering a wide range of ethical and social issues. One such impact is the breach of data privacy. Data privacy is the collection, processing, and storing of personal and sensitive personal data. When such information is for an illegal purpose, it amounts to breach and the data collectors will liable for the same.

Under the Privacy of data, the consent-base system will follow in India wherein the data controller allow to use, process, and transfer the information to a third party once the consent of the person receives. This has led to a breach of privacy data and has given greater autonomy to data controllers.

Since India does not have a comprehensive data protection mechanism, the main enactment that deals with the protection of data is the Information Technology Act, 2000. Under the IT Act and the IT Rules, what is primarily sought to protect is 'personal information' and 'sensitive personal data or information'

Information under the privacy laws are categorised into two types:-

1. Personal Information or Data
2. Sensitive Personal information Data

Personal Information or data

Personal information is the details which enable the identification of a person. Further, personal information includes all the data about or relating to a person who is directly or indirectly identifiable, having regard to any characteristic, trait, attribute or any other feature of the identity of such natural person, or any combination of such features, or any combination of such features with any other information.

The name, address, email id, contact details, bank account details, etc. fall under the category of personal information.

Sensitive Personal Information Data

Sensitive Personal Information Data is under Rule 3 of the 2011 rules. This definition is inclusive and gives an exhaustive list of what are the types of sensitive personal information data. Therefore, Sensitive information is a type of personal information. This information is of vital importance to a person's life

Race or ethnic origin, religion, political affiliations, sexual orientation, criminal history, and trade union or association memberships are all considered sensitive information. Any information about biometrics, genetics, or medical history is also treated as sensitive information.

The strongest legal protection provided to personal information in India is through section 43A of the Information Technology Act, 2000[3] and Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011- The Rules provides for a comprehensive structure for Reasonable Security practices and gives a procedure of compliances to follow by the data processors.

Private Policy: Needs and Requirements

The Body Corporate must have a privacy policy for handling of and deal with personal information including sensitive personal data or information published on the official website of the Body Corporate where the information providers have easy access to it. Such a policy should have clear and accessible statements of the Body Corporate's practice and policy.

It should also lay down the types of personal and sensitive information or data collected via password; financial physical, physiological, and mental health condition; sexual orientation; medical records and history; biometric information; or any other information as required under the contract. As biometrics provide high accuracy and are less exposed to damages, most of the companies rely upon it.

The website shall contain clear information

- Private policy
- Name and details of the Grievance Officer
- The third-party shall not disclose the information or data any further.
- It shall not publish the obtained personal information and sensitive data or information.
- They have implemented security practices and standards for example IS/ISO/IEC 27001.
- They have Comprehensive documented information programmes. A security program is a document set of the company's information security policies, procedures, guidelines, and standards. The security program should provide a roadmap for effective security management practices and controls. Having a security program will help the company ensure the confidentiality, integrity, and availability of your client and customer information, as well as your organization's essential data.

- An information security policy that contains managerial, technical, operational and physical security control measures that commensurate with the information assets protecting with the nature of business

Standards Set for Reasonable Security Forces

- The International Standard IS/ISO/IEC 27001 on "Information Technology – Security Techniques – Information Security Management System – Requirements" is one such standard under Rule 8.
- Any industry association or an entity formed by such an association, whose members are self -regulating by following other than IS/ISO/IEC codes of best practices for data protection), shall get its codes of best practices duly approved and notified by the Central Government for effective implementation.

The Judgement was given by the Hon'ble Court in the case of Justice K. S. **Puttaswamy (Retd.) and Anr. vs Union of India and Ors**, in 2012 is considered to be the milestone in the history of data privacy and protection. The Court ruled that the Right to Privacy is a Fundamental Right and an integral part of Article 21. The Court also held that "Informational Privacy" is an essential facet in the Right to Privacy.

IT Laws and Regulations in Connection with IPR

The IT industry has a very deep connection with the IPR legislation. In the fast-moving pace of inventing new software, every IT industry works to its maximum to get their protection.

The Information Technology sector mainly composes of software, web designing, and data operations. Further, the new software develops every second by hard-working engineers who put in immense effort to make use of this software for innovations.

Under the IPR regime, the work is protected under three laws:

1. Patent Law
2. Copyright Law
3. Trademark Law

Patent Law

A patent grants monopoly for the exploitation of an invention. The holders of a patent are granted the exclusive right to prevent others from using, commercializing, or importing the patented products or processes. To protect such software, patents are crucial. Patent protection is to any field of technology without discrimination. Additionally, granting of the patent will ensure that these computer programs protect from being copied illegally. Additionally, from unauthorized use. Further, in India, only when the software attaches to hardware can have a patent. Making it difficult for all software to be patented. However, it is pertinent that we make a distinction between a computer programme. Further, software to encourage innovations in the IT sector.

Copyright law

Under Section 2(o) of the Copyright Act, a literary work includes a computer programme. Further, Section 13 states that copyright subsists in a literary work. Thus, it would subsist on a computer programme too. Additionally, Article 10 of the TRIPs also talks about computer programmes. Further, computer programmes have a source code and an object code which are copyrightable under the Indian Copyright Act.

Labour Laws in Information Technology Industry

It is a misconception that the IT industry exempts from employment and labour laws. But in the reality, these laws apply to the IT and ITES companies although the Factories Act, 1946; the Industrial Disputes Act, 1947, and certain State labour laws do not apply to IT Industries. Apart from that, all the other labour laws apply to IT Industries as well.

Following are some important employment laws that bind software companies.

1. ***Shops and Establishments Act***

   The Shops and Establishments Act has enhancement by every state in India. IT and ITES companies in a particular State are covered within the definition of 'commercial establishments' under the Shops & Establishments Act of the State.

2. The Employees' Provident Fund & Miscellaneous Provisions Act, 1952

The Employees Provident Fund Act provides for financial security and stability to employees. Additionally, in an event that the employee temporarily or no longer fit to work or at retirement.

Moreover, Employee Provident Fund (EPF) implements by the Employees Provident Fund Organization (EPFO) of India.

3. The Employees' State Insurance Act, 1948

The ESI Act is self-financing social security protecting workers and their dependents in contingencies. Such as sickness, maternity, death, disablement, or occupational disease. Further, being a self-financing scheme, the ESI funds will primarily build-out of contributions from employers. Additionally, employees payable monthly at a fixed percentage of wages paid.

4. The Employees' Compensation Act, 1923

This Act provides for compensation to workmen and employees for various injuries, even death, incurred during their employment.

5. The Payment of Bonus Act, 1965

The Act lays down a scheme for the calculation of bonus, payment of maximum. Further, the minimum bonus, deductions from the bonus, etc. Recently, the wage threshold for determining the eligibility of employees has been revised from Rs. 10,000 to Rs. 21,000 per month, thereby bringing a larger pool of employees under the coverage of the Act.

6. Equal Remuneration Act, 1976

The Act provides that employers cannot discriminate against men and women in matters of recruitment. Additionally, by notification in March 1977, the Government has 'Data processing and tabulating services'. Under the ambit of the Act thereby bringing IT and ITES industries in its sweep

7. Industrial Employment (Standing Orders) Act, 1946

The object of the Act is to require employers in industrial establishments. Additionally, it is to define with sufficient precision the rules and conditions of employment. Under them and to make them known to workmen/employees. Some states such as Karnataka have exempted the IT and ITES companies from the application of this Act.

8. The Maternity Benefit Act, 1961

The Maternity Benefit Act enacts for the benefit of working pregnant women. Who are, or have given birth, or suffered a miscarriage. This Act is on the moral that when a woman gives birth. She does it not only for herself but for the whole society.

9. The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013

The Act makes it the responsibility of the Employer to protect women against sexual harassment. The Act has laid down procedures for dealing with complaints and enquiries, protection of victims. Additionally prescribes punishment for sexual harassment, and also punishes false complaints of harassment. Noncompliance with this Act may invite a fine of up to Rs 50,000/- upon the employer. Further, cancellation of license to carry out business activities.

In addition to the above enactments, other laws such as the Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959, the Minimum Wages Act, the Payment of Gratuity Act are also applicable to the IT and ITES companies.

Government Policies and Controls on Encryption

Encryption and cryptographic techniques for preserving the security of online communication have become increasingly contested in India. Rapid digitalization in the past decade has led to the proliferation of domestic and foreign online communication services that use encryption and, consequently, pose challenges to national security bodies and law enforcement agencies (LEAs). To help overcome these challenges, the Indian government issued controversial new rules in February 2021 that require messaging communication providers to supply information regarding the originators of messages. Many providers argue that this requirement significantly weakens the end-to-end (E2E) encryption they deploy.

The contestation between maintaining higher degrees of online security and issuing new rules to grant technological exceptions for security agencies and LEAs is not specific to India. Conflicts between LEAs and companies that use encryption to protect personal data and communication have become public in many countries. For example, in 2016, there was a contentious public debate in the United States when the Federal Bureau of Investigation asked Apple to provide a backdoor to the smartphone of a suspected criminal by breaking its encryption protections. Apple

refused. While the bureau found a workaround, this did not create a durable solution to the issue.[3] In 2019, the Australian government passed a law that enables government agencies to force businesses to break encryption. The law has faced opposition from those arguing that this approach will weaken encryption and have adverse economic consequences. And in October 2020, the LEAs of the Five Eyes intelligence-sharing pact (which includes Australia, Canada, New Zealand, the United Kingdom, and the United States) issued a statement that called on technology companies to find a solution to the issue of E2E encryption. India supported this statement.

On the one hand, thanks to digitalization, India's security agencies and LEAs now have access to significantly more types of data—via mobile devices, over-the-top (OTT) platforms, and cloud storage, for example; they therefore can tap into more personal information for surveillance and investigation purposes. And for service providers, advances in encryption offer obvious benefits in terms of ensuring confidentiality, protecting the security of online communications and transactions, and authenticating the identities of individuals. But security agencies and LEAs argue that as more forms of secure and confidential communication become widely available, malicious actors are increasingly using them as shields to conceal criminal or terrorist activities. They further assert that the demands to cope with the negative effects of digitalization currently outweigh the advantages.

While other countries are dealing with similar issues, the solutions to India's concerns must reflect its particular legal and market structures and its security and law enforcement imperatives. The growth of mobile phone usage, internet access, and broadband networks has led to the significantly increased usage of OTT services for messaging, voice calls, and other forms of communication. Many of the industry's major companies, such as WhatsApp and Signal, use E2E encryption. OTT messaging services are provided by businesses who are not telecom service providers. Therefore, these services function very differently from traditional infrastructure, such as phone lines and towers.

7.2 E-COMMERCE PAYMENT SYSTEMS

For the most part, existing payment mechanisms such as cash, credit cards, debit cards, checking accounts, and stored value accounts have been able to be adapted to the online environment, albeit with some significant limitations that have led to efforts to develop alternatives. In

addition, new types of purchasing relationships, such as between individuals online, and new technologies, such as the development of the mobile platform, have also created both a need and an opportunity for the development of new payment systems. In this section, we provide an overview of the major e-commerce payment systems in use today.

Table 7.1 lists some of the major trends in e-commerce payments in 2016–2017.

- Payment by credit and/or debit card remains the dominant form of online payment.
- Mobile retail payment volume skyrockets.
- PayPal remains the most popular alternative payment method online.
- Apple, Google, Samsung, and PayPal extend their reach in mobile payment apps.
- Large banks enter the mobile wallet and P2P payments market.
- Square gains further traction with a smartphone app, credit card reader, and credit card processing service that permits anyone to accept credit card payments.
- Google refocuses Google Wallet, which had met with tepid response, solely on sending and receiving money.
- Mobile P2P payment systems such as Venmo take off.

Worldwide, online payments by consumers represented a market of almost €2.35 trillion in 2016. Institutions and business firms that can handle this volume of transactions (mostly the large banking and credit firms) generally extract 2%–3% of the transactions in the form of fees. Given the size of the market, competition for online payments is spirited. New forms of online payment are expected to attract a substantial part of this growth.

The primary form of online payment is still the existing credit and debit card system. Alternative payment methods such as PayPal continue to make inroads into traditional payment methods. Mobile payments are also expected to grow significantly. **Figure 7.2** illustrates the percentage of consumers that use various alternative payment methods in 2016. However, none of these alternative payment methods have become substitutes for the bank and credit cards, but instead provide consumers with alternative methods of accessing their existing bank and credit accounts.

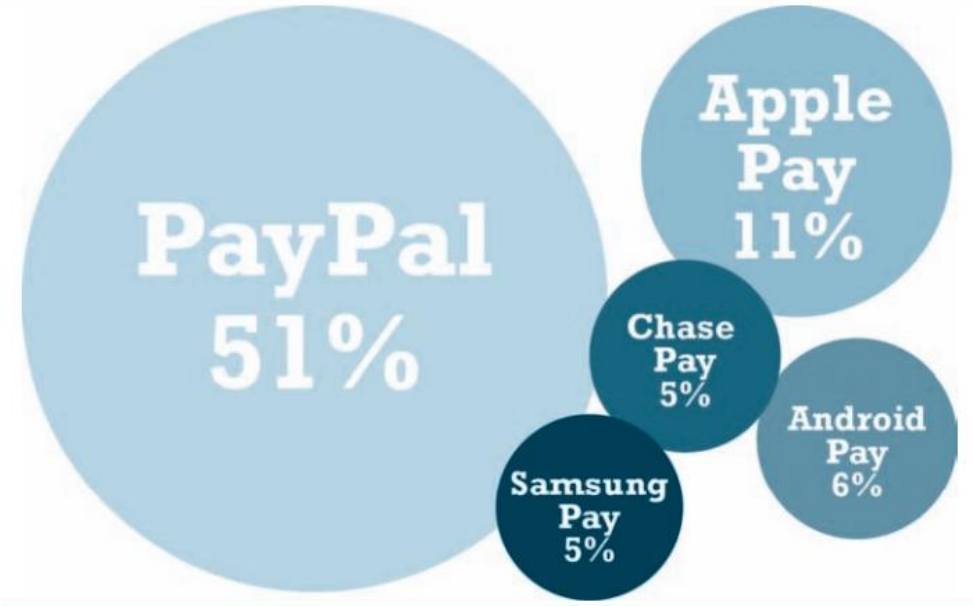

Fig 7.2 Alternative payment methods

In developing countries, e-commerce payments can be very different depending on traditions and infrastructure. Credit cards are not nearly as dominant a form of online payment as they are in the United States. If you plan on operating an e-commerce site in Europe, Asia, or Latin America, you will need to develop different payment systems for each region. For instance, in Denmark, Norway, and Finland payment is primarily with debit or credit cards, while in Sweden, payment after being tendered an invoice and by bank transfer are very popular in addition to credit/debit cards. In the Netherlands, the online payments service iDEAL is the most popular retail e-commerce payment method. In Italy, consumers rely heavily on both credit cards and PayPal. In Japan, although credit card is the primary payment method, many consumers still pick up and pay for goods using cash at local convenience stores.

ONLINE CREDIT CARD TRANSACTIONS

Because credit and debit cards are the dominant form of online payment, it is important to understand how they work and to recognize the strengths and weaknesses of this payment system. Online credit card transactions are processed in much the same way that in-store purchases are, with the major differences being that online merchants never see the actual card being used, no card impression is taken, and no signature is available. Online credit card transactions most closely resemble Mail Order-Telephone Order (MOTO) transactions. These types of purchases are also called Cardholder Not Present (CNP) transactions and are the major

reason that charges can be disputed later by consumers. Because the merchant never sees the credit card, nor receives a hand-signed agreement to pay from the customer, when disputes arise, the merchant faces the risk that the transaction may be disallowed and reversed, even though he has already shipped the goods or the user has downloaded a digital product. **Figure 7.3** illustrates the online credit card purchasing cycle.

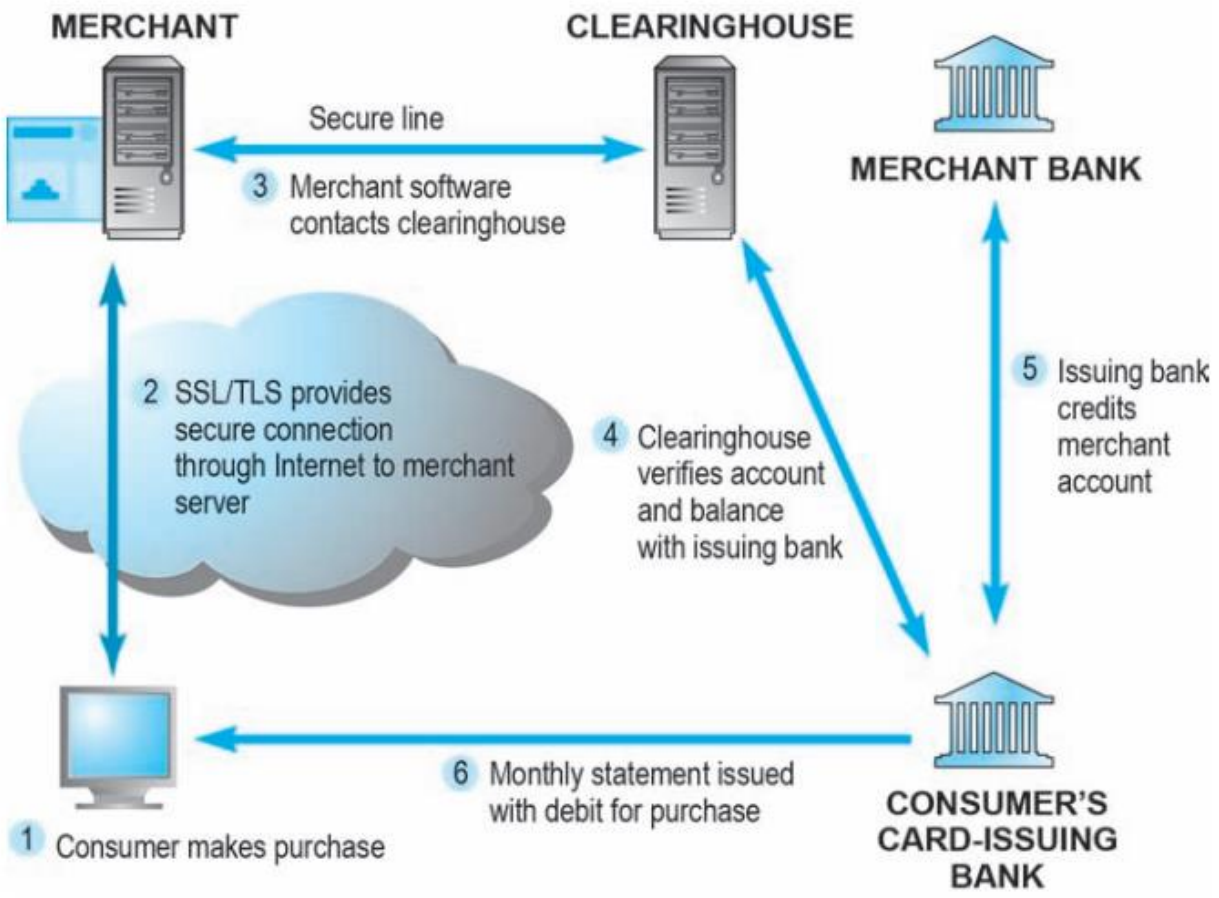

Fig. 7.3. Online credit card purchasing cycle

There are five parties involved in an online credit card purchase: consumer, merchant, clearinghouse, merchant bank (sometimes called the "acquiring bank"), and the consumer's card issuing bank. In order to accept payments by credit card, online merchants must have a merchant account established with a bank or financial institution. A **merchant account** is simply a bank account that allows companies to process credit card payments and receive funds from those transactions.

As shown in Figure 7.3, an online credit card transaction begins with a purchase (1). When a consumer wants to make a purchase, he or she adds the item to the merchant's shopping cart. When the consumer wants to pay for the items in the shopping cart, a secure tunnel through the Internet is created using SSL (Secure Socket Layer) /TLS (Transport Layer Security). Using encryption, SSL/TLS secures the session during which credit card information will be sent to the merchant and protects the information from interlopers on the Internet (2). SSL does not authenticate either the merchant or the consumer. The transacting parties have to trust one another.

Once the consumer credit card information is received by the merchant, the merchant software contacts a clearinghouse (3). As previously noted, a clearinghouse is a financial intermediary that authenticates credit cards and verifies account balances. The clearinghouse contacts the issuing bank to verify the account information (4). Once verified, the issuing bank credits the account of the merchant at the merchant's bank (usually this occurs at night in a batch process) (5). The debit to the consumer account is transmitted to the consumer in a monthly statement (6).

Credit Card E-commerce Enablers

Companies that have a merchant account still need to buy or build a means of handling the online transaction; securing the merchant account is only step one in a two-part process. Today, Internet payment service providers (sometimes referred to as payment gateways) can provide both a merchant account and the software tools needed to process credit card purchases online.

For instance, Authorize.net is an Internet payment service provider. The company helps a merchant secure an account with one of its merchant account provider partners and then provides payment processing software for installation on the merchant's server. The software collects the transaction information from the merchant's site and then routes it via the Authorize.net "payment gateway" to the appropriate bank, ensuring that customers are authorized to make their purchases. The funds for the transaction are then transferred to the merchant's merchant account. Cyber Source is another well-known Internet payment service provider.

Limitations of Online Credit Card Payment Systems

There are a number of limitations to the existing credit card payment system. The most important limitations involve security, merchant risk, administrative and transaction costs, and social equity.

The existing system offers poor security. Neither the merchant nor the consumer can be fully authenticated. The merchant could be a criminal organization designed to collect credit card numbers, and the consumer could be a thief using stolen or fraudulent cards. The risk facing merchants is high: consumers can repudiate charges even though the goods have been shipped or the product downloaded.

The banking industry attempted to develop a secure electronic transaction (SET) protocol, but this effort failed because it was too complex for consumers and merchants alike. The rate of online credit card fraud is expected to reach $4 billion in 2016, up from $2 billion in 2011. As banks switch to EMV cards with computer chips, offline credit card fraud becomes more difficult, encouraging criminals to focus on online fraud.

The administrative costs of setting up an online credit card system and becoming authorized to accept credit cards are high. Transaction costs for merchants also are significant—roughly 3% of the purchase plus a transaction fee of 20–35 cents per transaction, plus other setup fees.

Credit cards are not very democratic, even though they seem ubiquitous. Millions of young adults do not have credit cards, along with millions of others who cannot afford cards or who are considered poor risks because of low incomes.

ALTERNATIVE ONLINE PAYMENT SYSTEMS

The limitations of the online credit card system have opened the way for the development of a number of alternative online payment systems. Chief among them is PayPal.

PayPal (purchased by eBay in 2002 and then spun-off as an independent company again in 2015) enables individuals and businesses with e-mail accounts to make and receive payments up to a specified limit.

Paypal is an example of an **online stored value payment system**, which permits consumers to make online payments to merchants and other individuals using their bank account or credit/debit cards. It is available in 202 countries and 25 currencies around the world. PayPal builds on the existing financial infrastructure of the countries in which it operates. You establish a PayPal account by specifying a credit, debit, or checking account you wish to have charged or paid when conducting online transactions. When you make a payment using PayPal, you e-mail the payment to the merchant's PayPal account. PayPal transfers the amount from your credit or checking account to the merchant's bank account.

The beauty of PayPal is that no personal credit information has to be shared among the users, and the service can be used by individuals to pay one another even in small amounts. However, one issue with PayPal is its relatively high cost. For example, when using a credit card as the source of funds, to send or request money, the cost ranges from 2.9% to 5.99% of the amount (depending on the type of transaction) plus a small fixed fee (typically $0.30) per transaction. PayPal is discussed in further depth in the case study at the end of the chapter. Although PayPal is by far the most well-known and commonly used online credit/debit card alternative, there are a number of other alternatives as well. Pay with Amazon is aimed at consumers who have concerns about entrusting their credit card information to unfamiliar online retailers. Consumers can purchase goods and services at non-Amazon websites using the payment methods stored in their Amazon accounts, without having to re-enter their payment information at the merchant's site.

Amazon provides the payment processing. Visa Checkout (formerly V.me) and MasterCard's Master Pass substitute a user name and password for an actual payment card number during online checkout. Both Master Pass and Visa Checkout are supported by a number of large payment processors and online retailers. However, they have not yet achieved the usage of Paypal.

Bill Me Later (owned by PayPal as well) also appeals to consumers who do not wish to enter their credit card information online. Bill Me Later describes itself as an open-ended credit account. Users select the Bill Me Later option at checkout and are asked to provide their birth date and the last four digits of their social security number.

They are then billed for the purchase by Bill Me Later within 10 to 14 days. Bill Me Later is currently offered by more than 1,000 online merchants.

WU Pay (formerly eBillme, and now operated by Western Union) offers a similar service. WU Pay customers who select the WU Pay option at firms such as Sears, Kmart, and other retailers do not have to provide any credit card information. Instead they are e-mailed a bill, which they can pay via their bank's online bill payment service, or in person at any Western Union location. Dwolla is a similar cash-based payment network for both individuals and merchants. It bypasses the credit card network and instead connects directly into a bank account. In 2015, Dwolla eliminated its transaction and processing fees, changing its focus from consumer-to-consumer

payments to larger businesses. Dwolla has its own network that bypasses the Automated Clearing House (ACH), the traditional system for processing financial transactions in the United States, and in 2015, signed up major U.S. bank BBVA Compass. Earlier in the year, the U.S. Treasury had selected Dwolla (along with PayPal) to process payments to federal agencies, and in October 2015, the Chicago Mercantile Exchange chose Dwolla
to replace ACH. Dwolla now processes nearly $2 billion a year and has over 1 million accounts.

Like Dwolla, Stripe is another company that is attempting to provide an alternative to the traditional online credit card system. Stripe focuses on the merchant side of the process. It provides simple software code that enables companies to bypass much of the administrative costs involved in setting up an online credit card system, and instead lets companies begin accepting credit card payments almost immediately without the need to obtain a merchant account or use a gateway provider. Stripe recently introduced merchant apps that can accept NFC payments. Unlike PayPal, the customer doesn't need a Stripe account to pay, and all payments are made directly to the company rather than being routed through a third party.

MOBILE PAYMENT SYSTEMS: YOUR SMARTPHONE WALLET

The use of mobile devices as payment mechanisms is already well established in Europe and Asia and is now exploding in the United States, where the infrastructure to support mobile payment is finally being put in place.

Near field communication (NFC) is the primary enabling technology for mobile payment systems. **Near field communication (NFC)** is a set of short-range wireless technologies used to share information among devices within about 2 inches of each other (50 mm). NFC devices are either powered or passive. A connection requires one powered device (the initiator, such as a smartphone), and one target device, such as a merchant NFC reader, that can respond to requests from the initiator. NFC targets can be very simple forms such as tags, stickers, key fobs, or readers. NFC peer-to-peer communication is possible where both devices are powered. Consumers can swipe their NFC-equipped phone near a merchant's reader to pay for purchases. In September 2014, Apple introduced the iPhone 6, which is equipped with NFC chips designed to work with Apple's mobile payments platform, Apple Pay. Building on Apple Passbook and Touch ID biometric fingerprint scanning and encryption that Apple previously introduced in September 2012, Apple Pay is able to be used for mobile payments at the point-of-sale at a

physical store as well as online purchases using an iPhone. Other competitors in NFC-enabled mobile payments include Android Pay, Samsung Pay, PayPal, and Square. Surveys reveal that about 20%–30% of smartphone users have downloaded mobile wallet apps, but that only about 20% of these adopters have made a payment in the last month using these apps. The promise of riches beyond description to a firm that is able to dominate the mobile payments marketplace has set off what one commentator has called a goat rodeo surrounding the development of new technologies and methods of mobile payment.

SOCIAL/MOBILE PEER-TO-PEER PAYMENT SYSTEMS

In addition to using a mobile device as a vehicle for e-commerce and as a payment method at physical point-of-sale, another type of mobile payment transaction is becoming increasingly popular: social/mobile peer-to-peer payments. Services such as Venmo, Square Cash, Snapcash, the newly refocused Google Wallet, and the new Facebook Messenger Payment service all enable users to send another person money through a mobile application or website, funded by a bank debit card. There is no charge for this service. Currently, these services are the most popular among Millennials, which is the key demographic driving their growth. Venmo, owned by PayPal, is particularly popular, with its success in part due to its integration with Facebook and its social network newsfeed, which lets users see when friends are paying other friends or paying for products and services. In 2015, Venmo processed an estimated $8 billion in transactions and is growing at over 200% annually. In 2016, Facebook and PayPal announced that Facebook subscribers could use PayPal to purchase goods and services, with notifications coming through Facebook Messenger. Analysts forecast that mobile P2P will grow to $174 billion, worth 30% of total P2P payment volume, by 2020. That's up from $5.6 billion, or just 1%, in 2014.

DIGITAL CASH AND VIRTUAL CURRENCIES

Although the terms digital cash and virtual currencies are often used synonymously, they actually refer to two separate types of alternative payment systems. **Digital cash** typically is based on an algorithm that generates unique authenticated tokens representing cash value that can be used "in the real world." Bitcoin is the best known example of digital cash. Bitcoins are encrypted numbers (sometimes referred to as cryptocurrency) that are generated by a complex

algorithm using a peer-to-peer network in a process referred to as "mining" that requires extensive computing power.

Like real currency, Bitcoins have a fluctuating value tied to open-market trading. Like cash, Bitcoins are anonymous—they are exchanged via a 34-character alphanumeric address that the user has, and do not require any other identifying information. Bitcoins have recently attracted a lot of attention as a potential money laundering tool for cybercriminals and illicit drug markets like Silk Road, and have also been plagued by security issues, with some high-profile heists. Nonetheless, there are companies now using Bitcoins as a legitimate alternative payment system.

Virtual currencies, on the other hand, typically circulate primarily within an internal virtual world community, such as Linden Dollars, created by Linden Lab for use in its virtual world, Second Life. Virtual currencies are typically used for purchasing virtual goods.

7.3 ELECTRONIC BILLING PRESENTMENT AND PAYMENT

In 2007, for the first time, the number of bill payments made online exceeded the number of physical checks written in the United States. In the $19 trillion U.S. economy with a $13.3 trillion consumer sector for goods and services, there are billions of bills to pay. According to the U.S. Postal Service, U.S. households received about 21 billion bills in 2015 via the mail. No one knows for sure, but some experts believe the life-cycle cost of a paper bill for a business, from point of issuance to point of payment, ranges from $3 to $7. This calculation does not include the value of time to consumers, who must open bills, read them, write checks, address envelopes, stamp, and then mail remittances. The billing market represents an extraordinary opportunity for using the Internet as an electronic billing and payment system that potentially could greatly reduce both the cost of paying bills and the time consumers spend paying them. Estimates vary, but online payments are believed to cost between only 20 to 30 cents to process.

Electronic billing presentment and payment (EBPP) systems are systems that enable the online delivery and payment of monthly bills. EBPP services allow consumers to view bills electronically using either their desktop PC or mobile device and pay them through electronic funds transfers from bank or credit card accounts.

More and more companies are choosing to issue statements and bills electronically, rather than mailing out paper versions, especially for recurring bills such as utilities, insurance, and subscriptions.

MARKET SIZE AND GROWTH

In 2002, 61% of bill payments in the United States were made by check, and only 12% by online bill payments. In 2015, in contrast, online bill payments accounted for more than 55% of all bill payments, while paper checks now account for less than 20%. Among online households, almost three-quarters pay at least one bill online each month, and almost half receive at least one bill electronically each month. Mobile bill payments are surging, with 33% U.S. households in 2015 paying at least one bill on a mobile device. Most consumers cited the convenience and time saved by using mobile bill payment.

One major reason for the surge in EBPP usage is that companies are starting to realize how much money they can save through online billing. Not only is there the savings in postage and processing, but payments can be received more quickly (3 to 12 days faster, compared to paper bills sent via regular mail), thereby improving cash flow. Online bill payment options can also reduce the number of phone calls to a company's customer service line. In order to realize these savings, many companies are becoming more aggressive in encouraging their customers to move to EBPP by instituting a charge for the privilege of continuing to receive a paper bill.

Financials don't tell the whole story, however. Companies are discovering that a bill is both a sales opportunity and a customer retention opportunity, and that the electronic medium provides many more options when it comes to marketing and promotion. Rebates, savings offers, cross-selling, and upselling are all possible in the digital realm, and much less expensive than mailed envelopes stuffed with offers.

EBPP BUSINESS MODELS

There are four EBPP business models: online banking, biller-direct, mobile, and consolidator.

- The online banking model is the most widely used today. Consumers share their banking or credit card credentials with the merchant and authorize the merchant to charge the consumer's bank account. This model has the advantage of convenience for the consumer because the payments are deducted automatically, usually with a notice from the bank or the merchant that their account has been debited.

- In the biller-direct model, consumers are sent bills by e-mail notification, and go to the merchant's website to make payments using their banking credentials. This model has the advantage of allowing the merchant to engage with the consumer by sending coupons or rewards. The biller-direct model is a two-step process, and less convenient for consumers.
- The mobile model allows consumers to make payments using mobile apps, once again relying on their bank credentials as the source of funds. Consumers are notified of a bill by text message and authorize the payment. An extension of this is the social-mobile model, where social networks like Facebook integrate payment into their messaging services. The mobile model has several advantages, not least of which is the convenience for consumers of paying bills while using their phones, but also the speed with which bills can be paid in a single step. This is the fastest growing form of EBPP. In 2016, Facebook and PayPal announced a deal in which Facebook users can pay for purchases on Facebook using PayPal (Demos, 2016). Consumers will not have to leave Facebook in order to purchase and pay for products.
- In the consolidator model, a third party, such as a financial institution or a focused portal such as Intuit's Paytrust, Fiserv's MyCheckFree, Mint Bills, and others, aggregates all bills for consumers and permits one-stop bill payment. This model has the advantage of allowing consumers to see all their bills at one website or app. However, because bills come due at different times, consumers need to check their portals often. The consolidator model faces several challenges. For billers, using the consolidator model means an increased time lag between billing and payment, and also inserts an intermediary between the company and its customer.

Supporting these primary business models are infrastructure providers such as Fiserv, Yodlee, FIS Global, ACI Worldwide, MasterCard RPPS (Remote Payment and Presentment Service), and others that provide the software to create the EBPP system or handle billing and payment collection for the biller. **Figure 7.4** categorizes the major players in the EBPP marketspace.

Fig. 7.4 Major players in the EBPP marketspace

7.4 CHECK YOUR PROGRESS

1. Write the key steps in developing a security plan.
2. Write the major e-commerce payment systems in use today.
3. Write a note on digital cash.
4. What is Electronic billing presentment and payment (EBPP) systems?
5. Who are the Major players in the EBPP marketspace?

Answers to Check Your Progress:

1. Perform a risk assessment—an assessment of the risks and points of vulnerability.

   Develop a security policy—a set of statements prioritizing the information risks, identifying acceptable risk targets, and identifying the mechanisms for achieving these targets.

   Create an implementation plan—a plan that determines how you will translate the leves of acceptable risk into a set of tools, technologies, policies, and procedures.

   Create a security team—the individuals who will be responsible for ongoing maintenance, audits, and improvements.
2. **Digital cash** typically is based on an algorithm that generates unique authenticated tokens representing cash value that can be used "in the real world."
3. Online credit card transactions, PayPal, Mobile payment systems, Digital cash.

4. Electronic billing presentment and payment (EBPP) systems are a form of online payment systems for monthly bills. EBPP services allow consumers to view bills electronically and pay them through electronic funds transfers from bank or credit card accounts.
5. Major players in the EBPP marketspace include: online banking, biller-direct systems, mobile payment systems, and consolidators.

7.5 SUMMARY

In this unit, we have examined e-commerce security and payment issues. First, we will have identified the major security risks and their costs, and describe the variety of solutions currently available. Then, we have looked at the major payment methods and consider how to achieve a secure payment environment.

7.6 KEYWORDS

- **Implementation plan -** the action steps you will take to achieve the security plan goals
- **Security organization -** educates and trains users, keeps management aware of security threats and breakdowns, and maintains the tools chosen to implement security
- **Access controls -** determine who can gain legitimate access to a network
- **Authentication procedures -** include the use of digital signatures, certificates of authority, and public key infrastructure
- **Security token -** physical device or software that generates an identifier that can be used in addition to or in place of a password
- **Digital cash -** an alternative payment system in which unique, authenticated tokens represent cash value
- **Virtual currency -** typically circulates within an internal virtual world community or is issued by a specific corporate entity, and used to purchase virtual goods

7.7 SELF ASSESSMENT QUESTIONS

1. What features or abilities does an intrusion prevention system use to protect a network?

2. Differentiate between the security dimension of confidentiality and the concept of online privacy.
3. What are the general technologies and tools needed by merchants and users to implement a mobile payment system?
4. What risks do Bitcoin users face?
5. What is nonrepudiation and why is it an important dimension of e-commerce security? What technologies are used to establish nonrepudiation?

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UNIT 8- E-COMMERCE BUSINESS STRATEGIES

STRUCTURE

8.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Identify the key components of e-commerce business models.
- ✓ Describe the major B2C business models.
- ✓ Describe the major B2B business models.
- ✓ Define E-tailer
- ✓ Examine key business concepts and strategies applicable to e-commerce.

8.1 E-COMMERCE BUSINESS MODELS

A **business model** is a set of planned activities (sometimes referred to as *business processes*) designed to result in a profit in a marketplace. A business model is not always the same as a business strategy, although in some cases they are very close insofar as the business model explicitly takes into account the competitive environment. The business model is at the centre of the business plan. A **business plan** is a document that describes a firm's business model. A business plan always takes into account the competitive environment. An **e-commerce business model** aims to use and leverage the unique qualities of the Internet, the Web, and the mobile platform.

EIGHT KEY ELEMENTS OF A BUSINESS MODEL

If you hope to develop a successful business model in any arena, not just e-commerce, you must make sure that the model effectively addresses the eight elements listed in **Figure 8.1**. These elements are value proposition, revenue model, market opportunity, competitive environment, competitive advantage, market strategy, organizational development, and management team. Many writers focus on a firm's value proposition and revenue model. While these may be the most important and most easily identifiable aspects of a company's business model, the other elements are equally important when evaluating business models and plans, or when attempting to understand why a particular company has succeeded or failed. In the following sections, we describe each of the key business model elements more fully.

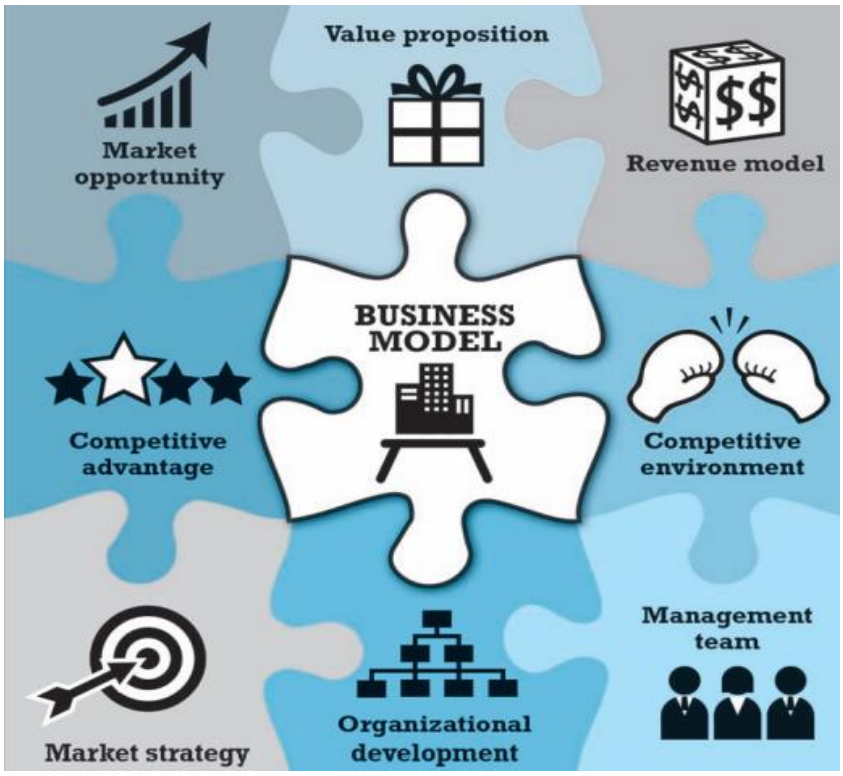

Fig. 8.1 A business model has eight key elements. Each element must be addressed if you hope to be successful.

Value Proposition

A company's value proposition is at the very heart of its business model. A **value proposition** defines how a company's product or service fulfils the needs of customers. To develop and/or analyse a firm's value proposition, you need to understand why customers will choose to do business with the firm instead of another company and what the firm provides that other firms do not and cannot. From the consumer point of view, successful e-commerce value propositions include personalization and customization of product offerings, reduction of product search costs, reduction of price discovery costs, and facilitation of transactions by managing product delivery.

For instance, before Amazon existed, most customers personally traveled to book retailers to place an order. In some cases, the desired book might not be available, and the customer would have to wait several days or weeks, and then return to the bookstore to pick it up. Amazon makes it possible for book lovers to shop for virtually any book in print from the comfort of their home or office, 24 hours a day, and to know immediately whether a book is in stock. Amazon's Kindle

takes this one step further by making e-books instantly available with no shipping wait. Amazon's primary value propositions are unparalleled selection and convenience.

Revenue Model

A firm's **revenue model** describes how the firm will earn revenue, generate profits, and produce a superior return on invested capital. We use the terms *revenue model* and *financial model* interchangeably. The function of business organizations is both to generate profits and to produce returns on invested capital that exceed alternative investments. Profits alone are not sufficient to make a company "successful". In order to be considered successful, a firm must produce returns greater than alternative investments. Firms that fail this test go out of existence. Although there are many different e-commerce revenue models that have been developed, most companies rely on one, or some combination, of the following major revenue models: advertising, subscription, transaction fee, sales, and affiliate.

In the **advertising revenue model**, a company that offers content, services, and/or products also provides a forum for advertisements and receives fees from advertisers. Companies that are able to attract the greatest viewership or that have a highly specialized, differentiated viewership and are able to retain user attention ("stickiness") are able to charge higher advertising rates. Yahoo, for instance, derives a significant amount of revenue from display and video advertising.

In the **subscription revenue model**, a company that offers content or services charges a subscription fee for access to some or all of its offerings. For instance, the digital version of *Consumer Reports* provides online and mobile access to premium content, such as detailed ratings, reviews, and recommendations, only to subscribers, who have a choice of paying a $6.95 monthly subscription fee or a $30.00 annual fee.

Experience with the subscription revenue model indicates that to successfully overcome the disinclination of users to pay for content, the content offered must be perceived as a high-value-added, premium offering that is not readily available elsewhere nor easily replicated. Companies successfully offering content or services online on a subscription basis include eHarmony (dating services), Ancestry (genealogy research), Microsoft's

Xbox Live (video games), Pandora, Spotify, and Apple Music (music), Scribd and Amazon's Kindle Unlimited program (e-books), and Netflix and Hulu (television and movies). Recently, a number of companies have been combining a subscription revenue model with a freemium strategy. In a **freemium strategy**, the companies give away a certain level of product or services

for free, but then charge a subscription fee for premium levels of the product or service. See the case study, *Freemium Takes Pandora Public*.

In the **transaction fee revenue model**, a company receives a fee for enabling or executing a transaction. For example, eBay provides an auction marketplace and receives a small transaction fee from a seller if the seller is successful in selling the item. E*Trade, a financial services provider, receives transaction fees each time it executes a stock transaction on behalf of a customer.

In the **sales revenue model**, companies derive revenue by selling goods, content, or services to customers. Companies such as Amazon, L.L.Bean, and Gap all have sales revenue models. A number of companies are also using a subscription-based sales revenue model. Birchbox, which offers home delivery of beauty products for a $10 monthly or $100 annual subscription price, is one example. Dollar Shave Club, which sells razor blades by subscription and was recently acquired by Unilever for $1 billion, is another.

In the **affiliate revenue model**, companies that steer business to an "affiliate" receive a referral fee or percentage of the revenue from any resulting sales. For example, MyPoints makes money by connecting companies with potential customers by offering special deals to its members. When they take advantage of an offer and make a purchase, members earn "points" they can redeem for freebies, and MyPoints receives a fee. Community feedback companies typically receive some of their revenue from steering potential customers to websites where they make a purchase. **Table 8.2** summarizes these major revenue models.

Table 8.2 Revenue models

REVENUE MODEL	EXAMPLES	REVENUE SOURCE
Advertising	Yahoo	Fees from advertisers in exchange for advertisements
Subscription	eHarmony Consumer Reports Online Netflix	Fees from subscribers in exchange for access to content or services
Transaction Fee	eBay E*Trade	Fees (commissions) for enabling or executing a transaction
Sales	Amazon L.L.Bean Birchbox iTunes	Sales of goods, information, or services
Affiliate	MyPoints	Fees for business referrals

Market Opportunity

The term **market opportunity** refers to the company's intended **marketspace** (i.e.,an area of actual or potential commercial value) and the overall potential financial opportunities available to the firm in that marketspace. The market opportunity is usually divided into smaller market niches. The realistic market opportunity is defined by the revenue potential in each of the market niches where you hope to compete.

For instance, let's assume you are analysing a software training company that creates online software-learning systems for sale to businesses. The overall size of the software training market for all market segments is approximately €65 billion.

The overall market can be broken down, however, into two major market segments: instructor-led training products, which comprise about 70% of the market (€45.5 billion in revenue), and computer-based training, which accounts for 30% (€19.5 billion).

There are further market niches within each of those major market segments, such as the FT 500 online training market and the small business computer-based training market. Because the firm is a start-up firm, it cannot compete effectively in the large business, online training market (about €13.65 billion). Large brand-name training firms dominate this niche. The start-up firm's real market opportunity is to sell to the thousands of small business firms that spend about €5.85 billion on online software training. This is the size of the firm's realistic market opportunity.

Competitive Environment

A firm's **competitive environment** refers to the other companies selling similar products and operating in the same marketspace. It also refers to the presence of substitute products and potential new entrants to the market, as well as the power of customers and suppliers over your business. We discuss the firm's environment later in the chapter. The competitive environment for a company is influenced by several factors: how many competitors are active, how large their operations are, what the market share of each competitor is, how profitable these firms are, and how they price their products.

Firms typically have both direct and indirect competitors. Direct competitors are companies that sell very similar products and services into the same market segment. For example, Priceline and Travelocity, both of whom sell discount airline tickets online, are direct competitors because both companies sell identical products— cheap tickets. Indirect competitors are companies that may be in different industries but still compete indirectly because their products can substitute for one another. For instance, automobile manufacturers and airline companies operate in different industries, but they still compete indirectly because they offer consumers alternative means of transportation. CNN, a news outlet, is an indirect competitor of ESPN, not because they sell identical products, but because they both compete for consumers' time online.

The existence of a large number of competitors in any one segment may be a sign that the market is saturated and that it may be difficult to become profitable. On the other hand, a lack of competitors could signal either an untapped market niche ripe for the picking, or a market that has already been tried without success because there is no money to be made. Analysis of the competitive environment can help you decide which it is.

Competitive Advantage

Firms achieve a **competitive advantage** when they can produce a superior product and/or bring the product to market at a lower price than most, or all, of their competitors. Firms also compete on scope. Some firms can develop global markets, while other firms can develop only a national or regional market.

Firms that can provide superior products at the lowest cost on a global basis are truly advantaged.

Firms achieve competitive advantages because they have somehow been able to obtain differential access to the factors of production that are denied to their competitors— at least in the short term. Perhaps the firm has been able to obtain very favourable terms from suppliers, shippers, or sources of labour. Or perhaps the firm has more experienced, knowledgeable, and loyal employees than any competitors. Maybe the firm has a patent on a product that others cannot imitate, or access to investment capital through a network of former business colleagues or a brand name and popular image that other firms cannot duplicate. An **asymmetry** exists whenever one participant in a market has more resources—financial backing, knowledge, information, and/or power—than other participants. Asymmetries lead to some firms having an edge over others, permitting them to come to market with better products, faster than competitors, and sometimes at lower cost.

For instance, when Apple announced iTunes, a service offering legal, downloadable individual song tracks for 99 cents a track that would be playable on any digital device with iTunes software, the company had better-than-average odds of success simply because of Apple's prior success with innovative hardware designs, and the large stable of music firms that Apple had meticulously lined up to support its online music catalog. Few competitors could match the combination of cheap, legal songs and powerful hardware to play them on.

One rather unique competitive advantage derives from being a first mover. A **first-mover advantage** is a competitive market advantage for a firm that results from being the first into a marketplace with a serviceable product or service. If first movers develop a loyal following or a unique interface that is difficult to imitate, they can sustain their first-mover advantage for long periods. Amazon provides a good example. However, in the history of technology-driven business innovation, most first movers often lack the **complementary resources** needed to sustain their advantages, and often follower firms reap the largest rewards. Indeed, many of the success stories we discuss in this book are those of companies that were slow followers—businesses that gained knowledge from the failure of pioneering firms and entered into the market late.

Some competitive advantages are called "unfair." An **unfair competitive advantage** occurs when one firm develops an advantage based on a factor that other firms cannot purchase. For instance, a brand name cannot be purchased and is in that sense an "unfair" advantage. Brands

are built upon loyalty, trust, reliability, and quality. Once obtained, they are difficult to copy or imitate, and they permit firms to charge premium prices for their products.

In **perfect markets**, there are no competitive advantages or asymmetries because all firms have access to all the factors of production (including information and knowledge) equally. However, real markets are imperfect, and asymmetries leading to competitive advantages do exist, at least in the short term. Most competitive advantages are short term, although some can be sustained for very long periods. But not forever. In fact, many respected brands fail every year.

Companies are said to **leverage** their competitive assets when they use their competitive advantages to achieve more advantage in surrounding markets. For instance, Amazon's move into the online grocery business leverages the company's huge customer database and years of e-commerce experience.

Market Strategy

No matter how tremendous a firm's qualities, its marketing strategy and execution are often just as important. The best business concept, or idea, will fail if it is not properly marketed to potential customers.

Everything you do to promote your company's products and services to potential customers is known as marketing. **Market strategy** is the plan you put together that details exactly how you intend to enter a new market and attract new customers. For instance, Twitter, YouTube, and Pinterest have a social network marketing strategy that encourages users to post their content for free, build personal profile pages, contact their friends, and build a community. In these cases, the customer becomes part of the marketing staff!

Organizational Development

Although many entrepreneurial ventures are started by one visionary individual, it is rare that one person alone can grow an idea into a multi-million dollar company. In most cases, fast-growth companies—especially e-commerce businesses—need employees and a set of business procedures. In short, all firms—new ones in particular— need an organization to efficiently implement their business plans and strategies.

Many e-commerce firms and many traditional firms that attempt an e-commerce strategy have failed because they lacked the organizational structures and supportive cultural values required to support new forms of commerce.

Companies that hope to grow and thrive need to have a plan for **organizational development** that describes how the company will organize the work that needs to be accomplished. Typically, work is divided into functional departments, such as production, shipping, marketing, customer support, and finance. Jobs within these functional areas are defined, and then recruitment begins for specific job titles and responsibilities. Typically, in the beginning, generalists who can perform multiple tasks are hired. As the company grows, recruiting becomes more specialized. For instance, at the outset, a business may have one marketing manager. But after two or three years of steady growth, that one marketing position may be broken down into seven separate jobs done by seven individuals.

For instance, eBay founder Pierre Omidyar started an online auction site, according to some sources, to help his girlfriend trade Pez dispensers with other collectors, but within a few months the volume of business had far exceeded what he alone could handle. So he began hiring people with more business experience to help out. Soon the company had many employees, departments, and managers who were responsible for overseeing the various aspects of the organization.

Management Team

Arguably, the single most important element of a business model is the **management team** responsible for making the model work. A strong management team gives a model instant credibility to outside investors, immediate market-specific knowledge, and experience in implementing business plans. A strong management team may not be able to salvage a weak business model, but the team should be able to change the model and redefine the business as it becomes necessary.

Eventually, most companies get to the point of having several senior executives or managers. How skilled managers are, however, can be a source of competitive advantage or disadvantage. The challenge is to find people who have both the experience and the ability to apply that experience to new situations. To be able to identify good managers for a business start-up, first consider the kinds of experiences that would be helpful to a manager joining your company. What kind of technical background is desirable? What kind of supervisory experience is necessary? How many years in a particular function should be required? What job functions should be fulfilled first: marketing, production, finance, or operations? Especially

in situations where financing will be needed to get a company off the ground, do prospective senior managers have experience and contacts for raising financing from outside investors?

Table 8.3 summarizes the eight key elements of a business model and the key questions that must be answered in order to successfully develop each element.

Table 8.3 Key elements of a business model

COMPONENTS	KEY QUESTIONS
Value proposition	Why should the customer buy from you?
Revenue model	How will you earn money?
Market opportunity	What marketspace do you intend to serve, and what is its size?
Competitive environment	Who else occupies your intended marketspace?
Competitive advantage	What special advantages does your firm bring to the marketspace?
Market strategy	How do you plan to promote your products or services to attract your target audience?
Organizational development	What types of organizational structures within the firm are necessary to carry out the business plan?
Management team	What kinds of experiences and background are important for the company's leaders to have?

RAISING CAPITAL

Raising capital is one of the most important functions for a founder of a start-up business and its management team. Not having enough capital to operate effectively is a primary reason why so many start-up businesses fail. Many entrepreneurs initially "bootstrap" to get a business off the ground, using personal funds derived from savings, credit card advances, home equity loans, or from family and friends. Funds of this type are often referred to as **seed capital**. Once such funds are exhausted, if the company is not generating enough revenue to cover operating costs, additional capital will be needed. Traditional sources of capital include incubators, commercial banks, angel investors, venture capital firms, and strategic partners. One of the most important aspects of raising capital is the ability to boil down the elements of the company's business plan into an **elevator pitch**, a short two-to-three minute (about the length of an elevator ride, giving rise to its name) presentation aimed at convincing investors to invest. **Table 8.4** lists the key elements of an elevator pitch.

Table 8.4 Key elements of an elevator pitch

ELEMENT	DESCRIPTION
Introduction	Your name and position; your company's name, and a tagline in which you compare what your company does to a well-known company. Example: "My name is X, I am the founder of Y, and we are the Uber/Amazon of Z."
Background	The origin of your idea and the problem you are trying to solve.
Industry size/market opportunity	Brief facts about the (hopefully very large) size of the market.
Revenue model/numbers/ growth metrics	Insight into your company's revenue model and results thus far, how fast it is growing, and early adopters, if there are any.
Funding	The amount of funds you are seeking and what it will help you achieve.
Exit strategy	How your investors will achieve a return on their investment.

Incubators (sometimes also referred to as accelerators) such as Rocket Internet typically provide a small amount of funding, but more importantly, also provide an array of services to start-up companies that they select to participate in their programs, such as business, technical, and marketing assistance, as well as introductions to other sources of capital. Well-known European incubator programs include INiTs (Austria), Accelerace (Denmark), Numa (Le Camping) (France), and SeedRocket (Spain).

Obtaining a loan from a commercial bank is often difficult for a start-up company without much revenue, but it may be worthwhile to investigate programs offered by the U.S. Small Business Administration, and its state or local equivalents. The advantage of obtaining capital in the form of a loan (debt) is that, although it must be repaid, it does not require an entrepreneur to give up any ownership of the company.

Angel investors are typically wealthy individuals (or a group of individuals) who invest their own money in an exchange for an equity share in the stock in the business. In general, angel investors make smaller investments (typically €1 million or less) than venture capital firms, are interested in helping a company grow and succeed, and invest on relatively favorable terms compared to later stage investors. The first round of external investment in a company is sometimes referred to as Series A financing.

Venture capital investors typically become more interested in a start-up company once it has begun attracting a large audience and generating some revenue, even if it is not profitable. **Venture capital investors** invest funds they manage for other investors such as investment banks, pension funds, insurance companies, or other businesses, and usually want to obtain a larger stake in the business and exercise more control over the operation of the business. Venture capital investors also typically want a well-defined "exit strategy," such as a plan for an initial public offering or acquisition of the company by a more established business within a relatively short period of time (typically 3 to 7 years), that will enable them to obtain an adequate return on their investment. Venture capital investment often ultimately means that the founder(s) and initial investors will no longer control the company at some point in the future.

Crowdfunding involves using the Internet to enable individuals to collectively contribute money to support a project. The concepts behind crowdfunding have been popularized by Kickstarter and Indiegogo, but they could not be used for equity investments in for-profit companies due to various laws and regulations. In Europe, the European Commission has indicated an intention to support crowdfunding and has issued several reports aimed at promoting understanding this form of financing at the EU level and laying the groundwork for possible future action, as well as a guide to crowdfunding for small and medium enterprises as part of its effort to inform citizens about both its benefits and risks.

CATEGORIZING E-COMMERCE BUSINESS MODELS: SOME DIFFICULTIES

There are many e-commerce business models, and more are being invented every day. The number of such models is limited only by the human imagination, and our list of different business models is certainly not exhaustive. However, despite the abundance of potential models, it is possible to identify the major generic types (and subtle variations) of business models that have been developed for the e-commerce arena and describe their key features. It is important to realize, however, that there is no one correct way to categorize these business models.

Our approach is to categorize business models according to the different major e-commerce sectors—B2C and B2B—in which they are utilized. You will note, however, that fundamentally similar business models may appear in more than one sector. For example, the business models of online retailers (often called e-tailers) and e-distributors are quite similar. However, they are distinguished by the market focus of the sector in which they are used. In the case of e-tailers in

the B2C sector, the business model focuses on sales to the individual consumer, while in the case of the e-distributor, the business model focuses on sales to another business. Many companies use a variety of different business models as they attempt to extend into as many areas of e-commerce as possible.

A business's technology platform is sometimes confused with its business model. For instance, "mobile e-commerce" refers to the use of mobile devices and cellular and wide area networks to support a variety of business models. Commentators sometimes confuse matters by referring to mobile e-commerce as a distinct business model, which it is not. All of the basic business models we discuss below can be implemented on both the traditional Internet/Web and mobile platforms. Likewise, although they are sometimes referred to as such, social e-commerce and local e-commerce are not business models in and of themselves, but rather subsectors of B2C and B2B e-commerce in which different business models can operate.

You will also note that some companies use multiple business models. For instance, Amazon has multiple business models: it is an e-retailer, content provider, market creator, e-commerce infrastructure provider, and more. eBay is a market creator in the B2C and C2C e-commerce sectors, using both the traditional Internet/ Web and mobile platforms, as well as an e-commerce infrastructure provider.

Firms often seek out multiple business models as a way to leverage their brands, infrastructure investments, and assets developed with one business model into new business models.

Finally, no discussion of e-commerce business models would be complete without mention of a group of companies whose business model is focused on providing the infrastructure necessary for e-commerce companies to exist, grow, and prosper. These are the e-commerce enablers. They provide the hardware, operating system software, networks and communications technology, applications software, web design, consulting services, and other tools required for e-commerce.

While these firms may not be conducting e-commerce per se (although in many instances, e-commerce in its traditional sense is in fact one of their sales channels), as a group they have perhaps profited the most from the development of e-commerce.

8.2 MAJOR B2C BUSINESS MODELS

Business-to-consumer (B2C) e-commerce, in which online businesses seek to reach individual consumers, is the most well-known and familiar type of e-commerce. **Table 8.5** illustrates the major business models utilized in the B2C arena.

Table 8.5 B2C business model

BUSINESS MODEL	VARIATIONS	EXAMPLES	DESCRIPTION	REVENUE MODELS
E-tailer	Virtual Merchant	Amazon Blue Nile Bluefly	Online version of retail store, where customers can shop at any hour of the day or night without leaving their home or office	Sales of goods
	Bricks-and-Clicks	Walmart Sears	Online distribution channel for a company that also has physical stores	Sales of goods
	Catalog Merchant	L.L.Bean LillianVernon	Online version of direct mail catalog	Sales of goods
	Manufacturer-Direct	Dell Mattel	Manufacturer uses online channel to sell direct to customer	Sales of goods
Community Provider		Facebook LinkedIn Twitter Pinterest	Sites where individuals with particular interests, hobbies, common experiences, or social networks can come together and "meet" online	Advertising, subscription, affiliate referral fees
Content Provider		Wall Street Journal CNN ESPN Netflix Apple Music	Offers customers newspapers, magazines, books, film, television, music, games, and other forms of online content	Advertising, subscription fees, sales of digital goods
Portal	Horizontal/ General	Yahoo AOL MSN Facebook	Offers an integrated package of content, search, and social network services: news, e-mail, chat, music downloads, video streaming, calendars, etc. Seeks to be a user's home base	Advertising, subscription fees, transaction fees
	Vertical/ Specialized (Vortal)	Sailnet	Offers services and products to specialized marketplace	Advertising, subscription fees, transaction fees
	Search	Google Bing Ask	Focuses primarily on offering search services	Advertising, affiliate referral
Transaction Broker		E*Trade Expedia Monster Travelocity Orbitz	Processors of online sales transactions, such as stockbrokers and travel agents, that increase customers' productivity by helping them get things done faster and more cheaply	Transaction fees
Market Creator		eBay Etsy Amazon Priceline	Businesses that use Internet technology to create markets that bring buyers and sellers together	Transaction fees
Service Provider		VisaNow Wave RocketLawyer	Companies that make money by selling users a service, rather than a product	Sales of services

E-TAILER

Online retail stores, often called **e-tailers**, come in all sizes, from giant Amazon to tiny local stores. E-tailers are similar to the typical bricks-and-mortar storefront, except that customers only have to connect to the Internet or use their smartphone to place an order. Some e-tailers, which are referred to as "bricks-and-clicks," are subsidiaries or divisions of existing physical stores and carry the same products. REI, JCPenney, Barnes & Noble, Walmart, and Staples are examples of companies with complementary

online stores. Others, however, operate only in the virtual world, without any ties to physical locations. Amazon, Blue Nile, and Bluefly are examples of this type of e-tailer.

Several other variations of e-tailers—such as online versions of direct mail catalogs, online malls, and manufacturer-direct online sales—also exist.

Given that the overall global retail market in 2016 is estimated to be around

€20.9 trillion, the market opportunity for e-tailers is very large. Every Internet and smartphone user is a potential customer. Customers who feel time-starved are even better prospects, because they want shopping solutions that will eliminate the need to drive to the mall or store (Bellman, Lohse, and Johnson, 1999). The e-tail revenue model is product-based, with customers paying for the purchase of a particular item.

This sector, however, is extremely competitive. Because **barriers to entry** (the total cost of entering a new marketplace) into the e-tail market are low, tens of thousands of small e-tail shops have sprung up. Becoming profitable and surviving is very difficult, however, for e-tailers with no prior brand name or experience. The e-tailer's challenge is differentiating its business from existing competitors.

Companies that try to reach every online consumer are likely to deplete their resources quickly. Those that develop a niche strategy, clearly identifying their target market and its needs, are best prepared to make a profit. Keeping expenses low, selection broad, and inventory controlled is key to success in e-tailing, with inventory being the most difficult to gauge.

COMMUNITY PROVIDER

Although community providers are not a new phenomenon, the Internet has made such sites for like-minded individuals to meet and converse much easier, without the limitations of geography and time to hinder participation. **Community providers** create an online environment where

people with similar interests can transact (buy and sell goods); share interests, photos, videos; communicate with like-minded people; receive interest-related information; and even play out fantasies by adopting online personalities called avatars. Facebook, LinkedIn, Twitter, and Pinterest, and hundreds of other smaller, niche social networks all offer users community-building tools and services.

The basic value proposition of community providers is to create a fast, convenient, one-stop site where users can focus on their most important concerns and interests, share the experience with friends, and learn more about their own interests. Community providers typically rely on a hybrid revenue model that includes subscription fees, sales revenues, transaction fees, affiliate fees, and advertising fees from other firms that are attracted by a tightly focused audience.

Community providers make money from advertising and through affiliate relationships with retailers. Some of the oldest online communities are The Well, which provides a forum for technology and Internet-related discussions, and The Motley Fool, which provides financial advice, news, and opinions. The Well offers various membership plans ranging from $10 to $15 a month. Motley Fool supports itself through ads and selling products that start out "free" but turn into annual subscriptions.

Consumers' interest in communities is mushrooming. Community is, arguably, the fastest growing online activity. While many community providers have had a difficult time becoming profitable, many have succeeded over time, with advertising as their main source of revenue. Both the very large social networks such as Facebook, Twitter, and LinkedIn, as well as niche social networks with smaller dedicated audiences, are ideal marketing and advertising territories. Traditional online communities such as The Motley Fool and WebMD (which provides medical information to members) find that the breadth and depth of knowledge offered is an important factor. Community members frequently request knowledge, guidance, and advice. Lack of experienced personnel can severely hamper the growth of a community, which needs facilitators and managers to keep discussions on course and relevant. For the newer community social networks, the most important ingredients of success appear to be ease and flexibility of use, and a strong customer value proposition. For instance, Facebook leapfrogged over its rival MySpace by encouraging the development of third-party revenue-producing applications. Online communities benefit significantly from offline word-of-mouth, viral marketing. Online

communities tend to reflect offline relationships. When your friends say they have a profile on Facebook and ask you to "friend" them, you are encouraged to build your own online profile.

CONTENT PROVIDER

Content providers distribute information content, such as digital video, music, photos, text, and artwork. Content providers can make money via a variety of different revenue models, including advertising, subscription fees, and sales of digital goods.

For instance, in the case of Spotify, a monthly subscription fee provides users with access to millions of music tracks. Other content providers, such as the *Financial Times* online newspaper, *Harvard Business Review*, and many others, charge customers for content downloads in addition to, or in place of, a subscription fee.

Of course, not all online content providers charge for their information: just look at the websites or mobile apps for the BBC, Football365, and Silicon.co.uk, and the online versions of many newspapers and magazines. Users can access news and information without paying a cent, although sometimes they may be required to register as a member. These popular online content providers make money in other ways, such as through advertising and partner promotions. Increasingly, however, "free content" may be limited to headlines and text, whereas premium content—in-depth articles or videos—is sold for a fee.

Generally, the key to becoming a successful content provider is owning the content. Traditional owners of copyrighted content—publishers of books and newspapers, broadcasters of radio and television content, music publishers, and movie studios—have powerful advantages over newcomers who simply offer distribution channels and must pay for content, often at very high prices.

Some content providers, however, do not own content, but syndicate (aggregate) and then distribute content produced by others. *Syndication* is a major variation of the standard content provider model. Aggregators, who collect information from a wide variety of sources and then add value to that information through post-aggregation services, are another variation. For instance, Shopzilla collects information on the prices of thousands of goods online, analyzes the information, and presents users with tables showing the range of prices and links to the sites where the products can be purchased. Shopzilla adds value to content it aggregates, and resells this value to advertisers.

Any e-commerce start-up that intends to make money by providing content is likely to face difficulties unless it has a unique information source that others cannot access. For the most part, this business category is dominated by traditional content providers. The *Insight on Technology* case, *Will the Connected Car Become the Next Hot Entertainment Vehicle?*, discusses how changes in Internet technology are driving the development of new business models in the online content market.

PORTAL

Portals such as Yahoo, MSN, and AOL offer users powerful search tools as well as an integrated package of content and services, such as news, e-mail, instant messaging, calendars, shopping, music downloads, video streaming, and more, all in one place. Initially, portals sought to be viewed as "gateways" to the Internet. Today, however, the portal business model is to be a destination. They are marketed as places where consumers will hopefully stay a long time to read news, find entertainment, and meet other people (think of destination resorts). Portals do not sell anything directly—or so it seems—and in that sense they can present themselves as unbiased. Portals generate revenue primarily by charging advertisers for ad placement, collecting referral fees for steering customers to other sites, and charging for premium services.

Although there are numerous portals/search engines, the top five (Google, Microsoft's Bing, Yahoo, Ask, and AOL) in the United States gather more than 95% of U.S. search engine traffic because of their superior brand recognition. Many of the top portal/search engines were among the first to appear on the Web and therefore had first-mover advantages. Being first confers an advantage because customers come to trust a reliable provider and experience switching costs if they change to late arrivals in the market. By garnering a large chunk of the marketplace, first movers—just like a single telephone network—can offer customers access to commonly shared ideas, standards, and experiences.

The traditional portals have company: Facebook and other social networks are now the initial start or home page (portal) for millions of Internet users. Yahoo, AOL, and others like them are considered to be horizontal portals because they define their marketspace to include all users of the Internet. Vertical portals (sometimes called vortals) attempt to provide similar services as horizontal portals, but are focused around a particular subject matter or market segment. For instance, Sailnet focuses on the world's sailing community, and provides sailing news, articles,

discussion groups, free e-mail, and a retail store. Although the total number of vortal users may be much lower than the number of portal users, if the market segment is attractive enough, advertisers are willing to pay a premium in order to reach a targeted audience. Also, visitors to specialized niche vortals spend more money than the average Yahoo visitor. Google and Ask can also be considered portals of a sort, but focus primarily on offering search and advertising services.

They generate revenues primarily from search engine advertising sales and also from affiliate referral fees.

TRANSACTION BROKER

Companies that process transactions for consumers normally handled in person, by phone, or by mail are **transaction brokers**. The largest industries using this model are financial services, travel services, and job placement services. The online transaction broker's primary value propositions are savings of money and time. In addition, most transaction brokers provide timely information and opinions. Companies such as Monster offer job searchers a national marketplace for their talents and employers a national resource for that talent. Both employers and job seekers are attracted by the convenience and currency of information. Online stock brokers charge commissions that are considerably less than traditional brokers, with many offering substantial deals, such as cash and a certain number of free trades, to lure new customers.

Given rising consumer interest in financial planning and the stock market, the market opportunity for online transaction brokers appears to be large. However, while millions of customers have shifted to online brokers, some are still wary about switching from their traditional broker who provides personal advice and a brand name.

Fears of privacy invasion and the loss of control over personal financial information also contribute to market resistance. Consequently, the challenge for online brokers is to overcome consumer fears by emphasizing the security and privacy measures in place, and, like physical banks and brokerage firms, providing a broad range of financial services and not just stock trading.

Transaction brokers make money each time a transaction occurs. Each stock trade, for example, nets the company a fee, based on either a flat rate or a sliding scale related to the size of the

transaction. Attracting new customers and encouraging them to trade frequently are the keys to generating more revenue for these companies.

Travel sites generate commissions from travel bookings and job sites generate listing fees from employers up front, rather than charging a fee when a position is filled.

MARKET CREATOR

Market creators build a digital environment in which buyers and sellers can meet, display and search for products and services, and establish prices. Prior to the Internet and the Web, market creators relied on physical places to establish a market. Beginning with the medieval marketplace and extending to today's New York Stock Exchange, a market has meant a physical space for transacting business. There were few private digital network marketplaces prior to the Web. The Web changed this by making it possible to separate markets from physical space. Prime examples are Priceline, which allows consumers to set the price they are willing to pay for various travel accommodations and other products (sometimes referred to as a reverse auction), and eBay, the online auction site utilized by both businesses and consumers. Market creators make money by either charging a percentage of every transaction made, or charging merchants for access to the market.

For example, eBay's auction business model is to create a digital environment for buyers and sellers to meet, agree on a price, and transact. This is different from transaction brokers who actually carry out the transaction for their customers, acting as agents in larger markets. At eBay, the buyers and sellers are their own agents. Each sale on eBay nets the company a commission based on the percentage of the item's sales price, in addition to a listing fee. eBay is one of the few e-commerce companies that has been profitable virtually from the beginning. Why? One answer is that eBay has no inventory or production costs. It is simply a middleman.

The market opportunity for market creators is potentially vast, but only if the firm has the financial resources and marketing plan to attract sufficient sellers and buyers to the marketplace. As of June 30, 2016, eBay had more than 164 million active buyers, and this makes for an efficient market (eBay Inc., 2016). There are many sellers and buyers for each type of product, sometimes for the same product, for example, laptop computer models. Many other digital auctions have sprung up in smaller, more specialized vertical market segments such as jewelry and automobiles.

Uber, Airbnb, and Lyft are another example of the market creator business model (although they could also be categorized as service providers). On-demand service companies (also sometimes called sharing economy companies) are market creators that have developed online platforms that allow people to sell services, such as transportation or spare rooms, in a marketplace that operates in the cloud and relies on the Web or smartphone apps to conduct transactions. It is important to note that, although referred to as sharing economy or mesh economy companies, these companies do not in fact share resources. Users of these services are either selling something or buying something, and the companies produce revenue by extracting fees for each transaction. However, they do unlock the economic value in spare resources (personal cars and rooms) that might otherwise have been lost. In the process they have created huge online markets. For instance, Uber (founded in 2009) currently operates in over 480 cities in 69 countries around the world. Airbnb, founded in 2008, operates in more than 190 countries and 34,000 cities, lists over 2 million rooms available for rent, and has had over 60 million people use its services to book a room. Airbnb has raised around $2.4 billion in funding thus far and is valued at $30 billion; Uber has raised over $12.5 billion and is valued at around $68 billion.

SERVICE PROVIDER

While e-tailers sell products online, **service providers** offer services online. There's been an explosion in online services that is often unrecognized. Photo sharing, video sharing, and user-generated content (in blogs and social networks) are all services provided to customers. Google has led the way in developing online applications such as Google Maps, Google Docs, and Gmail. Other personal services such as online medical bill management, financial and pension planning, and travel recommendation are showing strong growth.

Service providers use a variety of revenue models. Some charge a fee, or monthly subscriptions, while others generate revenue from other sources, such as through advertising and by collecting personal information that is useful in direct marketing.

Many service providers employ a freemium revenue model, in which some basic services are free, but others require the payment of additional charges. Much like retailers who trade products for cash, service providers trade knowledge, expertise, and capabilities for revenue. Obviously, some services cannot be provided online. For example, dentistry, plumbing, and car repair

cannot be completed via the Internet. However, online arrangements can be made for these services. Online service providers may offer computer services, such as data storage (Dropbox and Carbonite), provide legal services (Rocket Lawyer), or accounting or bookkeeping services (Wave, Bench). Grocery shopping sites such as Fresh Direct and Peapod are also providing services. To complicate matters a bit, most financial transaction brokers (described previously) provide services such as college tuition and pension planning. Travel brokers also provide vacation-planning services, not just transactions with airlines and hotels. Indeed, mixing services with your products is a powerful business strategy pursued by many hard-goods companies (for example, warranties are services).

The basic value proposition of service providers is that they offer consumers valuable, convenient, time-saving, and low-cost alternatives to traditional service providers or provide services that are truly unique. Where else can you search billions of web pages, or share photos with as many people instantly? Research has found, for instance, that a major factor in predicting online buying behaviour is *time starvation*.

Time-starved people tend to be busy professionals who work long hours and simply do not have the time to pick up packages, buy groceries, send photos, or visit with financial planners. The market opportunity for service providers is as large as the variety of services that can be provided and potentially is much larger than the market opportunity for physical goods. We live in a service-based economy and society; witness the growth of fast-food restaurants, package delivery services, and wireless cellular phone services. Consumers' increasing demand for convenience products and services bodes well for current and future online service providers.

Marketing of service providers must allay consumer fears about hiring a vendor online, as well as build confidence and familiarity among current and potential customers. Building confidence and trust is critical for service providers just as it is for retail product merchants.

8.3 B2B BUSINESS MODELS

Earlier we noted that business-to-business (B2B) e-commerce, in which businesses sell to other businesses, is more than 10 times the size of B2C e-commerce, even though most of the public attention has focused on B2C. For instance, it is estimated that revenues for all types of B2B e-commerce worldwide will total around €19.8 trillion in 2016, compared to about €2.35 trillion for retail and travel-related B2C e-commerce. Clearly, most of the revenues in e-commerce

involve B2B e-commerce. Much of this activity is unseen and unknown to the average consumer. **Table 8.1** lists the major business models utilized in the B2B arena.

Table 8.1 B2B business models

BUSINESS MODEL	EXAMPLES	DESCRIPTION	REVENUE MODEL
(1) NET MARKETPLACE			
E-distributor	Grainger Amazon Business	Single-firm online version of retail and wholesale store; supply maintenance, repair, operation goods; indirect inputs	Sales of goods
E-procurement	Ariba Supplier Network PerfectCommerce	Single firm creating digital markets where sellers and buyers transact for indirect inputs	Fees for market-making services, supply chain management, and fulfillment services
Exchange	Go2Paper	Independently owned vertical digital marketplace for direct inputs	Fees and commissions on transactions
Industry Consortium	TheSeam SupplyOn	Industry-owned vertical digital market open to select suppliers	Fees and commissions on transactions
(2) PRIVATE INDUSTRIAL NETWORK			
	Walmart Procter & Gamble	Company-owned network that coordinates supply chains with a limited set of partners	Cost absorbed by network owner and recovered through production and distribution efficiencies

E-DISTRIBUTOR

Companies that supply products and services directly to individual businesses are **e-distributors**. W.W. Grainger, for example, is the largest distributor of maintenance, repair, and operations (MRO) supplies. In the past, Grainger relied on catalog sales and physical distribution centers in metropolitan areas. Its catalog of equipment went online in 1995. In 2015, Grainger's e-commerce platform, which includes websites and mobile apps, produced $3.3 billion in sales (41% of its total revenue) for the company.

E-distributors are owned by one company seeking to serve many customers. However, as with exchanges (described on the next page), critical mass is a factor. With e-distributors, the more products and services a company makes available, the more attractive it is to potential customers. One-stop shopping is always preferable to having to visit numerous sites to locate a particular part or product.

E-PROCUREMENT

Just as e-distributors provide products to other companies, **e-procurement firms** create and sell access to digital markets. Firms such as Ariba, for instance, have created software that helps

large firms organize their procurement process by creating minidigital markets for a single firm. Ariba creates custom-integrated online catalogs (where supplier firms can list their offerings) for purchasing firms. On the sell side, Ariba helps vendors sell to large purchasers by providing software to handle catalog creation, shipping, insurance, and finance. Both the buy and sell side software is referred to generically as "value chain management" software.

B2B service providers make money through transaction fees, fees based on the number of workstations using the service, or annual licensing fees. They offer purchasing firms a sophisticated set of sourcing and supply chain management tools that permit firms to reduce supply chain costs. In the software world, firms such as Ariba are sometimes also called Software as a Service (SaaS) or Platform as a Service (PaaS) providers; they are able to offer firms much lower costs of software by achieving scale economies. **Scale economies** are efficiencies that result from increasing the size of a business, for instance, when large, fixed-cost production systems (such as factories or software systems) can be operated at full capacity with no idle time. In the case of software, the marginal cost of a digital copy of a software program is nearly zero, and finding additional buyers for an expensive software program is exceptionally profitable.

This is much more efficient than having every firm build its own supply chain management system, and it permits firms such as Ariba to specialize and offer their software to firms at a cost far less than the cost of developing it.

EXCHANGES

Exchanges have garnered most of the B2B attention and early funding because of their potential market size even though today they are a small part of the overall B2B picture. An **exchange** is an independent digital marketplace where hundreds of suppliers meet a smaller number of very large commercial purchasers. Exchanges are owned by independent, usually entrepreneurial startup firms whose business is making a market, and they generate revenue by charging a commission or fee based on the size of the transactions conducted among trading parties. They usually serve a single vertical industry such as steel, polymers, or aluminum, and focus on the exchange of direct inputs to production and short-term contracts or spot purchasing. For buyers, B2B exchanges make it possible to gather information, check out suppliers, collect prices, and keep up to date on the latest happenings all in one place. Sellers, on the other hand, benefit from

expanded access to buyers. The greater the number of sellers and buyers, the lower the sales cost and the higher the chances of making a sale. The ease, speed, and volume of transactions are summarily referred to as *market liquidity*.

In theory, exchanges make it significantly less expensive and time-consuming to identify potential suppliers, customers, and partners, and to do business with each other. As a result, they can lower transaction costs—the cost of making a sale or purchase.

Exchanges can also lower product costs and inventory-carrying costs—the cost of keeping a product on hand in a warehouse. B2B exchanges have had a difficult time convincing thousands of suppliers to move into singular digital markets where they face powerful price competition, and an equally difficult time convincing businesses to change their purchasing behaviour away from trusted long-term trading partners. As a result, the number of exchanges has fallen significantly.

INDUSTRY CONSORTIA

Industry consortia are industry-owned vertical marketplaces that serve specific industries, such as the automobile, aerospace, chemical, floral, or logging industries. In contrast, horizontal marketplaces sell specific products and services to a wide range of companies. Vertical marketplaces supply a smaller number of companies with products and services of specific interest to their industry, while horizontal marketplaces supply companies in different industries with a particular type of product and service, such as marketing-related, financial, or computing services. For example, SupplyOn, founded in 2000 and owned by industrial giants Bosch (one of the world's largest suppliers of automotive components), Continental (a leading automotive manufacturing company), and Schaeffler (a global manufacturer of various types of bearings), among others, provides a shared supply chain collaboration platform for companies in various manufacturing industries. In 2016, in addition to its shareholders, its customers include Airbus, BMW, BorgWarner, Siemens, Thales, and many other major global manufacturing companies.

Industry consortia have tended to be more successful than independent exchanges in part because they are sponsored by powerful, deep-pocketed industry players, and also because they strengthen traditional purchasing behavior rather than seek to transform it.

PRIVATE INDUSTRIAL NETWORKS

A **private industrial network** (sometimes referred to as a private trading exchange or PTX) is a digital network designed to coordinate the flow of communications among firms engaged in business together. The network is owned by a single large purchasing firm. Participation is by invitation only to trusted long-term suppliers of direct inputs. These networks typically evolve out of a firm's own enterprise resource planning (ERP) system, and are an effort to include key suppliers in the firm's own business decision making. For instance, Walmart operates one of the largest private industrial networks in the world for its suppliers, who on a daily basis use Walmart's network to monitor the sales of their goods, the status of shipments, and the actual inventory level of their goods.

8.4 CHECK YOUR PROGRESS

1. Identify the key components of e-commerce business models.
2. List the major B2C business models.
3. List the major B2B business models.
4. What is a freemium strategy?
5. What is seed capital?

Answers to Check Your Progress:

1. Value proposition, Revenue model, Market opportunity, Competitive environment, Competitive advantage, Market strategy, Organizational development, Management team
2. Portal, E-tailer, Content provider, Transaction broker, Market creator, Service provider, Community provider
3. E-distributor, E-procurement, Exchange, Industry consortium, Private industrial network
4. **freemium strategy -** companies give away a certain level of product or services for free, but then charge a subscription fee for premium levels of the product or service
5. **seed capital -** typically, an entrepreneur's personal funds derived from savings, credit card advances, home equity

8.5 SUMMARY

Thousands of firms have discovered that they can spend other people's invested capital much faster than they can get customers to pay for their products or services. In most instances of failure, the business model of the firm is faulty from the beginning. In contrast, successful e-commerce firms have business models that are able to leverage the unique qualities of the Internet, the Web, and the mobile platform, provide customers real value, develop highly effective and efficient operations, avoid legal and social entanglements that can harm the firm, and produce profitable business results. In addition, successful business models must scale. The business must be able to achieve efficiencies as it grows in volume. But what is a business model, and how can you tell if a firm's business model is going to produce a profit? In this unit, we focused on business models and basic business concepts that you must be familiar with in order to understand e-commerce.

8.6 KEYWORDS

- **Business model -** a set of planned activities designed to result in a profit in a marketplace
- **Business plan -** a document that describes a firm's business model
- **E-commerce business model -** a business model that aims to use and leverage the unique qualities of the Internet, the Web, and the mobile platform
- **value proposition -** defines how a company's product or service fulfils the needs of customers
- **revenue model -** describes how the firm will earn revenue, produce profits, and produce a superior return on invested capital
- **advertising revenue model -** a company provides a forum for advertisements and receives fees from advertisers
- **subscription revenue model -**a company offers its users content or services and charges a subscription fee for access to some or all of its offerings
- **freemium strategy -** companies give away a certain level of product or services for free, but then charge a subscription fee for premium levels of the product or service
- **transaction fee revenue model -** a company receives a fee for enabling or executing a transaction

8.7 SELF ASSESSMENT QUESTIONS

1. Identify and describe the business model element that specifies how the company's product will fulfil the needs of its customers.
2. How can e-commerce technologies be used to improve a firm's value web?
3. What revenue models do content providers use, and what is the key to becoming a successful content provider?
4. What disadvantages are faced by "first-mover" companies entering a marketspace?
5. Define market opportunity and describe how you would determine a new company's realistic market opportunity.

8.8 REFERENCES

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BLOCK-3 INTRODUCTION

The subject of online marketing, branding, and market communications is very broad and deep. We have two units to cover the material. In unit 9, we begin by examining consumer behaviour on the Web, the major types of online marketing and branding, and the technologies that support advances in online marketing. We then focus on understanding the costs and benefits of online marketing communications. In unit 10, we focus on the social, mobile, and local marketing phenomenon in greater depth. In unit 11, we discuss the ethical, social, and political issues raised in e-commerce, provide a framework for organizing the issues, and make recommendations for managers who are given the responsibility of operating e-commerce companies within commonly accepted standards of appropriateness.

In Unit 12 we discuss about Online media. Today, the print industry, including newspapers, books, and magazines, is having a difficult time coping with the movement of their readership to digital alternatives. Broadcast and cable television, along with Hollywood and the music industry, are also wrestling with outdated business models based on physical media. Established media giants are continuing tomake extraordinary investments in unique online content, new technology, new digital distribution channels, and entirely new business models. Internet giants like Apple, Google, Amazon, and Facebook are competing to dominate online content distribution.

This block consists of 4 units and is organized as follows:

Unit 9 : E-commerce Marketing and Advertising

Internet audience and consumer behavior, Digital commerce marketing and advertising strategies and tools, Internet marketing technologies

Unit 10 : Social, Mobile and Local Marketing

Introduction, Social Marketing, Local and location based mobile marketing, location based marketing platforms

.

Unit 11 : Ethics, Laws and E-commerce

Understanding Ethical, Social, and Political Issues in E-commerce, Privacy and Information Rights, Intellectual Property Rights

Unit 12: Online media

Online content, Online publishing Industry, Online entertainment industry, Case study : Netflix

UNIT -9: E-COMMERCE MARKETING AND ADVERTISING

Structure

9.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Identify the key features of the Internet audience, the basic concepts of consumer behavior and purchasing, and how consumers behave online
- ✓ Identify and describe the basic digital commerce marketing and advertising strategies and tools.
- ✓ Identify and describe the main technologies that support online marketing.
- ✓ Estimate the costs and benefits of online marketing communications

9.1 INTERNET AUDIENCE AND CONSUMER BEHAVIOR

Before firms can begin to sell their products online, they must first understand whatkinds of people they will find online and how those people behave in the onlinemarketplace. In this section, we focus primarily on individual consumers in thebusiness-to-consumer (B2C) arena. However, many of the factors discussed apply tothe B2B arena as well, insofar as purchasing decisions by firms are made by individuals

INTERNET TRAFFIC PATTERNS: THE ONLINE CONSUMER PROFILE

We will start with an analysis of some basic background demographics of online consumers.The first principle of marketing and sales is “know thy customer.” Who isonline, who shops online

and why, and what do they buy? In 2016, around 3.3 billion people of all ages had access to the Internet. In the United Kingdom, broadband householdpenetration is estimated to have reached 87% in 2016, with a similar penetration rate in Germany (86%).

Although the number of new online users increased at a rate of 30% a year orhigher in the early 2000s, over the last several years, this growth rate has slowed.

E-commerce businesses can no longer count on a double-digit growth rate in the online population to fuel their revenues. The days of extremely rapid growth in the U.S. Internet population are over.

Intensity and Scope of Usage

The slowing rate of growth in the Internet population is compensated for, in part, byan increasing intensity and scope of use. In 2016, more than 80% of the U.S. populationregularly used the Internet, spending a total of almost 5 hours and 45 minutes aday. Internet use by U.S. teens is even more pervasive,with over 90% saying they go online daily, and about 25% reporting that they use theInternet almost constantly. In 2016, mobile smartphonesand tablets are major access points to the Internet and online commerce. About 2.5billion people, about 75% of all Internet users, access the Internet using a mobilephone. Owners of mobile devices in the United Kingdom spend about 2 hours and 40minutes a day using them for non telephone activities such as playing games, viewingvideos, and visiting social networks. Engaging in such activities is widespread—inthe United States in 2016, around 180 million mobile users played games, about 140million watched videos, over 160 million visited a social network, and millions of otherslistened to music or shopped. According to the PewResearch Center, the more time users spend online, becoming more comfortable andfamiliar with Internet features and services, the more services they are likely to explore.

Demographics and Access

Women are slightly more likely to purchase online than men, but not significantly so.With respect to online banking, the demographics are similar—those 65 and older areless likely than any age group to bank online, while those with at least some collegeare more likely than those with a high school diploma or less. Online banking is alsomore popular with men than women. No significant differences were found in termsof ethnicity (Pew Research Center, 2012). Other commentators have observed thatchildren of poorer and less educated families spend considerably more time usingtheir access devices for entertainment (movies, games, Facebook,

and texting) thando children from wealthier households. For all children and teenagers, the majority of time spent on the Internet is often labeled as “wasted time” because the majority ofonline use is for entertainment, and not education or learning.

CONSUMER BEHAVIOR MODELS

Once firms have an understanding of who is online, they need to focus on how consumersbehave online. The study of **consumer behavior** is a social science disciplinethat attempts to model and understand the behavior of humans in a marketplace.

Several social science disciplines play roles in this study, including sociology, psychology,and economics. Models of consumer behavior attempt to predict or “explain” whatconsumers purchase and where, when, how much, and why they buy. The expectationis that if the consumer decision-making process can be understood, firms will have amuch better idea how to market and sell their products. **Figure 9.1** illustrates ageneral consumer behavior model that takes into account a wide range of factors thatinfluence a consumer’s marketplace decisions.

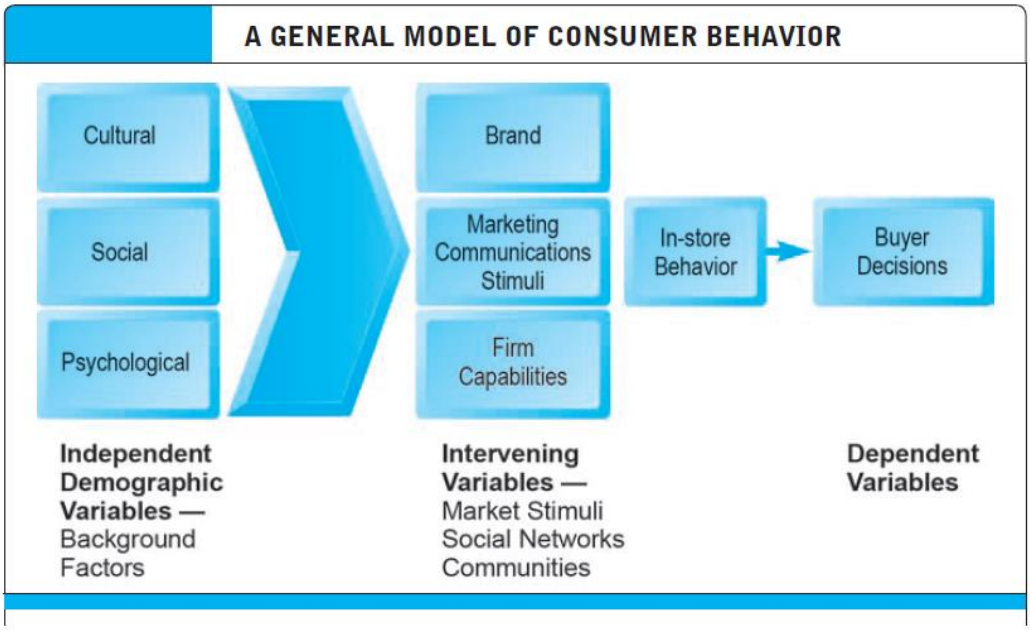

Fig 9.1 A general model of consumer behavior

PROFILES OF ONLINE CONSUMERS

Online consumer behavior parallels that of offline consumer behavior with someobvious differences. It is important to first understand why people choose the Internetchannel to conduct transactions. **Table 9.2** lists the main reasons consumers choosethe online channel.

WHY CONSUMERS CHOOSE THE ONLINE CHANNEL	
REASON	PERCENTAGE OF RESPONDENTS
Lower prices	59%
Shop from home	53%
Shop 24/7	44%
Wider variety of products available	29%
Easier to compare and research products and offers	27%
Products only available online	22%
Online customer reviews	18%
Better product information available	7%
Promotion via e-mail or text	7%
Social media influence	1%

Table 9,1 Why consumers choose the online channel

While price is an important consideration, consumers also shop online becauseof convenience, which in turn is produced largely by saving them time. Overalltransaction cost reduction appears to be a major motivator for choosing the onlinechannel.

THE ONLINE PURCHASING DECISION

Once online, why do consumers actually purchase a product or service at a specificsite? Among the most important reasons are price and the availability of free shipping.That the seller is someone whom the purchaser trusts is also a very important factor.

The ability to make a purchase without paying tax and the availability of an onlinecoupon are also significant factors.You also need to consider the process that buyers follow when making a purchasedecision, and how the Internet environment affects consumers' decisions. There arefive stages in the consumer decision process: awareness of need, search for more information,evaluation of alternatives, the actual purchase decision, and post-purchasecontact

with the firm. **Figure 9.2** shows the consumer decision process and the typesof offline and online marketing communications that support this process and seek toinfluence the consumer before, during, and after the purchase decision.

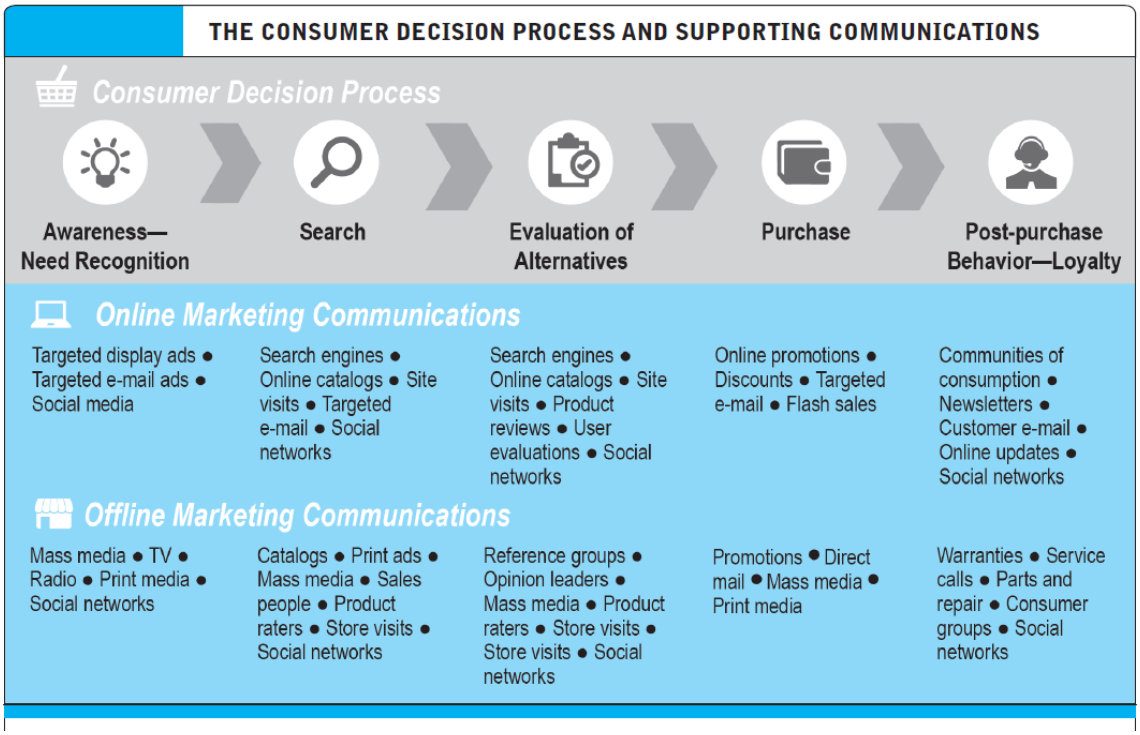

Fig. 9.2 The consumer decision process and supporting communications

The stages of the consumer decision process are basically the same whether theconsumer is offline or online. On the other hand, the general model of consumerbehavior requires modification to take into account new factors, and the unique featuresof e-commerce that allow new opportunities to interact with the customer onlinealso need to be accounted for. In **Figure 9.3**, we have modified the general modelof consumer behavior to focus on user characteristics, product characteristics, andwebsite and mobile platform features, along with traditional factors such as brandstrength and specific market communications (advertising) and the influence of bothonline and offline social networks.

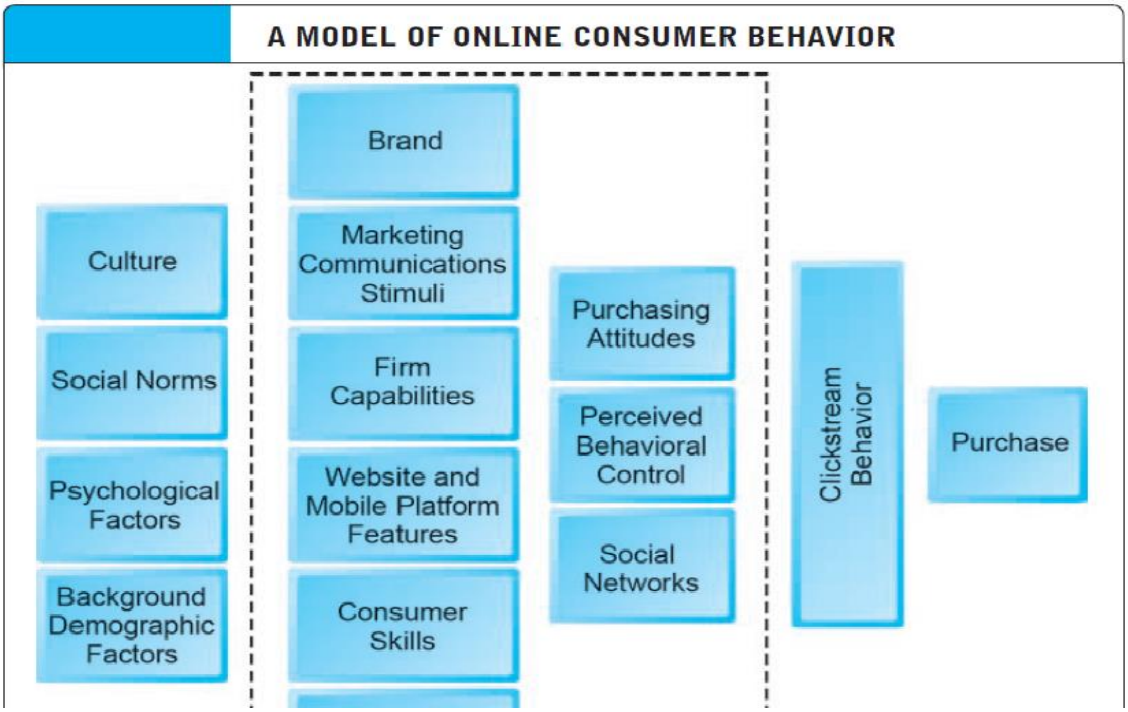

Fig 9.3 A model of online consumer behavior

In the online model, website and mobile platform features, along with consumerskills, product characteristics, attitudes towards online purchasing, and perceptionsabout control over the online environment come to the fore. Website and mobile platform features include latency (delay in downloads), navigability, and confidencein online security. There are parallels in the analog world. For instance, it is well known that consumer behavior can be influenced by store design, and that understandingthe precise movements of consumers through a physical store can enhancesales if goods and promotions are arranged along the most likely consumer tracks.

Consumer skills refers to the knowledge that consumers have about how to conductonline transactions (which increases with experience). Product characteristics refersto the fact that some products can be easily described, packaged, and shipped online,whereas others cannot. Combined with traditional factors, such as brand, advertising, and firm capabilities, these factors lead to specific attitudes about purchasing from ane-commerce firm (trust in the firm and favorable customer experience) and a sensethat the consumer can control his or her environment online.

9.2 DIGITAL COMMERCE MARKETING AND ADVERTISING STRATEGIES AND TOOLS

Online marketing has many similarities to, and differences from, ordinary marketing. The objective of online marketing—as in all marketing—is to build customer relationshipsso that the firm can achieve above-average returns (both by offering superiorproducts or services and by communicating the brand's features to the consumer).These relationships are a foundation for the firm's brand. But online marketing isalso very different from ordinary marketing because the nature of the medium andits capabilities are so different from anything that has come before.There are four features of online marketing that distinguish it from traditionalmarketing channels. Compared to traditional print and television marketing, onlinemarketing can be more personalized, participatory, peer-to-peer, and communal.

Not all types of online marketing have these four features. For instance, there's not muchdifference between a marketing video splashed on your computer screen withoutyour consent and watching a television commercial. However, the same marketingvideo can be targeted to your personal interests, community memberships, and allowyou to share it with others using a Like or + tag. Marketers are learning that the mosteffective forms of online marketing have all four of these features.

STRATEGIC ISSUES AND QUESTIONS

In the past, the first step in building an online brand was to build a website, and thentry to attract an audience. The most common "traditional" marketing techniques forestablishing a brand and attracting customers were search engine marketing, displayads, e-mail campaigns, and affiliate programs. This is still the case: building a websiteis still a first step, and the "traditional" online marketing techniques are still the mainpowerhouses of brand creation and online sales revenue. But today, marketers need to take a much broader view of the online marketing challenge, and to consider othermedia channels for attracting an audience such as social media and mobile devices,in concert with traditional websites.

The five main elements of a comprehensive multi-channel marketing plan are:website, traditional online marketing, social marketing, mobile marketing, and offlinemarketing. **Table 9.3**

illustrates these five main platforms, central elements withineach type, some examples, and the primary function of marketing in each situation.

THE DIGITAL MARKETING ROADMAP

TYPE OF MARKETING	PLATFORMS	EXAMPLES	FUNCTION
Website	Traditional website	Ford.com	Anchor site
Traditional Online Marketing	Search engine marketing	Google; Bing; Yahoo	Query-based intention marketing
	Display advertising	Yahoo; Google; MSN	Interest- and context-based marketing; targeted marketing
	E-mail	Major retailers	Permission marketing
	Affiliates	Amazon	Brand extension
Social Marketing	Social networks	Facebook	Conversations; sharing
	Micro blogging sites	Twitter	News, quick updates
	Blogs/forums	Tumblr	Communities of interest; sharing
	Visual marketing	Pinterest/Instagram	Branding; sharing
	Video marketing	YouTube	Engage; inform
	Game marketing	Chipotle Scarecrow Game	Identification
Mobile Marketing	Mobile site	m.ford.com	Quick access; news; updates
	Apps	Ford Mustang Customizer app	Visual engagement
		My Ford	Visual engagement
Offline Marketing	Television	Apple/The Human Family: Shot on iPhone	Brand anchoring; inform
	Newspapers	American Airlines/The World's Greatest Flyers Fly American	Brand anchoring; inform
	Magazines	Apple Watch/Vogue Magazine	Brand anchoring; inform

Table 9.3 The digital marketing roadmap

Each of the main types of online marketing is discussed in this section and throughout thisunit in greater detail.Immediately, by examining Table 9.3, you can understand the managementcomplexity of building brands online. There are five major types of marketing, anda variety of different platforms that perform different functions. If you're a managerof a startup, or the website manager of an existing commercial website, you face anumber of strategic questions. Where should you focus first? Build a website, developa blog, or jump into developing a Facebook presence? If you have a successful websitethat already uses search engine marketing and display ads, where should you go next:develop a social network presence or use offline media? Does your firm have theresources to maintain a social media marketing campaign?

A second strategic management issue involves the integration of all these differentmarketing platforms into a single coherent branding message. Often, there aredifferent groups with different skill sets involved in website design, search engine anddisplay marketing, social media

marketing, and offline marketing. Getting all thesedifferent specialties to work together and coordinate their campaigns can be verydifficult. The danger is that a firm ends up with different teams managing each of thefour platforms rather than a single team managing the digital online presence, or forthat matter, marketing for the entire firm including retail outlets.

A third strategic management question involves resource allocation. There areactually two problems here. Each of the different major types of marketing, and eachof the different platforms, has different metrics to measure its effectiveness. In somecases, for new social marketing platforms, there is no commonly accepted metric,and few that have withstood critical scrutiny or have a deep experience base providing empirical data. For instance, in Facebook marketing, an important metric is howmany Likes your Facebook page produces. The connection between Likes and salesis still being explored. In search engine marketing, effectiveness is measured by howmany clicks your ads are receiving; in display advertising, by how many impressionsof your ads are served. Second, each of these platforms has different costs for Likes,impressions, and clicks. In order to choose where your marketing resources shouldbe deployed, you will have to link each of these activities to sales revenue. You willneed to determine how much clicks, Likes, and impressions are worth.

THE WEBSITE AS A MARKETING PLATFORM: ESTABLISHING THECUSTOMER RELATIONSHIP

A firm's website is a major tool for establishing the initial relationship with the customer.The website performs four important functions: establishing the brand identityand consumer expectations, informing and educating the consumer, shaping the customerexperience, and anchoring the brand in an ocean of marketing messages comingfrom different sources. The website is the one place the consumer can turn to find thecomplete story. This is not true of apps, e-mail, or search engine ads.

The first function of a website is to establish the brand's identity and to act as ananchor for the firm's other web marketing activities, thereby driving sales revenue.This involves identifying for the consumer the differentiating features of the productor service in terms of quality, price, product support, and reliability. Identifying thedifferentiating features of the product on the website's home page is intended to createexpectations in the user of what it will be like to

consume the product. For instance,Snapple's website creates the expectation that the product is a delicious, refreshingdrink made from high quality, natural ingredients. Ford's website focuses on automobiletechnology and high miles per gallon. The expectation created by Ford's websiteis that if you buy a Ford, you'll be experiencing the latest automotive technology andthe highest mileage. At the location-based social network website for Foursquare, thefocus is on meeting friends, discovering local places, and saving money with couponsand rewards.

Websites also function to anchor the brand online, acting as a central point whereall the branding messages that emanate from the firm's multiple digital presences,such as Facebook, Twitter, mobile apps, or e-mail, come together at a single onlinelocation. Aside from branding, websites also perform the typical functions of anycommercial establishment by informing customers of the company's products andservices. Websites, with their online catalogs and associated shopping carts, are importantelements of the online customer experience.

Customer experience refers to thetotality of experiences that a customer has with a firm, including the search, informing,purchase, consumption, and after-sales support for the product. The concept "customerexperience" is broader than the traditional concept of "customer satisfaction" in thata much broader range of impacts is considered, including the customer's cognitive,affective, emotional, social, and physical relationship to the firm and its products. Thetotality of customer experiences will generally involve multiple retail channels. Thismeans that, in the customer's mind, the website, mobile site and apps, Facebook page,Twitter feed, physical store, and television advertisements are all connected as partof his or her experience with the company.

TRADITIONAL ONLINE MARKETING AND ADVERTISING TOOLS

Below we describe the basic marketing and advertising tools for attracting e-commerceconsumers: search engine marketing, display ad marketing (including banner ads, richmedia ads, video ads, and sponsorships), e-mail and permission marketing, affiliatemarketing, viral marketing, and lead generation marketing.Companies spent an estimated €513 billion on advertising worldwide in 2016 andan estimated €182 billion of that amount on **online advertising**, which includesdisplay (banners, video, and rich media), search, mobile

messaging, sponsorships,classifieds, lead generation, and e-mail, on desktop and laptop computers as well as mobile devices.

In the last five years, advertisers have aggressively increased online spending andcut outlays on traditional channels. By 2018, the amount spent on online advertisingis expected to exceed the amount spent on television advertising.In 2016, the highest amount of spending is for paid search, followed by banner ads, but the fastest growing online ad formats arerich media and video ads.Spending on U.S. online advertising among different industries is somewhatskewed. Retail accounts for the highest percentage (22%), followed by financial services(13%), automotive (13%), telecommunications (9%), leisure travel (9%), consumerelectronics and computers (7%), consumer packaged goods (6%),pharmaceuticals and healthcare (5%), media (5%), and entertainment (4%). Online advertising has bothadvantages and disadvantages when compared to advertising in traditional media,such as television, radio, and print (magazines and newspapers). One big advantagefor online advertising is that the Internet is where the audience has moved, especiallythe very desirable 18–34 age group. A second big advantage for online advertising isthe ability to target ads to individuals and small groups and to track performance ofadvertisements in almost real time.

Ad targeting, the sending of market messages tospecific subgroups in the population in an effort to increase the likelihood of a purchase,is as old as advertising itself, but prior to the Internet, it could only be donewith much less precision, certainly not down to the level of individuals. Ad targetingis also the foundation of price discrimination: the ability to charge different types of consumers different prices for the same product or service. With online advertising,it's theoretically possible to charge every customer a different price.

Theoretically, online advertising can personalize every ad message to preciselyfit the needs, interests, and values of each consumer. In practice, as we all knowfrom spam and constant exposure to ads that are of little interest, the reality is verydifferent. Online advertisements also provide greater opportunities for interactivity—two-way communication between advertisers and potential customers. The primarydisadvantages of online advertising are concerns about its cost versus its benefits,how to adequately measure its results, and the supply of good venues to

display ads.For instance, the owners of websites who sell advertising space ("publishers") do nothave agreed-upon standards or routine audits to verify their claimed numbers as do traditional media outlets.

Search Engine Marketing and Advertising

In 2016, companies spent an estimated €83 billion worldwide on search engine marketingand advertising, about 46% of all spending for digital marketing. Briefly, this is where the eyeballs are (at least for a few moments) and this iswhere advertising can be very effective by responding with ads that match the interestsand intentions of the user. The click-through rate for search engine advertising isgenerally 1%–4% (with an average of around 2%) and has been fairly steady over theyears. The top search engine throughout Western Europe is Google, with a market share of over 90%. **Search engine marketing (SEM)** refers to the use of searchengines to build and sustain brands. **Search engine advertising** refers to the use ofsearch engines to support direct sales to online consumers.

Search engines are often thought of as mostly direct sales channels focusedon making sales in response to advertisements. While this is a major use of searchengines, they are also used more subtly to strengthen brand awareness, drive traffic toother websites or blogs to support customer engagement, to gain deeper insight intocustomers' perceptions of the brand, to support other related advertising (for instance,sending consumers to local dealer sites), and to support the brand indirectly. Searchengines can also provide marketers insight into customer search patterns, opinionscustomers hold about their products, top trending search keywords, and what theircompetitors are using as keywords and the customer response. For example, PepsiCo,home of mega brands like Pepsi and Doritos, makes no sales on the Web, but hasseveral branding websites aimed at consumers, investors, and shareholders. The focusis on building, sustaining, and updating the Pepsi collection of branded consumergoods. A search on Pepsi will generate numerous search results that link to Pepsimarketing materials.

Types of Search Engine Advertising Search engine sites originally performed unbiasedsearches of the Web's huge collection of web pages and derived most of their revenuefrom banner advertisements. This form of search engine results is often called **organicsearch** because the

inclusion and ranking of websites depends on a more or less“unbiased” application of a set of rules (an algorithm) imposed by the search engine.

Since 1998, search engine sites slowly transformed themselves into digital yellow pages, where firms pay for inclusion in the search engine index, pay for keywords toshow up in search results, or pay for keywords to show up in other vendors’ ads.Most search engines offer **paid inclusion** programs, which, for a fee, guaranteea website’s inclusion in its list of search results, more frequent visits by its web crawler,and suggestions for improving the results of organic searching. Search engines claimthat these payments—costing some merchants hundreds of thousands a year—do notinfluence the organic ranking of a website in search results, just inclusion in theresults. However, it is the case that page inclusion ads get more hits, and the rank ofthe page appreciates, causing the organic search algorithm to rank it higher in theorganic results.

Google claims that it does not permit firms to pay for their rank in the organicresults, although it does allocate two to three sponsored links at the very top of their pages, albeit labeling them as “Sponsored Links.” Merchants who refuse to pay forinclusion or for keywords typically fall far down on the list of results, and off the firstpage of results, which is akin to commercial death.

Pay-per-click (PPC) search ads are the primary type of search engine advertising.In **keyword advertising**, merchants purchase keywords through a bidding processat search sites, and whenever a consumer searches for that word, their advertisementshows up somewhere on the page, usually as a small text-based advertisement on theright, but also as a listing on the very top of the page. The more merchants pay, thehigher the rank and greater the visibility of their ads on the page. Generally, the searchengines do not exercise editorial judgment about quality or content of the ads althoughthey do monitor the use of language. In addition, some search engines rank the adsin terms of their popularity rather than merely the money paid by the advertiser sothat the rank of the ad depends on both the amount paid and the number of clicks perunit time. Google’s keyword advertising program is called AdWords.

Network keyword advertising (**context advertising**), introduced by Google asits AdSense product in 2002, differs from the ordinary keyword advertising describedpreviously. Publishers (websites that want to show ads) join these networks and allowthe search engine to place “relevant” ads on their sites. The ads are paid for by advertiserswho want their messages to

appear across the Web. Google-like text messages arethe most common. The revenue from the resulting clicks is split between the searchengine and the site publisher, although the publisher gets much more than half insome cases.

Search engine advertising is nearly an ideal targeted marketing technique: atprecisely the moment that a consumer is looking for a product, an advertisement forthat product is presented. Consumers benefit from search engine advertising becauseads for merchants appear only when consumers are looking for a specific product.

Thus, search engine advertising saves consumers cognitive energy and reduces searchcosts (including the cost of transportation needed to do physical searches for products).Because search engine marketing can be very effective, companies optimize theirwebsites for search engine recognition. The better optimized the page is, the highera ranking it will achieve in search engine result listings, and the more likely it willappear on the top of the page in search engine results.

Search engine optimization

(SEO) is the process of improving the ranking of web pages with search engines byaltering the content and design of the web pages and site. By carefully selecting keywords used on the web pages, updating content frequently, and designing the site soit can be easily read by search engine programs, marketers can improve the impactand return on investment in their web marketing programs. Google and other search engine firms make frequent changes to their searchalgorithms in order to improve the search results and user experience. Google, forinstance, reportedly makes over 600 search engine changes in a year. Most are smallunannounced tweaks. Recent major changes have included Panda, Penguin, Hummingbird,

Knowledge Graph, and an unnamed algorithm that has been nicknamed Mobile geddon. **Panda** was introduced in 2011 in an effort to weed out low quality sitesfrom search results. Those sites with thin content, duplicate content, content copiedfrom elsewhere on the Web, and content that did not attract high-quality hits fromother sources were systematically pushed down in the search results. Google introduced **Penguin** in 2012 in an effort to punish websites and their SEO marketing firmswho were manipulating links to their site in order to improve their rankings. TheGoogle search engine rewards sites that have links from many other sites. What some

marketers discovered is that Google could not tell the quality of these back links, andthey began to manufacture links by putting their clients onto list sites, creating multipleblogs to link to their clients' sites, and paying others to link to their clients' sites.

Penguin evaluates the quality of links to a site, and pushes down in the rankings thosesites that have poor-quality back links. Between 2012 and 2016, Google released fourmajor Penguin updates and in September 2016 that it had become part of the coreGoogle algorithm.

Display Ad Marketing

In 2016, companies spent around €83 billion worldwide on all forms of display admarketing, about 46% of all spending for digital marketing. More than 6 trillion displayads will be served on desktop and mobile devices in 2016. The top five display adcompanies in the United States are Facebook, Google, Twitter, Yahoo, and Verizon(AOL and Millennial Media), which together account for almost 60% of U.S. displayad revenue. The Interactive Advertising Bureau (IAB), an industry organization, hasestablished voluntary industry guidelines for display ads. Publishers are not requiredto use these guidelines, but many do. One objective of IAB is to give the consumera consistent experience across all websites. The various types of ads are designed tohelp advertisers break through the "noise" and clutter created by the high number ofdisplay ad impressions that a typical user is exposed to within a given day. Accordingto Google, the top performing ad formats are the large rectangle, the medium rectangle,the leaderboard, and the half-page (Google Inc., 2016). Display ads consist of fourdifferent kinds of ads: banner ads, rich media ads (animated ads), sponsorships, andvideo ads.

Banner Ads Banner ads are the oldest and most familiar form of display marketing.They are also the least effective and the lowest cost form of online marketing. Abanner ad displays a promotional message in a rectangular box on the screen of adesktop computer or mobile device.

A **banner ad** is similar to a traditional ad in aprinted publication but has some added advantages. When clicked, it brings potentialcustomers directly to the advertiser's website, and the site where the ad appears canobserve the user's behavior on the site. The ability to identify and track the

user isa key feature of online advertising. Banner ads often feature video and other animations.It's important to note that, although the terms banner ad and display ad areoften used interchangeably, banner ads are just one form of display ad. Despite theirlimited effectiveness, advertisers will still spend about $14 billion on banner ads in2016, about 42% of all spending on display ads, and 20% of total online adspending.

Rich Media Ads Ads that employ animation, sound, and interactivity, using Flash,HTML5, Java, and JavaScript are referred to as **rich media ads**. They are far moreeffective than simple banner ads. For instance, one research report that analysed 24,000 different rich media ads with more than 12 billion impressions served in NorthAmerica over a six-month period found that exposure to rich media ads boostedadvertiser site visits by nearly 300% compared to standard banner ads. Viewers ofrich media ads that included video were six times more likely to visit the advertiser's website, by either directly clicking on the ad, typing the advertiser's URL, or searching. Recent research by the IAB indicates that its Rising Star ad unitsthat can incorporate rich media elements deliver a 30% stronger brand lift than thetraditional IAB core display ads with just one full exposure, increasing to over 40%when a consumer interacts with the ad. Rising Star ads also topped traditional displayads in terms of ad recall and were considered less annoying.

9.3 INTERNET MARKETING TECHNOLOGIES

Internet marketing has many similarities to and differences from ordinary marketing.The objective of Internet marketing—as in all marketing—is to build customerrelationships so that the firm can achieve above-average returns (both by offeringsuperior products or services and by communicating the product's features to the consumer). But Internet marketing is also very different from ordinary marketingbecause the nature of the medium and its capabilities are so different from anythingthat has come before. In order to understand just how different Internet marketingcan be and in what ways, you first need to become familiar with some basic Internetmarketing technologies.

MARKETING AUTOMATION AND CUSTOMER RELATIONSHIP MANAGEMENT(CRM) SYSTEMS

Marketing automation systems are software tools that marketers use to track all thesteps in the lead generation part of the marketing process. The marketing processbegins with making the

potential customer aware of the firm and product, and recognizingthe need for the product. This is the beginning of a lead—someone who mightbuy. From there, consumers need to find you as they search for products; they willcompare your products with your competitors' offerings and at some point, choose to purchase. Software can help in each of these stages of the marketing process. Anumber of firms sell software packages that can visualize most of the online marketingactivities of a firm and then track the progression from exposure to display ads, findingyour firm on a search engine, directing follow-up e-mail and communications, andfinally a purchase. Once leads become customers, customer relationship managementsystems take over the maintenance of the relationship.

Customer relationship management systems are another important Internet marketingtechnology. A **customer relationship management (CRM) system** is arepository of customer information that records all of the contacts that a customer haswith a firm (including websites) and generates a customer profile available to everyonein the firm with a need to "know the customer." CRM systems also supply the analyticalsoftware required to analyze and use customer information. Customers come tofirms not just over the Web but also through telephone call centers, customer servicerepresentatives, sales representatives, automated voice response systems, ATMs andkiosks, in-store point-of-sale terminals, and mobile devices (m-commerce).

Collectively, these are referred to as "**customer touchpoints**." In the past, firmsgenerally did not maintain a single repository of customer information, but insteadwere organized along product lines, with each product line maintaining a customerlist (and often not sharing it with others in the same firm).

In general, firms did not know who their customers were, how profitable theywere, or how they responded to marketing campaigns. For instance, a bank customermight see a television advertisement for a low-cost auto loan that included an 800-number to call. However, if the customer came to the bank's website instead, ratherthan calling the 800-number, marketers would have no idea how effective the televisioncampaign was because this web customer contact data was not related to the800-number call center data. **Figure 9.10** illustrates how a CRM system integratescustomer contact data into a single system.

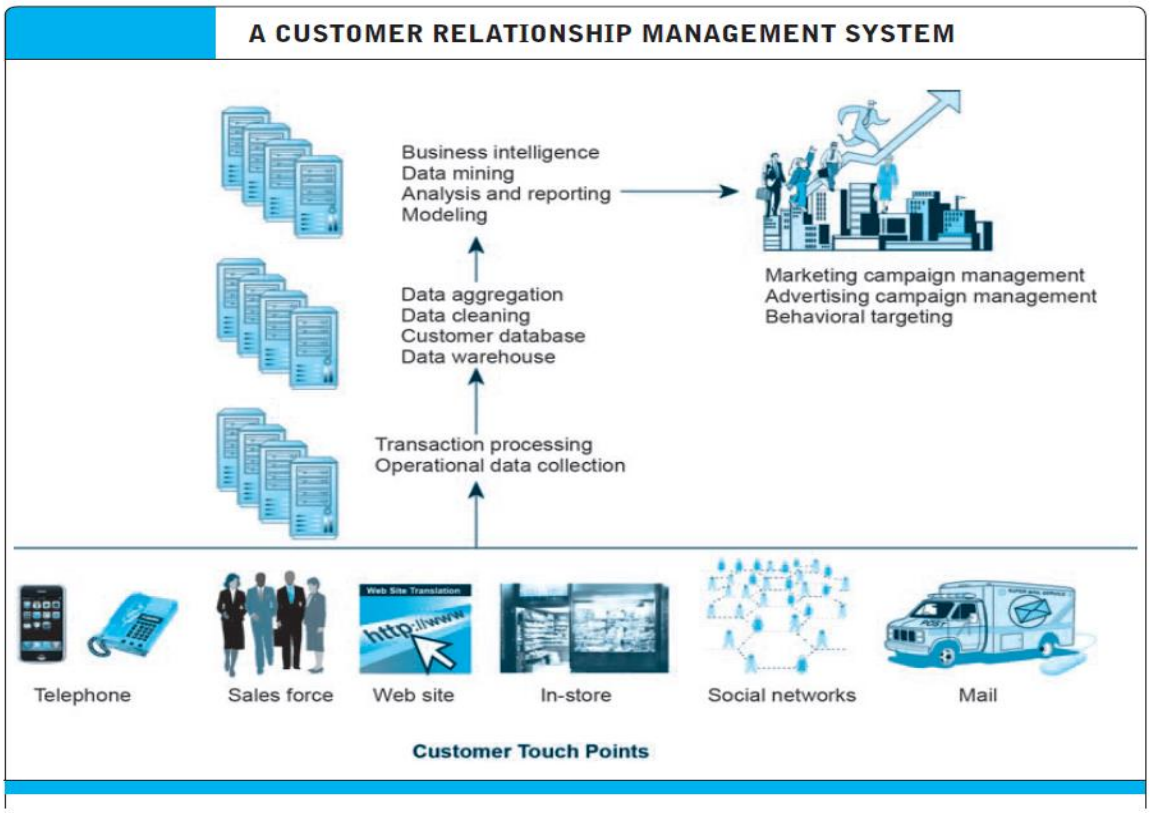

Fig. 9.10 A customer relationship management system

CRMs are part of the evolution of firms toward a customer-centric and marketingsegment–based business, and away from a product-line–centered business. CRMsare essentially a database technology with extraordinary capabilities for addressingthe needs of each customer and differentiating the product or service on the basis oftreating each customer as a unique person. Customer profiles can contain the followinginformation:

- A map of the customer's relationship with the institution
- Product and usage summary data
- Demographic and psychographic data
- Profitability measures
- Contact history summarizing the customer's contacts with the institution acrossmost delivery channels
- Marketing and sales information containing programs received by the customerand the customer's responses
- E-mail campaign responses

- Website visits
- Mobile app downloads

With these profiles, CRMs can be used to sell additional products and services,develop new products, increase product utilization, reduce marketing costs, identifyand retain profitable customers, optimize service delivery costs, retain high lifetimevalue customers, enable personal communications, improve customer loyalty, andincrease product profitability. The goal is what is known as a "360-degree" view thatenables a company to know what its customers buy, how they browse, what kinds ofcommunications and offers will engage them, and more. Leading CRM vendors include Oracle, SAP, Microsoft, Salesforce, and Suga rCRM, many of which offer cloud-basedversions of their CRM products. One issue facing cloud CRM providers and globalcompanies that use those products is European Union data regulations that will requirethem to reassess how they use CRM data in order to avoid violating those regulations. All the major vendors offer cloud-based SaaS CRM applications.

9.4 CHECK YOUR PROGRESS

6. Identify the main technologies that support online marketing.
7. Define consumer behaviour.
8. What is keyword advertising?
9. What is programmatic advertising?
10. What is a spam?

Answers to Check Your Progress

6. Web transaction logs, Tracking files, Databases, data warehouses, data mining, and profiling, CRM systems
7. a social science discipline that attempts to model and understand the behavior of humans in a marketplace
8. merchants purchase keywords through a bidding process at search sites, and whenever a consumer searches for that word, their advertisement shows up somewhere on the page

4.automated, auction-based method for matching demand and supply foronline display ads

5.unsolicited commercial e-mail

9.5SUMMARY

The subject of online marketing, branding, and market communications is very broad and deep. We have created two chapters to cover the material. In this unit, we examined consumer behavior on the Web, the major types of online marketing and branding, and the technologies that support advances in online marketing. We focused on understanding the costs and benefits of online marketing communications.

9.6 KEYWORDS

- **consumer behaviour -** a social science discipline that attempts to model and understand the behavior of humans in a marketplace.
- **clickstream behaviour -** the transaction log that consumers establish as they move about the Web
- **customer experience -** the totality of experiences that a customer has with a firm, including the search,informing, purchase, consumption, and aftersales support for its products, services, and various retail channels
- **online advertising -** a paid message on a website, online service, or other interactive medium
- **ad targeting -** the sending of market messages to specific subgroups in the population

9.7 SELF ASSESSMENT QUESTIONS

8. What are the primary differences between online and offline consumer behavior?
9. What are marketing analytics and how do they help e-commerce firms better understand consumer behavior at the various stages of the online purchasing process?
10. What are three strategic questions that online marketing managers need to address?
11. What is retargeting, and why has it become a popular marketing technique?

12. How are blogs being used for advertising and marketing?

9.8 References

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4. AdNabu,(2021), https://www.adnabu.com/ecommerce-marketing-trends

UNIT -10: SOCIAL, MOBILE AND LOCAL MARKETING

Structure

10.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Idetify the difference between traditional online marketing and the new social-mobile- local marketing platforms and the relationships between social, mobile, and local marketing.
- ✓ Examine the social marketing process from fan acquisition to sales and the marketing capabilities of social marketing platforms such as Facebook, Twitter, and Pinterest.
- ✓ Identify the key elements of a mobile marketing campaign.
- ✓ Examine the capabilities of location-based local marketing.

10.1 INTRODUCTION

Social, mobile, and local marketing have transformed the online marketing landscape.Before 2007, Facebook was a fledgling company limited to college students. Applehad not yet announced the iPhone. Online marketing consisted largely of creating acorporate website, buying display ads on Yahoo, purchasing AdWords on Google, andsending e-mail. The workhorse of online marketing was the display ad that flashedbrand messages to millions of users who were not expected to respond immediately,ask questions, or make observations. The primary measure of success was how many"eyeballs" (unique visitors) a website produced, and how many "impressions" a marketingcampaign generated. An impression was one ad shown to one person. Both of these measures were carryovers from the world of television, which measures marketing interms of audience size and ad views.

FROM EYEBALLS TO CONVERSATIONS

After 2007, everything began to change, with the rapid growth of Facebook and othersocial network sites, the explosive growth of smartphones beginning with AppleiPhone in 2007, and the growing interest in local marketing. What's different about thenew world of social-mobile-local marketing and advertising are the related conceptsof "conversations" and "engagement." Marketing today is based on businesses marketing themselves as partners in multiple online

conversations with their customers,potential customers, and even critics. Your brand is being talked about on the Weband social media (that's the conversation part).

Today, marketing your firm andbrands requires you to locate, identify, and participate in these conversations. Socialmarketing means all things social: listening, discussing, interacting, empathizing, andengaging. Rather than bombarding your audience with fancier, louder ads, insteadhave a conversation with them and engage them in your brand. The emphasis in online marketing has shifted from a focus on eyeballs to a focus on participating incustomer-oriented conversations. In this sense, social marketing and advertising isnot simply a "new ad channel," but a collection of technology-based tools for communicatingwith shoppers.

In the past, businesses could tightly control their brand messaging and lead consumersdown a funnel of cues that ended in a purchase. That is not true of socialmarketing. Consumer purchase decisions are increasingly driven by the conversations,choices, tastes, and opinions of the consumer's social network. Social marketing is allabout businesses participating in and shaping this social process.

FROM THE DESKTOP TO THE SMARTPHONE AND TABLET

In 2015, for the first time, spending on mobile marketing exceeded that spent ondesktop/laptops. **Figure 10.1** illustrates the rapidly changing trajectory of ad spendingbetween 2014 and 2020. In 2014, marketers spent 71% of their online ad spending ondesktops and only 29% on mobile. By 2019, that percentage is expected to totally flip,with 71% of ad spending devoted to mobile and only 29% to desktop/laptops. Themarketing dollars are following customers and shoppers from the desktop computerto mobile devices. Today, social, mobile, and local marketing are the fastest growing forms of online marketing.

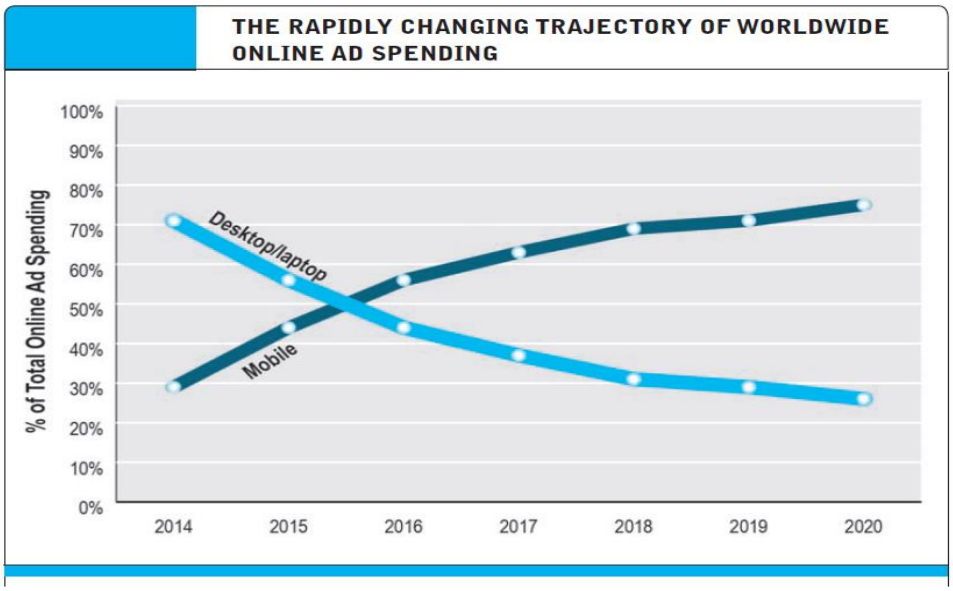

Fig 10.1 The rapidly changing trajectory of worldwide online ad spending

In 2016, spending on mobile marketing inthe United States was almost triple the amount spent on social marketing. By 2018, itis estimated that U.S. mobile marketing spending will account for almost $70 billionannually, while social marketing will be about $24 billion. However, this figure underestimatesthe total social marketing spending because of the high percentage of visitsto social networks that originate from a mobile device. For instance, Twitter reportsthat over 80% of their monthly active users access Twitter from a mobile device; over 55% of Facebook's active user base are mobile-only members Twitter, A substantial part of the mobile marketing spending should also becounted as "social" marketing. Nevertheless, the figure indicates the extraordinary

impact that mobile devices are having on marketing expenditures. Local online marketingin the United States was almost 25% larger than mobile in 2015, but by 2016,mobile had surpassed local online marketing. As with social and mobile, there issignificant overlap between local and mobile and social marketing, with much of localmarketing being also either social or mobile, or both.

10.2 SOCIAL MARKETING

Social marketing differs markedly from traditional online marketing. The objectivesof traditional online marketing are to put your business's message in front of as manyvisitors as possible and hopefully encourage them to come to your website to buyproducts and services, or to find out

more information. The more “impressions” (adviews) you get, and the more unique visitors to your site, the better. Traditional online

marketing never expected to listen to customers, much less have a conversation withthem, any more than TV advertisers expected to hear from viewers.

In social marketing, the objective is to encourage your potential customers tobecome fans of your company’s products and services, and engage with your businessby entering into a conversation with it. Your further objective is to encourage yourbusiness’s fans to share their enthusiasm with their friends, and in so doing create acommunity of fans online. Ultimately, the point is to strengthen the brand and drivesales, and to do this by increasing your “share of online conversation.” There is some reason to believe that social marketing is more cost effective than traditional marketingalthough this is still being explored.

SOCIAL MARKETING PLAYERS

There are hundreds of social network sites worldwide, but the most popular sites(Facebook, Instagram, Twitter, LinkedIn, Pinterest, Snapchat, and Tumblr) accountfor over 90% of all visits. (See Chapter 10 for a full discussion of social networks.)

While the number of monthly unique visitors is a good measure of market reach,it is not helpful in understanding engagement—the amount and intensity of userinvolvement in a site. One measure of engagement is the amount of time users spendon a site. **Figure 10.4** illustrates engagement at the top social network sites.

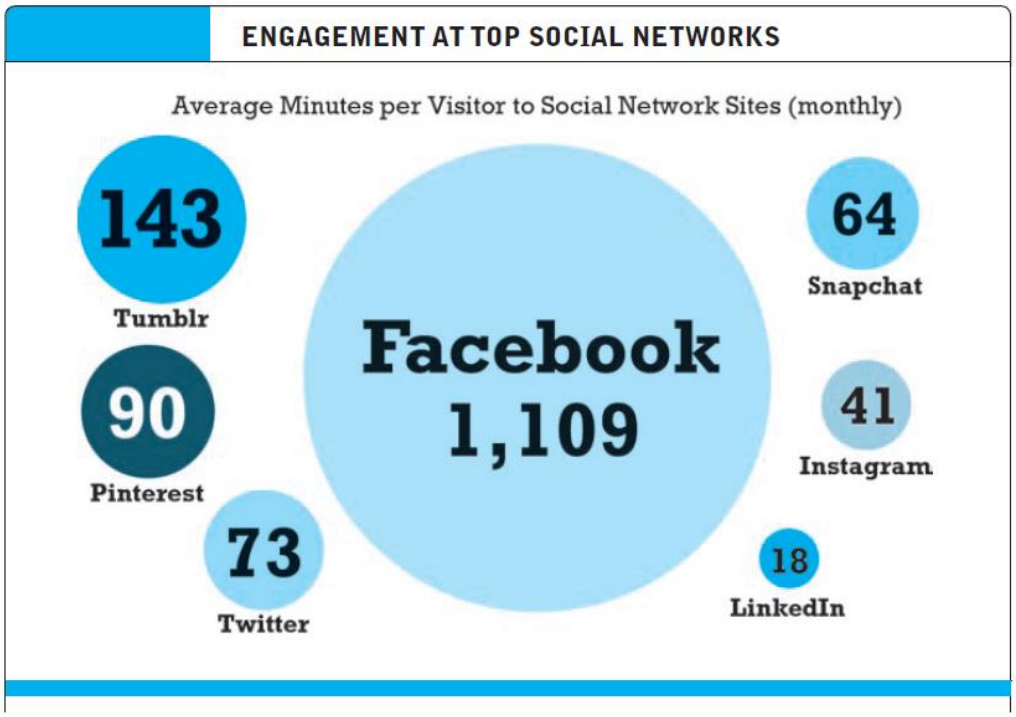

Fig 10.4 User engagement at top social networks

On measures of engagement, Facebook once again dominates, accounting for 85%of the total monthly visitor minutes, a whopping 230 billion minutes per month in theUnited States. The average U.S. Facebook user spent more than 18 hours a month onFacebook. Tumblr takes second place, followed by Pinterest and Twitter.

For a manager of a social marketing campaign, these findings suggest that in termsof reach and engagement, the place to start a social campaign is Facebook. Yet visitorsto the other leading social sites collectively account for an additional 15% of the socialmarket space, and therefore, a social marketing campaign also has to include them atsome point. It helps that social network users use multiple social sites. Facebook users are likely to be users at Twitter, Pinterest, LinkedIn, Instagram, and Snapchat. Inaddition, marketers need to be aware of what has come to be known as dark social.

Dark social refers to those forms of social sharing that occur off the major socialnetworks, through alternative communication tools such as interpersonalconversations, group meetings, and friendships, not to mention e-mail, instant messages,texts, and mobile messaging apps.

While online social network users spend over30 hours a month on average on all networks combined, there are 720 total hours ina month. Therefore, about 4% of all social life in a month involves online social networks, while 96% does not.

10.3 LOCAL AND LOCATION BASED MOBILE MARKETING

Location-based marketing is one of the fastest growing segments of the digital marketinguniverse. **Location-based marketing** targets marketing messages to users basedon their location. Generally, location-based marketing involves marketing of locationbasedservices. **Location-based services** involve providing services to users based ontheir location. Examples of location-based services are: personal navigation (How do
I get there?), point-of-interest (What's that?), reviews (What's the best restaurant inthe neighborhood?), friend-finder (Where are you? Where's the crowd?), and familytrackerservices (Where is my child?). There is a connection, of course: the morepeople use their mobile devices to search for and obtain local services, the moreopportunities there are for marketers to target consumers with messages at just theright moment, at just the right location, and in just the right way—not too pushy andannoying, but in a way to improve the consumer experience at the moment of local shopping and buying. This is the ideal in any event. Location-based marketing cantake place on a desktop as well because browsers and marketers know your approximatelocation. But in this section we focus primarily on location-based mobile marketing,which is where the greatest growth and opportunities lie.

Experience and market research suggest that consumers want local ads, offers,information, and content. Consumers have a high likelihood of acting on local ads andpurchasing the products and services offered. Because it has evolved so rapidly in thelast five years, experience and research with respect to location-based marketing is awork in progress with many different platforms, providers, and techniques. Measuresof effectiveness and returns on investment are being developed.

THE GROWTH OF LOCAL MARKETING

Prior to the release of Google Maps in 2005, nearly all local advertising was nondigitaland provided by local newspapers, radio and television stations, local yellow pages, andbillboards.

Of course, some was digital, involving the websites of local merchants. In2016, total media ad spending in the United States is $196 billion, and approximately$146 billion of this is local media spending by both national and local brands. Anestimated 40% of this local advertising (about $58 billion) involves truly local firms like restaurants, grocery stores, theaters, and shoe stores marketing to their local audience.

The remaining 60% of local media marketing involves large national firms marketingto local audiences, such as an ad for Coca-Cola in a local newspaper or websites createdfor local auto dealers by national firms. Of the $146 billion of local media spending,about 31% ($45 billion) will be spent on online marketing, and this amount is expectedto grow to about $72 billion by 2020.

After the introduction of Google Maps in 2005 and smartphones in 2007, onlinelocal marketing began to rapidly expand. Google Maps on desktop computers enabledthe targeting of ads to users based on a general sense of their IP address and enabledmerchants to display ads to users based on the general location of potential customers,usually within a several square-mile radius. IP addresses can be used to identify a city, and a neighborhood within the city, but not a zip code, street, or building. Google Mapshelped users answer the question "Where can I find an Italian restaurant" in a city orsection of a city from their desktop. The arrival of smartphones in 2007, and Google'smobile maps app, took this one step further. The GPS receivers in second-generationsmartphones introduced in 2008 (Apple's 3G iPhone), along with other techniques,meant that a user's location (latitude and longitude) could be fairly well known by cell phone manufacturers, marketers, service providers, and carriers like AT&T andVerizon. These developments opened an entirely new growth path for local onlineadvertising that heretofore had been confined to the desktop. In this new world, alocal food market could shout out to mobile phone users as they walked by the store,offering discounts to responders, and users in turn could search for specific retail storesnearby, even checking their inventory before walking into the store.

THE GROWTH OF LOCATION-BASED (LOCAL) MOBILE MARKETING

Location-based (local) mobile marketing is currently a small part of the online marketingenvironment, but it is expected to triple over the next 5 years. In 2016, total U.S. online marketingwill be about $72 billion and local online marketing is expected to be a healthy andsurprisingly large $45 billion. The part of local online that is location-based mobile is

expected to generate an estimated $12.8 billion.After the introduction of Google Maps in 2005 and smartphones in 2007, onlinelocal marketing began to rapidly expand. Google Maps on desktop computers enabled

the targeting of ads to users based on a general sense of their IP address and enabledmerchants to display ads to users based on the general location of potential customers,usually within a several square-mile radius. IP addresses can be used to identify a city, and a neighborhood within the city, but not a zip code, street, or building. Google Mapshelped users answer the question "Where can I find an Italian restaurant" in a city or

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advertising that heretofore had been confined to the desktop. In this new world, alocal food market could shout out to mobile phone users as they walked by the store,offering discounts to responders, and users in turn could search for specific retail storesnearby, even checking their inventory before walking into the store.

10.4 LOCATION BASED MARKETING PLATFORMS

The key players in location-based mobile marketing are the same giants who dominatethe mobile marketing environment described in a previous section, namely, Google,Facebook, Apple, Twitter, YP (formerly Yellow Pages), Pandora, and Millennial Media.

Google is clearly the leading location-based marketer largely because of its widelyused Google Maps app on smartphones. When a consumer searches for a location onGoogle Maps, it is an ideal marketing moment to pop an ad before the consumer'seyes. Google Places is a simple but effective service that provides short businessprofiles when users search for a specific business. Google's Android operating system has location functionality built into the system, and Google apps, like Google Maps,continuously update the user's location. Google purchased a mobile advertising firmcalled AdMob in 2009 and claims to be the world's largest mobile advertising

firm forboth Android and Apple's iOS operating systems. App developers use AdMob to providetheir apps with consumer and user location information. Google also sells locationinformation to independent marketing firms. Marketing firms use AdMob to develop full-screen rich media ads. Google's main revenue stream comes from its AdWordsservice, where marketers bid for keywords on Google's search engine. AdWords usedto be the same whether displayed on a desktop computer or a mobile device. Googlehas upgraded its AdWords service to optimize ads for user contexts and devices, andto provide management of campaigns across all mobile and desktop devices. The new service is called Enhanced AdWords. For instance, if a customer searches for "pizza" ona desktop computer from work at 1 PM, he or she would be shown restaurants nearbyand a quick order form. If the customer searched for "pizza" at 8 PM on a smartphonewithin a half-mile of a pizza restaurant, he or she might be shown a click-to-call phonenumber and directions to the restaurant. Pizza restaurants pay Google for the chance to show up in these searches.

Google and Apple have advantages in the location-based market: they both havedeveloped extensive maps of Wi-Fi networks throughout the world, allowing them todevelop much more precise location information than competitors. Apple's mobile platform iAd provides location data to iOS app developers andmobile marketing firms. Like AdMob, when users click on an iAd ad, a full-screen adappears within the app they are using. The ad can be targeted to the user's location.

LOCATION-BASED MOBILE MARKETING: THE TECHNOLOGIES

Location-based services and marketing require marketers and local service providersto have a fairly precise idea of where consumer mobile devices are located. There aretwo general types of location-based marketing techniques: geo-aware and proximitymarketing. **Geo-aware** techniques identify the location of a user's device and thentarget marketing to the device, recommending actions within reach (which, in itself,requires the marketer to know where relevant things like stores are located). For instance, a marketer may target smartphones within several square city blocks to alertthem to available offers from participating merchants. **Proximity marketing** techniquesidentify a perimeter around a physical location, and then target ads to userswithin that perimeter, recommending actions possible within the fenced-in area. Theperimeter can be from hundreds of feet (in urban areas) to several miles (in suburban

locations). For instance, if users walk into the geo-fenced perimeter of a store, restaurant,or retail shop, they will receive ads from these businesses. Both of these techniquesutilize the same locating technologies.

Ad networks, local-mobile marketing firms, providers of devices and services likeGoogle and Apple, as well as phone companies use several methods for locating mobiledevices, none of which are perfect, and all of which have varying degrees of accuracy.

Table 10.15 describes the major locating technologies used to enable location-basedservices and marketing.

MAJOR LOCATING TECHNOLOGIES

TECHNOLOGY	DESCRIPTION
GPS	The user's device downloads GPS data from a GPS satellite. First introduced with the Apple 3G iPhone in 2008. Today, cellphones are required to broadcast their GPS location for emergency assistance purposes.
Wi-Fi	Estimates user's location within a radius of a known Wi-Fi access point.
Bluetooth low energy (BLE)	Used by Apple in iBeacon. Uses less battery power than traditional Bluetooth or GPS and more accurate than targeting through Wi-Fi triangulation.
Geo-search	Uses location information based on the user's search queries.
Cell tower	AT&T, Verizon, and other carriers are in constant contact with their devices, which allows approximation of location by triangulation and refinement of the unit's GPS location. Wireless carriers use a cell phone's MAC address to identify the phone and the location.
Sign in/registration	Estimates users' location when they self-identify their location using sign-in services or social network posts.

Table 10.15 Major locating technologies

GPS (Global Positioning System) location is the most accurate positioning methodin theory. In practice, the signal can be weak in urban areas, nonexistent inside buildings, signals can be deflected, and it can take a long time (30–60 seconds) forthe device to acquire the signal and calculate a position. When a clear signal isobtained, GPS can be accurate to within 3–10 meters

under ideal conditions, but morefrequently, a cell phone's GPS is accurate only to within 50 meters—half a footballfield. Also, users have to activate the feature, and many do not for privacy reasons.

Assisted GPS (A-GPS) supplements GPS information with other information from thephone network to speed up acquisition. Nearly all smartphones use A-GPS. In Apple'siOS, users can decide whether to turn Location Services on or off. When turned on,the iOS uses GPS, cellular, and Wi-Fi networks to determine the user's approximatelocation to within 10 meters (30 feet) although in many situations accuracy can bemuch higher, around 15 feet. The user's iPhone continuously reports its position andreports to Apple servers.

Cell tower location is used by wireless telephone carriers to track the locationof their devices, which is required to complete phone calls as devices pass from therange of one tower into the range of another. Cell tower location is also the basis ofthe wireless emergency response system in the United States. The FCC's wirelessEnhanced 9-1-1 (E9-1-1) rules require wireless carriers to track cellphone locationswhether or not the user has turned on location services in order to assist emergency responders in locating users who make 911 calls.

Wi-Fi location is used in conjunction with GPS signals to more accurately locatea user based on the known location of Wi-Fi transmitters, which are fairly ubiquitousin urban and suburban locations. Apple, Google, and other mobile service providershave developed global databases of wireless access points simply by driving carsaround urban areas in much of the world. Google uses Street View cars to build aglobal database of wireless access points and their geographic location. Androidapplications can use this database to determine the approximate location of individuals based on the Wi-Fi networks detected by their mobile devices. All Wi-Fi devicescontinuously monitor the presence of local Wi-Fi networks, and mobile devicesreport back this data to Apple and Microsoft, along with other device manufacturers,who use similar methods. The goal of these technologies is to provide consumersand marketers with "micro-location data" accurate to within a few feet to supporttruly real-time, accurate, local marketing at the personal level. For instance, if youare looking at a rack of dress shirts in a retail store, an accurate positioning systemcould detect this, and direct you to appropriate accessories like socks and ties on surrounding shelves.

10.5 CHECK YOUR PROGRESS

1. What is geo-aware marketing?
2. What is proximity marketing?
3. Define dark social
4. What is location-based marketing

Answers to Check Your Progress

1. techniques that identify the location of a user's device and then target marketing to the device
2. techniques that identify a perimeter around a physical location, and then target ads to users within that perimeter, recommending actions possible within the fenced-in area
3. dark social - those forms of social sharing that occur off the major social networks, through alternative communication tools such as e-mail, instant messages, texts, and mobile messaging apps
4. targets marketing messages to users based on their location

10.6 SUMMARY

Social, mobile, and local marketing have transformed the online marketing landscape. What's different about thenew world of social-mobile-local marketing and advertising are the related conceptsof "conversations" and "engagement." Marketing today is based on businesses Marketingthemselves as partners in multiple online conversations with their customers,potential customers, and even critics.Social marketing means all things social: listening, discussing, interacting, empathizing, and engaging. Rather than bombarding your audience with fancier, louder ads, instead have a conversation with them and engage them in your brand. The emphasis in online marketing has shifted from a focus on eyeballs to a focus on participating in customer-oriented conversations. In this sense, social marketing and advertising is not simply a "new ad channel," but a collection of technology-based tools for communicating with shoppers. As with social and mobile, there is significant overlap between local and mobile and social marketing, with much of local marketing being also either social or mobile, or both.

10.7 KEYWORDS

- **dark social -** those forms of social sharing that occur off the major social networks, through alternative communication tools such as e-mail, instant messages, texts, and mobile messaging apps
- **fan acquisition -** attracting people to your marketing messages
- **engagement -** encouraging visitors to interact with your content and brand
- **location-based marketing -** targets marketing messages to users based on their location
- **location-based services -** involve providing services to users based on their location
- **geo-aware -** techniques that identify the location of a user's device and then target marketing to the device
- **proximity marketing -** techniques that identify a perimeter around a physical location, and then target ads to users within that perimeter, recommending actions possible within the fenced-in area

10.8 SELF ASSESSMENT QUESTIONS

1. How and why has online marketing changed since 2007?
2. What is meant by the term *conversation* as it applies to online marketing and how do businesses engage in a conversation?
3. From a business perspective, what are the disadvantages or challenges in social marketing?
4. What is social density and why is it important to social marketing?
5. What is the effect of the growing "multi-screen environment" on e-commerce and marketing?

10.9 REFERENCES

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UNIT -11: ETHICS, LAWS AND E-COMMERCE

Structure

11.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Explain key concepts and background of Internet Technology
- ✓ Discuss basic concepts related to privacy and information rights, the practices of e-commerce companies that threaten privacy, and the different methods that can be used to protect online privacy.
- ✓ Identify the various forms of intellectual property and the challenges involved in protecting it.
- ✓ Examine how the Internet is governed and why taxation of e-commerce raises governance and jurisdiction issues.
- ✓ Identify major public safety and welfare issues raised by e-commerce.

11.1 ETHICAL, SOCIAL, AND POLITICAL ISSUES IN ECOMMERCE

The Internet and its use in e-commerce have raised pervasive ethical, social, and politicalissues on a scale unprecedented for computer technology. Entire sections of dailynewspapers and weekly magazines are devoted to the social impact of the Internet. Butwhy is this so? Why is the Internet at the root of so many contemporary controversies?Part of the answer lies in the underlying features of Internet technology itself, and the ways in which it has been exploited by business firms. Internet technology and its usein e-commerce disrupt existing social and business relationships and understandings. **Table 11.1** examines the actual or potential ethical, social, and/or political consequences of the technology.

We live in an "information society," where power and wealth increasingly depend on information and knowledge as central assets. Controversies over information are often disagreements over power, wealth, influence, and other things thought to be valuable. Like other technologies, such as steam, electricity, telephones, and television, the Internet and e-commerce can be used to achieve social progress, and for the most part, this has occurred. However, the same technologies can be used to commit crimes, despoil the environment, and threaten cherished social values. Before automobiles, there was very little interstate crime and very little federal jurisdiction over crime. Likewise with the Internet: before the Internet, there was very little "cybercrime."

UNIQUE FEATURES OF E-COMMERCE TECHNOLOGY AND THEIR POTENTIAL ETHICAL, SOCIAL, AND/OR POLITICAL IMPLICATIONS

E-COMMERCE TECHNOLOGY DIMENSION	POTENTIAL ETHICAL, SOCIAL, AND POLITICAL SIGNIFICANCE
Ubiquity—Internet/web technology is available everywhere: at work, at home, and elsewhere via mobile devices, anytime.	Work and shopping can invade family life; shopping can distract workers at work, lowering productivity; use of mobile devices can lead to automobile and industrial accidents. Presents confusing issues of "nexus" to taxation authorities.
Global reach—The technology reaches across national boundaries, around the Earth.	Reduces cultural diversity in products; weakens local small firms while strengthening large global firms; moves manufacturing production to low-wage areas of the world; weakens the ability of all nations—large and small—to control their information destiny.
Universal standards—There is one set of technology standards, namely Internet standards.	Increases vulnerability to viruses and hacking attacks worldwide, affecting millions of people at once. Increases the likelihood of "information" crime, crimes against systems, and deception.
Richness—Video, audio, and text messages are possible.	A "screen technology" that reduces use of text and potentially the ability to read by focusing instead on video and audio messages. Potentially very persuasive messages that may reduce reliance on multiple independent sources of information.
Interactivity—The technology works through interaction with the user.	The nature of interactivity at commercial sites can be shallow and meaningless. Customer e-mails are frequently not read by human beings. Customers do not really "co-produce" the product as much as they "co-produce" the sale. The amount of "customization" of products that occurs is minimal, occurring within predefined platforms and plug-in options.
Information density—The technology reduces information costs, and raises quality.	While the total amount of information available to all parties increases, so does the possibility of false and misleading information, unwanted information, and invasion of solitude. Trust, authenticity, accuracy, completeness, and other quality features of information can be degraded. The ability of individuals and organizations to make sense out of this plethora of information is limited.
Personalization/Customization—The technology allows personalized messages to be delivered to individuals as well as groups.	Opens up the possibility of intensive invasion of privacy for commercial and governmental purposes that is unprecedented.
Social technology—The technology enables user content generation and social networking.	Creates opportunities for cyberbullying, abusive language, and predation; challenges concepts of privacy, fair use, and consent to use posted information; creates new opportunities for surveillance by authorities and corporations into private lives.

Table 11.1 Unique features of E-commerce technology

Many business firms and individuals are benefiting from the commercial developmentof the Internet, but this development also exacts a price from individuals,organizations, and societies. These costs and benefits must be carefully consideredby those seeking to make ethical and socially responsible decisions in this new environment. The question is: How can you as a manager make reasoned judgmentsabout what your firm should do in a number of e-commerce

areas—from securing theprivacy of your customer's clickstream to ensuring the integrity of your company's domain name?

A MODEL FOR ORGANIZING THE ISSUES

E-commerce—and the Internet—have raised so many ethical, social, and politicalissues that it is difficult to classify them all, and hence, complicated to see theirrelationship to one another. Clearly, ethical, social, and political issues are interrelated.

One way to organize the ethical, social, and political dimensions surrounding e-commerce is shown in **Figure 11.1**. At the individual level, what appears as an ethicalissue—"What should I do?"—is reflected at the social and political levels—"What shouldwe as a society and government do?" The ethical dilemmas you face as a manager ofa business using the Web reverberate and are reflected in social and political debates.

The major ethical, social, and political issues that have developed around e-commerceover the past 10 years can be loosely categorized into four major dimensions: informationrights, property rights, governance, and public safety and welfare.

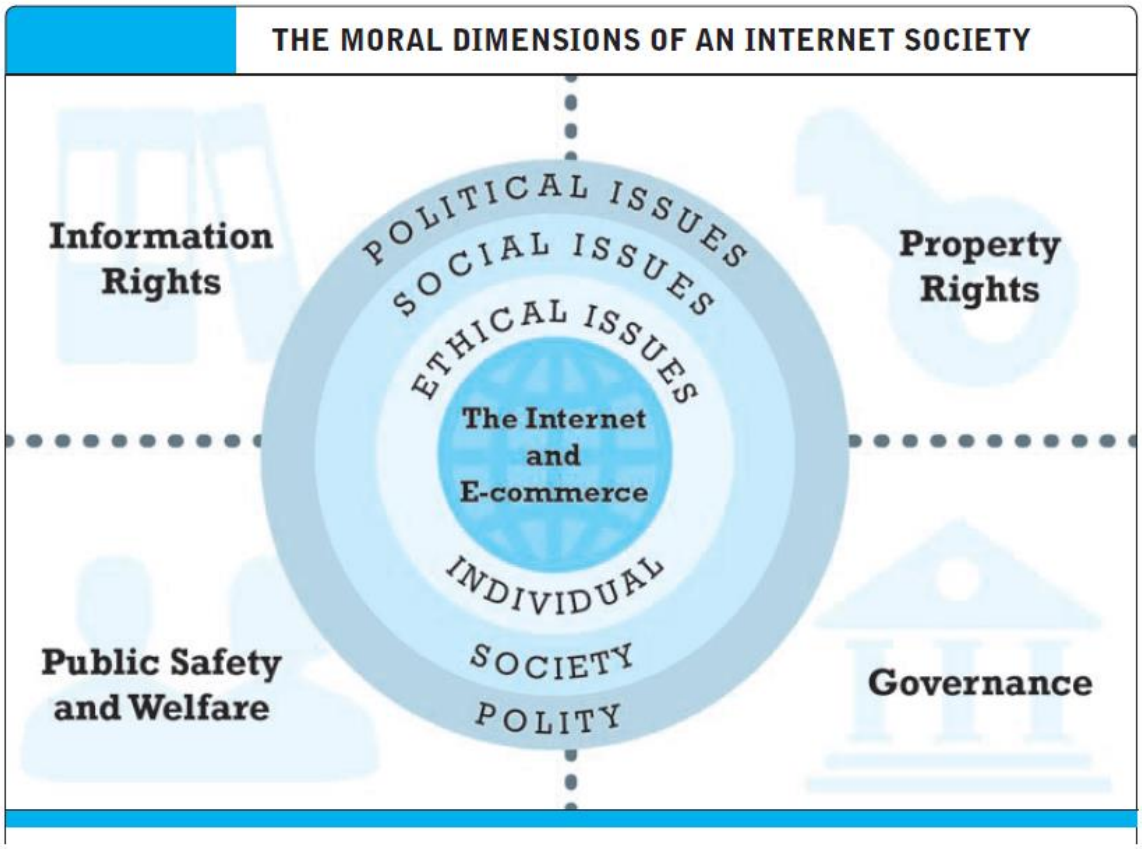

Fig 11.1 The moral dimensions of an internet society

Some of the ethical, social, and political issues raised in each of these areas includethe following:

• **Information rights:** What rights to their own personal information do individualshave in a public marketplace, or in their private homes, when Internet technologiesmake information collection so pervasive and efficient? What rights do individualshave to access information about business firms and other organizations?

- **Property rights:** How can traditional intellectual property rights be enforced inan Internet world where perfect copies of protected works can be made and easilydistributed worldwide in seconds?
- **Governance:** Should the Internet and e-commerce be subject to public laws? And ifso, what law-making bodies have jurisdiction—state, federal, and/or international?
- **Public safety and welfare:** What efforts should be undertaken to ensure equitableaccess to the Internet and e-commerce channels? Should governments beresponsible for ensuring that schools and colleges have access to the Internet? Arecertain online content and activities—such as pornography, gambling, or anonymoustweeting of hateful language—a threat to public safety and welfare? Whatabout connected cars? Should mobile commerce be allowed from moving vehicles?

To illustrate, imagine that at any given moment, society and individuals are moreor less in an ethical equilibrium brought about by a delicate balancing of individuals,social organizations, and political institutions. Individuals know what is expected ofthem, social organizations such as business firms know their limits, capabilities, androles, and political institutions provide a supportive framework of market regulation,banking, and commercial law that provides sanctions against violators.

Now, imagine we drop into the middle of this calm setting a powerful new technologysuch as the Internet and e-commerce. Suddenly, individuals, business firms,and political institutions are confronted by new possibilities of behavior. For instance,individuals discover that they can download perfect digital copies of music tracks fromwebsites without paying anyone, something that, under the old technology of CDs,would have been impossible. This can be done, despite the

fact that these music tracks still legally belong to the owners of the copyright—musicians and record label companies.

Then, business firms discover that they can make a business out of aggregatingthese digital musical tracks—or creating a mechanism for sharing musical tracks—eventhough they do not "own" them in the traditional sense. The record companies, courts,and Congress were not prepared at first to cope with the onslaught of online digital copying. Courts and legislative bodies will have to make new laws and reach new judgmentsabout who owns digital copies of copyrighted works and under what conditionssuch works can be "shared." It may take years to develop new understandings, laws,and acceptable behavior in just this one area of social impact. In the meantime, as anindividual and a manager, you will have to decide what you and your firm should do in legal "gray" areas, where there is conflict between ethical principles but no clear-cutlegal or cultural guidelines. How can you make good decisions in this type of situation?

Before examining the four moral dimensions of e-commerce in greater depth, wewill briefly review some basic concepts of ethical reasoning that you can use as a guideto ethical decision making, and provide general reasoning principles about the socialand political issues of the Internet that you will face in the future.

11.2 PRIVACY AND INFORMATION RIGHTS

Privacy is arguably the most complex ethical issue raised by e-commerce, as well asthe changing technology of human communications brought on by the Internet andmobile devices. It may be the most delicate and vexing issue of our digital age, onethat will continue to evolve through this century. How can we square the ever-growingpower of digital technologies to gather personal information by businesses and government with the notion that individuals have the right to be left alone, free to think what they want without fear?In ways not anticipated by technologists or politicians, these digital technologiesand devices have become the primary means of personal interaction with other peopleand firms. The smartphone and Internet are now at the center of social, political, andbusiness life. In the fast-growing online marketplace for goods and services, these technologies efficiently and faithfully record human market behavior in ways never imagined. The resulting trove of personal private information gathered by onlinemerchants has no precedent in history. Laws and regulations to govern the use of thisinformation are weak and

poorly defined. As a result, consumers often feel they havelost control over their personal information online. And, indeed, they have.

WHAT IS PRIVACY?

The claim to **privacy** rests on the moral right of individuals to be left alone, freefrom surveillance or interference from other individuals or organizations, includingthe state. Privacy is one girder supporting freedom: without the privacy required tothink, write, plan, and associate independently and without fear, social and politicalfreedom is weakened, and perhaps destroyed.

Information privacy is a subset of privacy that rests on four central premises.First, individuals have a moral right to be able to control the use of whatever informationis collected about them, whether or not they consented to the gathering of informationin the first place. Individuals should be able to edit, delete, and shape the useof their online personal information by governments and business firms. In this view, individuals even have the "**right to be forgotten**".

Second, individuals have a moral right to know when information is being collectedabout them, and must give their consent prior to collecting their personal information.This is the principle of "informed consent," that people are rational actors whoare informed, and who will make their own choices in the marketplace, including thedecision whether to give their information in return for some benefit.Third, individuals have a right to personal information due process. The processof collecting, sharing, disseminating personal information must be "fair" and transparentto everyone. Systems of personal information—whether public or private—mustbe publicly known (no secret systems), operate according to a published set of rules (terms of use policies) describing how governments and firms will use personal information,and define ways in which people can edit, correct, and shape their personalinformation in a system of records.

Fourth, individuals have a right to have their personal information stored in asecure manner. Personal record systems must have procedures in place to protectpersonal information from intrusion, hacking, and unauthorized uses.

These principles of personal information privacy are reflected in a doctrine calledFair Information Practices (FIP), established by the U.S. Federal Trade Commission (FTC) in 2000 . We discuss the role of the FTC in protecting personalprivate information further later in the chapter.

PRIVACY IN THE PUBLIC SECTOR: PRIVACY RIGHTS OF CITIZENS

The concept and practice of privacy, and its legal foundation, are very different inthe public versus the private sector. In the public sector, concepts of privacy have along history that has evolved over two centuries of court rulings, laws, and regulationsin the United States and Europe. In the private sector, concepts of privacy are muchmore recent, and in the age of the Internet, in a state of flux, debate, and argument.

The claim to individual privacy in the public sector, the arena of politics, power,and authority, is largely a European and American phenomenon that started as anattempt to limit the power of political executive leaders—kings, despots, and presidents,and to establish an acceptable relationship between citizens and their leaders.

In the United States, these claims were written into the Constitution and the Billof Rights. The First Amendment guarantees citizens freedom of speech, association,and religion, and prohibits Congress from passing any laws that challenge these rights.

The Fourth Amendment prohibits government agents from unreasonable searchesand seizures of a citizen's premises, and requires a court-sanctioned warrant basedon probable cause prior to any search of a person's premises. Much later, the FourthAmendment was extended beyond the home to a very limited set of physical places.

Warrants are not required when consent is given, for most motor vehicle searches,or when evidence is in plain view. The Fourteenth Amendment prohibits states frompassing laws that deprive persons of life, liberty, or property, which the courts haveinterpreted as protecting the privacy of personal behavior in the home.

The word privacy is not mentioned in these founding documents, but it is consideredto be necessary (implicit) for these amendments to mean anything. If privacyis denied, then freedom of speech, association, and religion is not possible. If one'spremises cannot be protected against unreasonable searches by government, then there is no privacy.

PRIVACY IN THE PRIVATE SECTOR: PRIVACY RIGHTS OF CONSUMERS

When the first large-scale, nationwide computerized systems began to appear in theUnited States in the 1960s, privacy issues and claims rose. For instance, credit cardsystems for the first time gave retail merchants and financial institutions the abilityto systematically collect digital

information on consumer behavior. For the first timethere were very large private national databases that contained a history of whateverpeople purchased, from whom, and where. Large national private credit rating agenciesappeared and began developing consumer credit histories, with details on personalfinances from credit card to loan payments. These developments led to the first effortsto claim a right to consumer privacy. Other institutions within the education, health,and financial services sectors also began creating very large scale databases involving millions of citizens. There followed a host of U.S. federal and state legislation thatapplied to specific industries from credit reporting, finance, and health, to video stores. The pattern of protecting privacy in the United States is not with a general privacy statute covering all record systems, but instead to develop privacystatutes piecemeal, one industry at a time, as abuses become known.

While there is a very long history to the discussion of privacy in the public sector in Europe and the United States, and a more recent history of applying theseideas to very large scale private institutions (such as banks, medical providers, andinsurance companies), the same is not true of consumer privacy in public markets.

E-commerce is based on online markets and transactions. Since village marketsappeared in ancient villages, to the present day, there rarely has been a claim toprivacy in public, open markets. Think about the local farmers markets today: few,if any, people claim that what they purchase is private, or that others should not seewhat they are buying or the prices they pay. Merchants in public markets collectedpersonal information in the course of commerce. "Knowing your customer" meantknowing the name, personal preferences, interests, purchases, and background of consumers. Consumer behavior in public markets was not protected by common lawor our founding documents.Yet no one anticipated the rise of Google, Facebook, Amazon, Netflix, and othere-commerce companies that collect personal information on nearly the entire population of the United States (and the world). No one anticipated that e-commerce wouldinvolve over 200 million people in the United States; that a single company woulddominate book sales (Amazon) or movie rentals (Netflix); that a single company woulddominate the online search market and gather very detailed data on consumer intentionsand interests (Google); or that a single firm would become a repository of thesocial life of billions of people (Facebook). The emergence of the Internet, the Web,and now smartphones, and their use in truly huge online markets involving most of the American population, has

greatly enlarged the ability of merchants, financialinstitutions, and marketing firms to gather digital consumer data, use it for their owncommercial purposes, and potentially abuse that information. These same forces havealso spurred the growth of demands for the protection of consumer personal privacyin the digital era.

As it turns out, the Internet and the Web provide an ideal environment for bothbusiness and government to invade the personal privacy of millions of consumers ona scale unprecedented in history. Perhaps no other recent issue has raised as muchwidespread social and political concern as protecting the privacy of Internet users.

11.3 INTELLECTUAL PROPERTY RIGHTS

Next to privacy, the most controversial ethical, social, and political issue related toe-commerce is the fate of intellectual property rights. Intellectual property encompassesall the tangible and intangible products of the human mind. As a general rule, inthe United States, the creator of intellectual property owns it. For instance, if you personallycreate an e-commerce site, it belongs entirely to you, and you have exclusiverights to use this "property" in any lawful way you see fit. But the Internet potentially changes things. Once intellectual works become digital, it becomes difficult to controlaccess, use, distribution, and copying. These are precisely the areas that intellectualproperty seeks to control.

Digital media differ from books, periodicals, and other media in terms of ease ofreplication, transmission, and alteration; difficulty in classifying a software work asa program, book, or even music; compactness—making theft easy; and difficulty inestablishing uniqueness. Before widespread use of the Internet, copies of software,books, magazine articles, or films had to be stored on physical media, such as paper,computer disks, or videotape, creating hurdles to distribution, and raising the costsof illegal copies.

The Internet technically permits millions of people to make perfect digital copiesof various works—from music to plays, poems, and journal articles—and then to distributethem nearly cost-free to hundreds of millions of online users. The proliferationof innovation has occurred so rapidly that few entrepreneurs have stopped to considerwho owns the patent on a business technique or method that they are using on their site. The spirit of the Web has been so free-

wheeling that many entrepreneursignored trademark law and registered domain names that could easily be confusedwith another company's registered trademarks. In short, the Internet has demonstratedthe potential to disrupt traditional conceptions and implementations of intellectualproperty law developed over the last two centuries.

The major ethical issue related to e-commerce and intellectual property concernshow we (both as individuals and as business professionals) should treat property thatbelongs to others. From a social point of view, the main questions are: Is there continuedvalue in protecting intellectual property in the Internet age? In what ways issociety better off, or worse off, for having the concept of property apply to intangibleideas, including music, books, and movies? Should society make certain technology illegal or restrict the use of the Internet just because it has an adverse impact on someintellectual property owners? From a political perspective, we need to ask how theInternet and e-commerce can be regulated or governed to protect the institution ofintellectual property while at the same time encouraging the growth of e-commerceand the Internet.

TYPES OF INTELLECTUAL PROPERTY PROTECTION

There are four main types of intellectual property protection: copyright, patent, trademarklaw, and trade secrets law. In the United States, the development of intellectualproperty law begins with the U.S. Constitution, which mandated Congress to devisea system of laws to promote "the progress of science and the useful arts." Congresspassed the first copyright law in 1790 to protect original written works for a period of 14 years, with a 14-year renewal if the author was still alive. Since then, the idea ofcopyright has been extended to include music, films, translations, photographs, andmost recently the designs of vessels under 200 feet. The copyright lawhas been amended (mostly extended) 11 times in the last 40 years.The goal of intellectual property law is to balance two competing interests—thepublic and the private. The public interest is served by the creation and distribution ofinventions, works of art, music, literature, and other forms of intellectual expression.The private interest is served by rewarding people for creating these works throughthe creation of a time-limited monopoly granting exclusive use to the creator.Maintaining this balance of interests is always challenged by the invention of new technologies. In general, the information technologies of the last century—from radioand

television to CD-ROMs, DVDs, and the Internet—have at first tended to weakenthe protections afforded by intellectual property law. Owners of intellectual propertyhave often, but not always, been successful in pressuring Congress and the courts tostrengthen the intellectual property laws to compensate for any technological threat, and even to extend protection for longer periods of time and to entirely new areas ofexpression. In the case of the Internet and e-commerce technologies, once again, intellectualproperty rights are severely challenged. In the next few sections, we discussthe significant developments in each area: copyright, patent, and trademark.

COPYRIGHT: THE PROBLEM OF PERFECT COPIES AND ENCRYPTION

In the United States, **copyright law** protects original forms of expression such aswritings (books, periodicals, lecture notes), art, drawings, photographs, music, motionpictures, performances, and computer programs from being copied by others for aperiod of time. Up until 1998, the copyright law protected works of individuals fortheir lifetime plus 50 years beyond their life, and works created for hire and ownedby corporations, such as Mickey Mouse of the Disney Corporation, for 75 years afterinitial creation. Copyright does not protect ideas—just their expression in a tangiblemedium such as paper, cassette tape, or handwritten notes.

In 1998, the U.S. Congress extended the period of copyright protection for anadditional 20 years, for a total of 95 years for corporate-owned works, and life plus 70years of protection for works created by individuals (the Copyright Term ExtensionAct, also known as the CTEA).

Librarians, academics, and others who depend on inexpensive access to copyrightedmaterial opposed the legislation.In the mid-1960s, the Copyright Office began registering software programs, andin 1980, Congress passed the Computer Software Copyright Act, which clearly providesprotection for source and object code and for copies of the original sold in commerce,and sets forth the rights of the purchaser to use the software while the creator retainslegal title. For instance, the HTML code for a web page—even though easily availableto every browser—cannot be lawfully copied and used for a commercial purpose, say,to create a new website that looks identical.Copyright protection is clear-cut: it protects against copying of entire programs ortheir parts. Damages and relief are readily obtained for infringement. The drawback tocopyright protection is that the underlying ideas behind a work are not protected,

only their expression in a work. A competitor can view the source code on your websiteto see how various effects were created and then reuse those techniques to create adifferent website without infringing on your copyright.

Look and Feel

"Look and feel" copyright infringement lawsuits are precisely about the distinctionbetween an idea and its expression. For instance, in 1988, Apple Computer suedMicrosoft Corporation and Hewlett-Packard Inc. for infringing Apple's copyright on theMacintosh interface. Among other claims, Apple claimed that the defendants copiedthe expression of overlapping windows. Apple failed to patent the idea of overlapping windows when it invented this method of presenting information on a computerscreen in the late 1960s. The defendants counterclaimed that the idea of overlappingwindows could only be expressed in a single way and, therefore, was not protectableunder the "merger" doctrine of copyright law. When ideas and their expression merge(i.e., if there is only one way to express an idea), the expression cannot be copyrighted, although the method of producing the expression might be patentable. In general, courts appear to be following the reasoning of a1992 case—*Brown Bag Software vs. Symantec Corp*.—in which the court dissected the elements of software alleged to be infringing. There, the U.S. Federal Circuit Courtof Appeals found that neither similar concept, function, general functional features(e.g., drop-down menus), nor colors were protectable by copyright law.

Fair Use Doctrine

Copyrights, like all rights, are not absolute. There are situations where strict copyrightobservance could be harmful to society, potentially inhibiting other rights such as theright to freedom of expression and thought. As a result, the doctrine of fair use hasbeen created. The **doctrine of fair use** permits teachers, writers, and others to usecopyrighted materials without permission under certain circumstances. The fair use doctrine draws upon the First Amendment's protection of freedomof speech (and writing). Journalists, writers, and academics must be able to refer to,and cite from, copyrighted works in order to criticize, or even discuss them. Professorsare allowed to clip a contemporary article just before class, copy it, and hand it out tostudents as an example of a topic under discussion. However, they are not permittedto add this article to the class syllabus for the next semester without compensating the copyright holder.

Fair use was also at issue in a lawsuit filed by the Authors Guild and five majorpublishing companies against Google. In 2004, Google announced a book project withtwo parts. A Partner Program would scan books with the permission of publishers,index the books, post snippets of the books on line, and make bibliographic informationavailable on Google's search engine. In the second project, called the LibraryProject, Google aimed to scan all the books in several university and public libraries, and then make snippets and parts of the book available online without receiving permissionfrom the publishers or paying royalties. Google said it would never show afull page, just relevant portions of a page in response to searches. In 2005, the AuthorsGuild and the large book publishers filed a lawsuit seeking to prevent Google fromimplementing the Library Project.

Google argued that the Library Project constituted fair use of publishers' copyrightedworks because it only published snippets. Moreover, Google claimed that it wassimply helping libraries do what they are intended to do, namely, lend books. Librarylending is considered a fair use following an agreement in the late 1930s with publishers,and such lending was codified into the Copyright Act of 1976. Google claimed thathelping libraries make books more available to the public was in the broader public interest, and extended existing rights of libraries to encourage book availability.

PATENTS: BUSINESS METHODS AND PROCESSES

A **patent** grants the owner a 20-year exclusive monopoly on the ideas behind an invention.The congressional intent behind patent law was to ensure that inventors of newmachines, devices, or industrial methods would receive the full financial and other rewards of their labor and still make widespread use of the invention possible byproviding detailed diagrams for those wishing to use the idea under license from the patent's owner. Patents are obtained from the United States Patent and TrademarkOffice (USPTO), which was created in 1812. Obtaining a patent is much more difficultand time-consuming than obtaining copyright protection (which is automatic with thecreation of the work). Patents must be formally applied for, and the granting of a patentis determined by Patent Office examiners who follow a set of rigorous rules. Ultimately,federal courts decide when patents are valid and when infringement occurs.

Patents are very different from copyrights because patents protect the ideas themselvesand not merely the expression of ideas. There are four types of inventions forwhich patents are granted under patent law: machines, man-made products, compositionsof matter, and processing methods. The U.S. Supreme Court has determinedthat patents extend to "anything under the sun that is made by man" as long as the other requirements of the Patent Act are met. Thereare three things that cannot be patented: laws of nature, natural phenomena, andabstract ideas. For instance, a mathematical algorithm cannot be patented unless it isrealized in a tangible machine or process that has a "useful" result (the mathematicalalgorithm exception).

In order to be granted a patent, the applicant must show that the invention isnew, original, novel, nonobvious, and not evident in prior arts and practice. As withcopyrights, the granting of patents has moved far beyond the original intent of Congress'sfirst patent statute, which sought to protect industrial designs and machinesPatent protection has been extended to articles of manufacture (1842), plants (1930),surgical and medical procedures (1950), and software (1981). The Patent Office did not accept applications for software patents until a 1981 U.S. Supreme Court decision thatheld that computer programs could be a part of a patentable process. Since that time,thousands of software patents have been granted. Virtually any software program canbe patented as long as it is novel and not obvious.

Essentially, as technology and industrial arts progress, patents have been extendedto both encourage entrepreneurs to invent useful devices and promote widespreaddissemination of the new techniques through licensing and artful imitation of thepublished patents (the creation of devices that provide the same functionality as theinvention but use different methods). Patents encourage inventorsto come up with unique ways of achieving the same functionality as existing patents.For instance, Amazon's patent on one-click purchasing caused Barnesandnoble.comto invent a simplified two-click method of purchasing.The danger of patents is that they stifle competition by raising barriers to entryinto an industry. Patents force new entrants to pay licensing fees to incumbents, andthus slow down the development of technical applications of new ideas by creating lengthy licensing applications and delays. Nowhere is the tradeoff between encouraginginnovation and yet avoiding raising barriers to market entry (and thereby discouraginginnovation) more evident than in the patent battle that has raged betweenApple and Samsung in the smartphone market.In 2011, Apple filed suit in the United States against

Samsung alleging that Samsung'sGalaxy smartphones violated Apple patents on its iPhone and iPad computer. By2012, Apple and Samsung were involved in over 50 different patent lawsuits throughout the world.

E-commerce Patents

Much of the Internet's infrastructure and software was developed under the auspicesof publicly funded scientific and military programs in the United States and Europe.Unlike Samuel F. B. Morse, who patented the idea of Morse code and made the telegraphuseful, most of the inventions that make the Internet and e-commerce possiblewere not patented by their inventors. The early Internet was characterized by a spiritof worldwide community development and sharing of ideas without consideration of personal wealth. This early Internet spirit changed in the mid-1990s with the commercial development of the Web.In 1998, a landmark legal decision, *State Street Bank & Trust v. Signature Financial*

Group, Inc., paved the way for business firms to begin applying for "business methods"patents. In this case, a Federal Circuit Court of Appeals upheld the claims of SignatureFinancial to a valid patent for a business method that allows managers to monitor andrecord financial information flows generated by a partner fund. Previously, it was thought business methods could not be patented. However, the court ruled there wasno reason to disallow business methods from patent protection, or any "step by stepprocess, be it electronic or chemical or mechanical, [that] involves an algorithm inthe broad sense of the term" (*State Street Bank & Trust Co. v. Signature Financial Group,*1998). The State Street decision led to an explosion in applications for e-commerce"business methods" patents. In 2010, the U.S. Supreme Court issued a divided opinionon business methods patents in the *Bilski et al. v. Kappos*case (*Bilski et al. v. Kappos,*2010). The majority argued that business methods patents were allowable even thoughthey did not meet the traditional "machine or transformation test," in which patentsare granted to devices that are tied to a particular machine, are a machine, or transform articles from one state to another. The minority wanted to flatly declare that business methods are not patentable in part because any series of steps could beconsidered a business method (Schwartz, 2010). The Supreme Court struck anotherblow against business method patents in 2014, with its decision in *Alice Corporationvs. CLS Bank International*. The Court ruled that basic business methods cannot bepatented and that while software can be patented, implementing an abstract

idea that otherwise could not be patented by using software does not transform the idea intoa patentable innovation (*Alice Corporation Pty. Ltd. v. CLS Bank International*, 2014).

TRADEMARKS: ONLINE INFRINGEMENT AND DILUTION

Trademark law is a form of intellectual property protection for **trademarks**—a markused to identify and distinguish goods and indicate their source. Trademark protections exist at both the federal and state levels in the United States. The purpose of trademarklaw is twofold. First, trademark law protects the public in the marketplace by ensuringthat it gets what it pays for and wants to receive. Second, trademark law protects theowner—who has spent time, money, and energy bringing the product to the marketplace—against piracy and misappropriation. Trademarks have been extended fromsingle words to pictures, shapes, packaging, and colors. Some things may not be trademarkedsuch as common words that are merely descriptive ("clock"). Federal trademarksare obtained, first, by use in interstate commerce, and second, by registrationwith the U.S. Patent and Trademark Office (USPTO). Federal trademarks are granted for a period of 10 years and can be renewed indefinitely.

Disputes over federal trademarks involve establishing infringement. The testfor infringement is twofold: market confusion and bad faith. Use of a trademark thatcreates confusion with existing trademarks, causes consumers to make market mistakes,or misrepresents the origins of goods is an infringement. For instance, in 2015,

Multi Time Machine (MTM) sued Amazon for violation of its trademarks and confusingconsumers looking to buy MTM watches. MTM makes military style watches thatare not sold on Amazon. If a user searches on Amazon for an MTM watch, the searchresults shows watches being offered by MTM competitors that are similar in style toMTM's. MTM argued that this could confuse customers and the court agreed, allowingthe case to proceed to trial. In addition, the intentional misuse ofwords and symbols in the marketplace to extort revenue from legitimate trademarkowners ("bad faith") is proscribed.In 1995, the U.S. Congress passed the Federal Trademark Dilution Act (FTDA),

which created a federal cause of action for dilution of famous marks. This legislationdispenses with the test of market confusion (although that is still required to claiminfringement), and extends protection to owners of famous trademarks against **dilution**,which is defined as any behavior that would weaken the connection betweenthe trademark and the product. In 2006, the

FTDA was amended by the TrademarkDilution Revision Act (TDRA), which allows a trademark owner to file a claim based on a "likelihood of dilution" standard, rather than having to provide evidence of actual dilution

Trademarks and the Internet

The rapid growth and commercialization of the Internet have provided unusual opportunitiesfor existing firms with distinctive and famous trademarks to extend theirbrands to the Internet. These same developments have provided malicious individualsand firms the opportunity to squat on Internet domain names built upon famous marks, as well as attempt to confuse consumers and dilute famous or distinctive marks(including your personal name or a movie star's name).

In response to a growing number of complaints from owners of famous trademarkswho found their trademark names being appropriated by web entrepreneurs, the U.S.Congress passed the **Anticybersquatting Consumer Protection Act (ACPA)** in1999. The ACPA creates civil liabilities for anyone who attempts in bad faith to profitfrom an existing famous or distinctive trademark by registering an Internet domain name that is identical or confusingly similar to, or "dilutive" of, that trademark. Theact does not establish criminal sanctions. It proscribes using "bad-faith" domain namesto extort money from the owners of the existing trademark **(cybersquatting)**, or usingthe bad-faith domain to divert web traffic to the bad-faith domain that could harm thegood will represented by the trademark, create market confusion, or tarnish or disparagethe mark **(cyberpiracy)**. It is conceivable that domains such as the previously described Apple.sucks might be seen as a kind of cybersquatting and a violation of theACPA. The act also proscribes the use of a domain name that consists of the name ofa living person, or a name confusingly similar to an existing personal name, without that person's consent, if the registrant is registering the name with the intent to profitby selling the domain name to that person.

Cybersquatting and Brandjacking

In one of the first cases involving the ACPA, E. & J. Gallo Winery, owner of the registeredmark "Ernest and Julio Gallo" for alcoholic beverages, sued Spider Webs Ltd.for using the domain name Ernestandjuliogallo.com. Spider Webs Ltd. was a domainname speculator that owned numerous domain names consisting of famous companynames. The Ernestandjuliogallo.com website contained information on the risks of alcohol use, anti-corporate articles about E. & J.

Gallo Winery, and was poorly con structed. The court concluded that Spider Webs Ltd. was in violation of the ACPA andthat its actions constituted dilution by blurring because the Ernestandjuliogallo.comdomain name appeared on every page printed off the website accessed by that name,and that Spider Webs Ltd. was not free to use this particular mark as a domain name (*E. & J. Gallo Winery v. Spider Webs Ltd.*, 2001).

Cyber piracy

Cyber piracy involves the same behavior as cyber squatting, but with the intent ofdiverting traffic from the legitimate site to an infringing site. In *Ford Motor Co. v.Lapertosa*, Lapertosa had registered and used a website called Fordrecalls.com as anadult entertainment website. The court ruled that Fordrecalls.com was in violation ofthe ACPA in that it was a bad-faith attempt to divert traffic to the Lapertosa site anddiluted Ford's wholesome trademark (*Ford Motor Co. v. Lapertosa*, 2001).

Metatagging

The legal status of using famous or distinctive marks as metatags is more complex andsubtle. The use of trademarks in metatags is permitted if the use does not mislead orconfuse consumers. Usually this depends on the content of the site. A car dealer wouldbe permitted to use a famous automobile trademark in its metatags if the dealer soldthis brand of automobiles, but a pornography site could not use the same trademark,

nor a dealer for a rival manufacturer. A Ford dealer would most likely be infringingif it used "Honda" in its metatags, but would not be infringing if it used "Ford" in itsmetatags. (Ford Motor Company would be unlikely to seek an injunction against oneof its dealers.)

In the *Bernina of America, Inc. v. Fashion Fabrics Int'l, Inc.* case, the court enjoinedFashion Fabrics, an independent dealer of sewing machines, from using the trademarks"Bernina" and "Bernette," which belonged to the manufacturer Bernina, asmetatags. The court found the defendant's site contained misleading claims aboutFashion Fabrics' knowledge of Bernina products that were likely to confuse customers.The use of the Bernina trademarks as metatags per se was not a violation of ACPA,according to the court, but in combination with the misleading claims on the sitewould cause confusion and hence infringement (*Bernina of America, Inc. v. FashionFabrics Int'l, Inc.*, 2001).

Keywording

The permissibility of using trademarks as keywords on search engines is also subtleand depends (1) on the extent to which such use is considered to be a "use in commerce"and causes "initial customer confusion" and (2) on the content of the searchresults.

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Linking

Linking refers to building hypertext links from one site to another site. This is obviouslya major design feature and benefit of the Web. **Deep linking** involves bypassingthe target site's home page and going directly to a content page. In *Ticketmaster Corp.v. Tickets.com*, Tickets.com—owned by Microsoft—competed directly against Ticketmasterin the events ticket market. When Tickets.com did not have tickets for anevent, it would direct users to Ticketmaster's internal pages, bypassing the Ticketmaster home page. Even though its logo was displayed on the internal pages, Ticketmasterobjected on the grounds that such "deep linking" violated the terms and conditionsof use for its site (stated on a separate page altogether and construed by Ticketmasteras equivalent to a shrink-wrap license), and constituted false advertising, as well as the violation of copyright. The court found, however, that deep linking per se is notillegal, no violation of copyright occurred because no copies were made, the termsand conditions of use were not obvious to users, and users were not required to readthe page on which the terms and conditions of use appeared in any event. The courtrefused to rule in favor of Ticketmaster, but left open further argument on the licensing issue. In an out-of-court settlement, Tickets.com nevertheless agreed to stop thepractice of deep linking (*Ticketmaster v. Tickets.com*, 2000).

Framing

Framing involves displaying the content of another website inside your own websitewithin a frame or window. The user never leaves the framer's site and can be exposedto advertising while the target site's advertising is distorted or eliminated. Framersmay or may not acknowledge the source of the content. In *The Washington Post, et al.v. TotalNews, Inc.,* The Washington Post Company, CNN, Reuters, and several othernews organizations filed suit against TotalNews, Inc., claiming that TotalNews's use offrames on its website, TotalNews.com, infringed upon the respective plaintiffs' copyrightsand trademarks, and diluted the content of their individual

websites. The plaintiffsclaimed additionally that TotalNews's framing practice effectively deprived theplaintiffs' websites of advertising revenue.

TotalNews's website employed four frames. The TotalNews logo appeared in thelower left frame, various links were located in a vertical frame on the left side of thescreen, TotalNews's advertising was framed across the screen bottom, and the "newsframe," the largest frame, appeared in the center and right. Clicking on a specificnews organization's link allowed the reader to view the content of that particularorganization's website, including any related advertising, within the context of the "news frame." In some instances, the framing distorted or modified the appearanceof the linked website, including the advertisements, while the appearance of Total-News's advertisements, in a separate frame, remained unchanged. In addition, theURL remained fixed on the TotalNews address, even though the content in the largestframe on the website was from the linked website. The "news frame" did not, however, eliminate the linked website's identifying features.The case was settled out of court. The news organizations allowed TotalNews tolink to their websites, but prohibited framing and any attempt to imply affiliation with the news organizations (*The Washington Post, et al. v. TotalNews, Inc.*, 1997).

11.4 CHECK YOUR PROGRESS

11. What is due process?
12. What is informed consent?
13. What is personally identifiable information?
14. What is right to be forgotten**?**
15. What is profiling?

Answers to Check Your Progress

11. a process in which laws are known and understood and there is an ability to appeal to higher authorities to ensure that the laws have been correctly applied
12. consent given with knowledge of all material facts needed to make a rational decision
13. Any data that can be used to identify, locate, or contact an individual

14. the claim of individuals to be able to edit and delete personal information
15. the creation of digital images that characterize online individual and group behavior

11.5 Summary

In this unit we understood why e-commerce raises ethical, social, and political issues. The major issues raised by e-commerce can be loosely categorized into four major dimensions - *Information rights, Property rights, Governance, Public safety and welfare*. Ethical, social, and political controversies usually present themselves as dilemmas. We learnt how to analyse Ethical dilemmas. Understood basic concepts related to privacy and information rights, the practices of e-commerce companies thatthreaten privacy, and the different methods that can be used to protect online privacy. We learnt a number of different methods used to protect online privacy. Discussed various forms of intellectual property and the challenges involved in protecting it.

11.6 KEYWORDS

- **Ethics -** the study of principles that individuals and organizations can use to determine right and wrong courses ofAction
- **Responsibility -** as free moral agents, individuals, organizations, and societies are responsible for the actions theytake
- **accountability -** individuals, organizations, and societies should be held accountable to others for the consequences of their actions
- **liability -** a feature of political systems in which a body of law is in place that permits individuals to recover thedamages done to them by other actors, systems, or organizations
- **due process -** a process in which laws are known and understood and there is an ability to appeal to higher authorities to ensure that the laws have been correctly applied
- **dilemma -** a situation in which there are at least two diametrically opposed actions, each of which supports a desirable outcome
- **privacy -** the moral right of individuals to be left alone, free from surveillance or interference from other individuals or organizations, including the state

- **information privacy -** subset of privacy that rests on four central premises, including the moral rights to control use of information collected and to know whether information is being collected, the right to personal information dueprocess, and the right to have personal information stored in a secure manner
- **right to be forgotten -** the claim of individuals to be able to edit and delete personal information

11.7 SELF ASSESSMENT QUESTIONS

1. Identify the four main dimensions that e-commerce ethical, political, and social issues fall into andprovide an example of how each dimension might apply to an individual.
2. How can the effectiveness of privacy policies be measured?
3. Why has the development of the Internet brought about so many ethical, political, and social issues?
4. What are some of the ethical, social, or political issues raised by the information density created by e-commerce technology?
5. What are some of the potential ethical, social, or political implications raised by the global reach of e-commerce technologies?

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UNIT -12: ONLINE MEDIA

Structure

12.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Explain the major trends in the consumption of media and online content, the major revenue models for digital content delivery, digital rights management, and the concept of media convergence.
- ✓ Identify the key factors affecting the online publishing industry.
- ✓ Examinethe key factors affecting the online entertainment industry.

12.1 ONLINE CONTENT

No other sector has been so challenged by the Internet and the Web than the contentindustries. The online content industries are organized into two major categories: theprint industries (newspapers, magazines, and books), and the entertainment industries,which includes television, movies, music (including radio), and games. Together,the online content industries in the United States are expected to generate revenuesof at least $23 billion in 2016. In this unit, we will look closely at publishing (newspapers, magazines, and books) and entertainment (television and movies, music and radio, and games) asthey attempt to transform their traditional media into digitally deliverable forms andexperiences for consumers, while at the same time earning profits. These industriesmake up the largest share of the commercial content marketplace, both offline andonline. In each of these industries, there are powerful offline brands, significant newpure-play online providers and distributors, consumer constraints and opportunities, a variety of legal issues, and new mobile technology platforms that offer an entirelynew content distribution system in the form of smartphones and tablet computers.

CONTENT AUDIENCE AND MARKET: WHERE ARE THE EYEBALLS AND THEMONEY?

In 2016, the average American adult spends around 4,300 hours each year consumingvarious media, twice the amount of time spent at work (2,000 hours/year). U.S. entertainment and media revenues (both online and offline) in 2015were estimated to be $262 billion, and they are

expected to grow at a compound rateof 6% annually to 2020. Sales of tablets and smartphones have created new revenuestreams for entertainment and media firms as consumer behavior changes in response to the new technologies. Content is no longer tied to physical products and can be

delivered over the Internet from cloud servers to multiple mobile devices, reducingcosts for consumers. Currently, online digital entertainment and media revenue is 9%of total entertainment and media revenue, or an estimated $23 billion. Millennials, thegeneration of people born between 1980 and 2000 (sometimes referred to as DigitalNatives), are often thought to consume media very differently from their parents and Baby Boomers.

Media Utilization: A Converging Digital Stream

The proliferation of mobile devices—tablets and smartphones—has led to an increasein the total amount of time spent listening to radio, watching TV and movies, andreading books, newspapers, and even magazines. Internet mobile and desktop accountfor over 60% of total media time spent. While the number of hours of TV viewing usedto be far larger than Internet usage, since the development of mobile devices, timespent on desktops plus the mobile Internet is now expected to consume 5.7 hours compared to 4.15 hours spent watching television on a TV in 2016. On the other hand,a great deal of Internet usage is watching time-shifted television shows! In 2016, over165 million Americans will use their computers and/or mobile devices to watch televisionshows, over 50% of the general population. Therefore, the distinction betweenInternet usage and television usage is not easy to make. The method of transmission

is just different: cable TV versus the Internet. The Internet, television, and moviesare converging into a single digital stream. Well over 80% of television viewers multitask while watching television,usually using a smartphone or tablet computer, texting with friends, reading e-mail,

searching the Web, or visiting social networks, activities which have nothing to do withwhat's happening on the TV screen.

Internet and Traditional Media: Cannibalization versus Complementarity

Several studies reveal that time spent on the Internet reduces consumer time availablefor other media. This is referred to as cannibalization. The alternative argument is that the Internet and traditional media are complementary andmutually supportive rather than substitutive. True, there

has been a massive shift of thegeneral audience to the Web, tablets, and smartphones, and once there, a large percentageof time is spent on viewing content. Yet, more recent data finds a more complexpicture. Despite the availability of the Internet on high-resolution tablet computers, television viewing remains strong, video viewing on all devices has increased, and thereading of all kinds of books, including physical books, has increased. New television setsare Internet-enabled, allowing consumers to use the Internet to view TV shows on theirtraditional TVs. Total music consumption measured in hours a day listening to music has increased even as sales of CDs have drastically declined; likewise, movie consumptionhas increased even as DVD sales also decline markedly. The impact of the Interneton media appears to be increasing the total demand for media, including stimulatingdemand for products like books. The overall pattern is that physical products like CDsand DVDs are being replaced by digital versions delivered on computers, tablets, and smartphones either as downloaded content or as streaming services.

DIGITAL RIGHTS MANAGEMENT (DRM) AND WALLED GARDENS

Digital rights management (DRM) refers to a combination of technical (both hardwareand software) and legal means for protecting digital content from unlimitedreproduction and distribution without permission. DRM hardware and softwareencrypts content so that it cannot be used without some form of authorization typicallybased on a payment. The objective is to control the uses of content after it hasbeen sold or rented to consumers. Essentially, DRM can prevent users from purchasingand making copies for widespread distribution over the Internet without compensatingthe content owners. While music tracks in the iTunes Store were originally protected by DRM, in 2009, Apple abandoned the practice because of user objections,and because Amazon had opened an online music store in 2007 without any DRMprotections, with the support of music label firms, who came to realize that DRMprevented them from exploiting the opportunities of the Internet and perhaps evenencouraged an illegal market. Streaming content services are inherently difficult tocopy and re-distribute. Movies streamed from Netflix are technically difficult for the average user to capture and share although new apps like Meerkat and Periscope(Twitter) make live re-streaming very easy even if the quality is low. Likewise, musicstreamed from Pandora is cumbersome to record and share. Streaming services,

includingboth Apple and Amazon, use a kind of DRM called a **walled garden** to restrict thewidespread sharing of content. They do this by tying the content to the hardware,operating system, or streaming environment. E-books purchased from Amazon can only be read on Kindles or Kindle apps and Kindle books cannot be converted to otherformats. By locking the content to a physical device, or a digital stream with no localstorage, the appliance makers derive additional revenues and profits by locking customersinto their service or device and satisfy the demands of content producers tobe fairly compensated for their work. Google's YouTube identifies and tracks copyrightedmusic and removes it if music labels have not granted permission, and offers owners the revenue from advertising if they choose to let the music remain on thesite.

MEDIA INDUSTRY STRUCTURE

The U.S. media content industry prior to 1990 was composed of many smaller independentcorporations specializing in content creation and distribution in the separateindustries of film, television, book and magazine publishing, and newspaper publishing.

During the 1990s and into this century, after an extensive period of consolidation,huge entertainment and publishing media conglomerates emerged.The U.S. media content industry is still organized largely into three separate verticalstovepipes: print, movies, and music. Each segment is dominated by a few keyplayers, and generally there is very little crossover from one segment to another. Forexample, newspapers typically do not also produce Hollywood films, and publishingfirms do not own newspapers or film production studios. The purchase of the *Washington Post* in 2013 by Jeff Bezos, the founder of Amazon, and an Internet mogul inhis own right, was an anomaly. Even within media conglomerates that span severaldifferent media segments, separate divisions generally control each media segment.

In the past, we have not included the delivery platform firms, such as Comcast,Time Warner Cable, AT&T, Verizon, Sprint, and Dish Network, in this analysis becausein general they did not focus on the creation of content but instead just movedcontent produced by others across cable, satellite, and telephone networks. However,within the last several years, this has begun to change. Comcast led the way withthe acquisition of a majority interest in NBC Universal. AT&T's proposed merger with Time Warner and Verizon's proposed purchase of Yahoo, along with its previousacquisition of AOL, are signs that the telecommunications companies are

moving intothe content and distribution market, as well as the Internet advertising industry, ina major way.

MEDIA CONVERGENCE: TECHNOLOGY, CONTENT, AND INDUSTRY STRUCTURE

Media convergence is a much used but poorly defined term. There are at least threedimensions of media where the term convergence has been applied: technology,content (artistic design, production, and distribution), and the industry's structure as awhole. Ultimately for the consumer, convergence means being able to get any contentyou want, when you want it, on whatever platform you want it—from an iPod to aniPad, Android phone, or home PC, or set-top device like Apple TV.

Technological Convergence

Convergence from a technology perspective **(technological convergence)** has to dowith the development of hybrid devices that can combine the functionality of two ormore existing media platforms, such as books, newspapers, television, movies, radio,and games, into a single device. Examples of technological convergence include theiPad, iPhone, and Android ("smartphones") that combine telephone, print, music,photos, and video in a single device.

Content Convergence

A second dimension of convergence is **content convergence**. There are three aspectsto content convergence: design, production, and distribution.

There is a historical pattern in which content created in an older media technologymigrates to the new technology largely intact, with little artistic change. Slowly,the different media are integrated so that consumers can move seamlessly back andforth among them, and artists (and producers) learn more about how to deliver contentin the new media. Later, the content itself is transformed by the new media as artistslearn how to fully exploit the capabilities in the creation process. At this point, content convergence and transformation has occurred—the art is different because of thenew capabilities inherent to new tools. For instance, European master painters of thefifteenth century in Italy, France, and the Netherlands (such as van Eyck, Caravaggio,Lotto, and Vermeer) quickly adopted new optical devices such as lenses, mirrors,and early projectors called *camera obscura*that could cast near-photographic quality images on canvases, and in the

process they developed new theories of perspectiveand new techniques of painting landscapes and portraits. Suddenly, paintings took onthe qualities of precision, detail, and realism found later in photographs.

A similar process is occurring today as artists and writers assimilate new digital andInternet tools into their toolkits. For instance, GarageBand from Apple enables lowbudgetindependent bands (literally working in garages) to mix and control eight differentdigital music tracks to produce professional sounding recordings on a shoestringbudget. Writers of books are beginning to think about video and interactive versionsof their books. Online newspapers are changing the news cycle to a 24-hour stream, producing their own video channels, and expanding user comment opportunities ontheir websites.

On the production side, tools for digital editing and processing (for film and television)are driving content convergence. Given that the most significant cost of contentis its creation, if there is a wide diversity of target delivery platforms, then it is wiseto develop and produce only once using technology that can deliver to multiple platforms.Generally, this means creating content on digital devices (hardware and software) so that it can be delivered on multiple digital platforms.

Industry Structure Convergence

A third dimension of convergence is the structure of the various media industries. **Industry convergence** refers to the merger of media enterprises into powerful, synergisticcombinations that can cross-market content on many different platforms andcreate new works that use multiple platforms. This can take place either throughpurchases or through strategic alliances. Traditionally, each type of media—film, text, music, television—had its own separate industry, typically composed of very largeplayers. For instance, the entertainment film industry has been dominated by a fewlarge Hollywood-based production studios, book publication is dominated by a fewlarge book publishers, and music production is dominated by four global record labelfirms.However, the Internet has created forces that make mergers and partnershipsamong media and Internet firms a necessary business proposition. Media industry convergence may be necessary to finance the substantial changes in both the technologyplatform and the content.

Traditional media firms who create the content generallydo not possess the core competencies or financial heft to distribute it on the Internet.

Technology companies that dominate the Internet (Google, Apple, Amazon, and Facebook)have the competency and wealth to pursue Internet channel strategies, but donot currently have the competencies needed to create content. Business combinationsand partnerships are made to solve these issues.While traditional media companies have not done well in purchases of Internetplatform companies, the technology owners such as Apple, Amazon, Facebook,Microsoft, and Google have generally avoided merging with media companies, andinstead rely on contractual arrangements with media companies to protect intellectualproperty rights and to create a business pricing model that both parties can accept.However, this pattern is changing. For instance, CBS Inc., a movie and televisioncontent producer, produces television shows for Netflix; Netflix, Hulu, and Amazonproduce and distribute their own original series; Google is producing original contentdesigned for Internet distribution on YouTube. Amazon created its own book imprint,Amazon Books Publishing, and entered the book publishing business. And in 2016, asnoted previously, telecommunications companies are joining the fray, with Verizon proposing to acquire Yahoo and AT&T proposing to merge with Time Warner. In thissense, the Internet is changing the media industry from what it was in the recent past.

In the end, consumers' demands for content anywhere, anytime, and on anydevice are pushing the technology and content companies toward both strategic alliancesand strategic conflicts in their search for advantage.

12.2 ONLINE PUBLISHING INDUSTRY

Nothing is quite so fundamental to a civilized society as reading text. Text is the waywe record our history, current events, thoughts, and aspirations, and transmit them toall others in the civilization who can read. Even television shows and movies requirescripts. Today, the U.S. publishing industry (composed of books, newspapers, magazines,and periodicals) is a $93 billion media sector based originally on print, andnow moving rapidly to the Internet and mobile delivery. The Internet offers the text publishing industry an opportunity to move toward a new generation of newspapers,magazines, and books that are produced, processed, stored, distributed, and sold overthe Web, available anytime, anywhere, and on any device. The same Internet

offersthe possibility of destroying many existing print-based businesses that may not be ableto make this transition and remain profitable.

ONLINE NEWSPAPERS

Newspapers in 2016 are the most troubled segment of the print publishing industry. U.S. newspaper industry revenues have shrunk from their high of $60 billion in 2000 toabout $30 billion in 2015. The newspaper labor force has roughly beencut in half over this period. The newspaper industry has been in an extended periodof digital disruption since the rise of the Web in 2000 and the emergence of powerfulsearch engines like Google, which allow consumers to search for news on any subjectwithout having to browse a physical newspaper or an online edition. Social media siteshave become a major source of unique visitors, who, unfortunately, do not browse fornews and usually stay on the newspaper's site for only a few moments to read a singlearticle. These fleeting visitors typically do not engage with the newspaper as a wholeor with its online ads. Even before the Internet and Web, newspaper revenue wasfalling due to the influence of earlier technologies like broadcast and cable television.In 2014, three of the largest newspaper organizations (Gannett, Tribune Company,and E.W. Scripps) spun off their newspaper operations as independent firms so they could focus on television and other media assets, including in some cases, successfuldigital properties. Newspapers will now be pure-play print and online enterprises andwill have to make it on their own without the protection of television or other mediaassets.

The striking growth of alternative pure digital news sources in the last five years,from Twitter and Facebook, to Vox, Vice, BuzzFeed, Reddit, and Huffington Post, posesadditional challenges. Online news sources are attracting millions of consumers everydaya nd steer potential newspaper readers—both online and offline—away from themost valuable front page of print and digital edition newspapers. The shift of consumers toward the mobile platform and social media deepens the potential for disruption in thenewspaper industry. Social media sites are playing a significant factor in directing trafficdirectly to specific newspaper articles, bypassing the newspaper's valuable front page,and increasingly, are providing their own original reporting and commentary by hiring professional journalists away from troubled newspapers. In 2015, the *New York Times,*along with nine other news media outlets, agreed as an experiment to embed a few ofits articles directly into Facebook's News Feed as a way to attract millions of new readers,and

hopefully convert them from free readers to paid digital subscribers. Facebook calls these news stories

Instant Articles. What started as an experiment has become a major source of readers for newspaper articles, but not the entire newspaper. Newspapers arenow hiring social media editors to follow trending topics and post articles to newsfeeds.Other news publishers are considering a similar move. The downside is that readersmight not ever return to the newspaper websites, which are the most lucrative for digitalnewspapers. Newspaper survival will depend on how fast newspaper organizations can transform themselves from print to digital, and how fast they can monetize the expandingaudience for news all the time, anywhere, on all devices. newspaper circulation revenues (subscriptionsplus newsstand sales) have declined 10% since 2000 to around $11 billion, printadvertising, which includes display ads, classified ads, and legal notices, has fallenprecipitously from a high of $48 billion in 2000 to $15 billion in 2015. Online advertisingin newspapers in the last year has shown weak growth, accounting for about$3.7 billion in revenue, and newspapers' revenues from online ads are still only 25%of print ad revenue, and only 12.5% of total revenue. The gains in online digital adrevenue are not large enough to compensate for the loss of print revenue. Only themusic industry has suffered a similarly devastating decline in revenue. The 15-year decline in newspaper revenues has resulted from four factors:

- The growth of the Web and mobile devices as an alternative medium for news andadvertising. The movement of consumers to an online life style has drained billionsof ad dollars (including classified ads) from the printed newspaper. The same hasnot been true of television advertising as we will discuss later in the chapter. Evenradio advertising has stood up well to the digital revolution.
- The rise of alternative digital sources for news, commentary, feature stories, andarticles.
- The difficulty of traditional newspaper firms and their managers to develop suitablebusiness and revenue models that could survive and even prosper on the Internet,and the mobile/social platform.
- The rise of social media, and its role in directing traffic to newspaper content, haschallenged newspapers to change their business model to accommodate changesin consumer behavior and technology.

MAGAZINES REBOUND ON THE TABLET PLATFORM

The Internet and the Web did not have much impact on magazine sales at first, inpart because the PC was no match for the high-resolution, large-format pictures foundin, say, *Life* or *Time*. However, as screens improved, as video on the Web becamecommon, and the economics of color publishing changed, print magazine circulationbegan to plummet and advertisers turned their attention to the digital platform on theWeb, where readers were increasingly getting their news, general-interest journalism,

and photographic accounts of events. Magazine newsstand sales have also declinedsignificantly since 2001. Yet special-interest, celebrity, homemaking, and automobilemagazines remained stable. News magazines like *Time*, *Newsweek*, and *U.S. News andWorld Report* have been the hardest hit. In contrast, special-interest, celebrity, fashion, lifestyle, and automobile magazines have remained relatively stable.

Magazines have responded to declining sales of physical magazines by developingdigital replica magazines—fairly close copies of the physical magazine. Total U.S. revenuesfrom subscriptions and newsstand sales of magazine were around $28 billion in2015, down about 4% from 2014. Ad revenues constituted about $18 billionof the total. The good news for magazines is that digital ad revenues are increasing,and accounted for over $4 billion in revenue in 2015. Unfortunately, print advertising (about $14 billion) is expected to remain relatively flat through 2020. The increasing digital revenue is not quite enough to compensate for thedecline in print ad revenue. One possible solution is to begin charging a subscription

fee for access to the digital editions, which currently are often free. *The New Yorker*,perhaps the most prestigious magazine in the United States, is also one of the mostwidely read, with 1 million print subscribers and 13 million unique visitors to itswebsite. In 2014, the magazine introduced a metered paywall. Some articles are free,but frequent readers will be charged an annual subscription fee. In2016, *The New Yorker* launched a new iPhone app called The New Yorker Today that isfree to download and use for one month, but thereafter switching to the same metered model used for its website. Like newspapers, magazines are experimenting with differentrevenue models in an effort to monetize the rapidly growing tablet audience. Mostmagazines participate in Apple's iPad Subscription Service, which allows magazinesto offer subscriptions from within their app and have the transaction processed by theApp Store

billing system. Publishers set the price, and customers can subscribe withone click. Apple keeps 30% of the transaction. Publishers can also direct app readers to their website for a subscription, in which case Apple does not make any fee. Virtualstorefronts such as Google Play have helped publishers grow their digital subscriberbase. In 2015, Apple introduced its News app. Magazines such as *Time* and 75 othersprovide articles in an effort to capture a younger, mobile audience.Despite the shrinkage of print subscription and newsstand sales in the past fewyears, the total magazine audience size increased by over 6% in 2015, due entirely togrowth of digital magazines, especially mobile web editions, and the percentage of adults who read digital edition magazines has more than quadrupled since 2011. Another study found that over 40% of those surveyedhad read an average of 2.5 digital magazine issues in the past month. More than 35% of tablet computer owners read magazine contentonce a week, and there are an estimated 1,200 magazine apps for mobile readers.Popular websites like Pinterest, an image-collecting site that attracts millions ofviewers, and Facebook, Yahoo, and Twitter are among the largest drivers of traffic to digital magazines. The widespread adoption of tablet computers has helped createthe visual Internet, where glossy magazine publishers, who are inherently orientedto richly detailed color photography, can display their works and advertisements togreat advantage.

With hundreds of popular online magazines to choose from, magazine aggregators like Zinio, Texture (formerly Next Issue Media), Magzter, and Flipboard make it possiblefor customers to find their favorite magazines using a single app. A **magazineaggregator** is a website or app that offers users online subscriptions and sales of manydigital magazines.

E-BOOKS AND ONLINE BOOK PUBLISHING

In April 2000, Stephen King, one of America's most popular writers, published anovella called *Riding the Bullet*. This novella was only available as an e-book. King wasthe first major fiction writer to create an e-book-only volume of a new work. King'spublisher, Simon & Schuster, arranged for sales online through online retailers suchas Amazon. In the first day, there were 400,000 downloads, so many that Amazon'sservers crashed several times. More than 600,000 downloads occurred in the first week.

While Amazon gave the book away for free in the first two weeks, when it began charging$2.50 for a 66-page novella—about the same price per page as a standard King hardcovernovel—sales continued to be brisk. This experiment showed Simon & Schuster,and Amazon, that there was a

mass market for e-book popular fiction. Previous efforts to create a popular e-book had all failed. For publishers, it meant their entire back listof older books suddenly had monetary value if they could be sold as e-book editions.

Ten years later, on April 15, 2010, Amanda Hocking, an unknown and unpublishedwriter from Austin, Minnesota, uploaded one of her vampire novels, *My BloodApproves*, to Amazon's self-publishing site, and later to the Barnes & Noble e-bookstore. Her novels had been rejected by many of the publishing houses in New York.By March 2011, she had sold more than 1 million copies of her e-books, which generallysell for 99 cents to $2.99, and earned more than $2 million. In 2012, Hocking waslisted as one of the Amazon 99 cent millionaires. In 2013, Hugh Howey's self-published science fiction e-book *Wool* sold more than 500,000 copies and earned him more than$1 million in royalties and film rights. Over 40% of Amazon's top 100 selling e-booksare now self-published, generating around 14% of e-book revenue. The Big Five publishers,in contrast, sell less than 25% of Amazon's e-books although they generateover 40% of the revenue with prices around $14.00/per e-book. Twenty-three so-called"indie" (independently published) books have sold more than 250,000 copies, and fourIndie authors have sold more than 1 million copies of their books, according to Amazon. Admittedly these success stories are rare, and the vastmajority of Indie authors in 2016 are unable to make a living, let alone $1 million.The book publishing industry's experience with the Internet is very different fromthe newspaper and magazine industries. E-book editions of fiction and non-fictionbooks (so-called trade books) have been very successful, yet printed book sales havenot collapsed and have remained about the same over time. Professional books, which includes college textbooks, remain almost entirely printed for a variety of reasons.

Book publishing revenues have been stable over the last five years. In 2015, the U.S.book publishing industry generated just under $28 billion in revenue and sold 2.7billion books (both e-books and printed books). Trade books (general fiction and nonfiction)generated $15.8 billion in revenue on sales of about 2.5 billion books (AAP,2016).

In the space of a decade, e-books have gone from an unusual experiment by amajor author, to an everyday experience for millions of Americans, and an excitingnew market for authors, changing the process of writing, selling, and distributingbooks. U.S. e-books sales in 2016 are expected to be $7.6 billion, 26% of all consumerbook sales. Although e-book sales are expected to continue

increasing through 2015,e-book sales are not expected to continue to grow nearly as fast as they did in previous years. Accounting for e-book sales in the mix of total book sales is difficult because around 30% of the books sold on Amazon do not have ISBNs (InternationalStandard Book Numbers), and therefore, are not counted by the publishingindustry, whose books always have ISBN identifying numbers. Industry-based reportson e-book sales only include those published with ISBNs, and indie books generally do not have ISBNs. Analysts estimate that 25% of Ama-zon's e-book sales result from indie e-books. The industry estimates presented here likely underestimate e-book sales. An entire new channel for self-published authorsnow exists, a channel not controlled by the major publishing companies and theirprofessional editors. The book distribution market has been disrupted and yet in2016 it is apparent that the major publishing firms still maintain their positions as thedominant source of book content. In addition, while bookstore chains like Borders andWaldenbooks have disappeared and while Barnes & Noble faces earnings challenges, small independent bookstores have grown 27% since 2009 to over 2,000 stores. Andwhile the Kindle platform unleashed a torrent of indie manuscripts from thousandsof would-be writers, only a few well-publicized authors have achieved popular successand a living income. Unlike the newspaper business, it's too soon to declare that thebook industry has been digitally destroyed or wounded, and some reason to believe that printed books will continue to be with us long into the future.

E-Book Business Models

The e-book industry is composed of intermediary retailers (both brick-and-mortarstores and online merchants), traditional publishers, technology developers, devicemakers (e-readers), and vanity presses (self-publishing service companies). Together,these players have pursued a wide variety of business models and developed manyalliances in an effort to move text onto the computer screen.

There are five large publishers that dominate trade book, education, and religiousbook publishing. These traditional publishers have the largest content libraries forconversion to e-books and they produce over 80% of new book titles in a year. In thee-book marketplace, the large publishers started out using a **wholesale model** ofdistribution and pricing, in part because this is the same model they used with hardcover books. In this model, the retail store pays a wholesale price for the book andthen decides at what price to sell it to the consumer. The retailer

sets the price with,of course, some kind of understanding with the publisher that the book will not begiven away for free. In the past, the wholesale price was 50% of the retail price. Aretailer would pay the publisher a $10 wholesale price and mark it up to a $20 retailprice. However, retailers could also determine to sell the book at a much lower saleprice, say $5, as a way to attract readers to the store or as a close-out sale. Brick-and mortar stores had a vested interest in selling most books above their wholesale cost.With e-books, publishers discovered that some online retailers like Amazon and Applemight sell books below cost in order to encourage customers to purchase their e-bookreader devices or to sell them other goods.

In the case of e-books, publishers sought to keep their prices high enough so asnot to discourage sales of hard cover books, which typically sell for $26. Generally, thismeant publishers wanted e-books to sell at a retail price of $12.99 to $14.99, dependingon the popularity of the book and the stage in the product life cycle (months sincefirst publication). E-book distributors like Amazon were charged a wholesale price of about $9 and were expected to mark up the product to around $12.99 to $14.99 or more.

Instead, Amazon chose to sell e-books for $9.99, at or below cost, in order to attractbuyers to its content store to buy Kindles, and to attract new customers to its onlineretail store. Amazon lost $1 to $3 on every e-book sold, but recouped the money byselling Kindles for hundreds of dollars, and from additional sales of other products.

With Amazon selling e-books at $9.99, the lowest prices on the Web, publishers wereforced to sell their e-books on all other websites at the $9.99 Amazon price. Using thisstrategy, Amazon not only sold millions of Kindles but also sold 90% of all e-book titleson the Web in 2010 and 2011. Amazon had a near monopoly on e-books.

Publishers opposed Amazon's policy as debasing the perceived value of bothphysical and digital books, and as a mortal threat to the publishers who could notsurvive if their e-books were priced at $9.99 across the Web. They claimed Amazonwas engaging in predatory pricing, designed to destroy traditional book publishers. In2010, five of the largest publishers secretly met with Steve Jobs and Apple. They agreedto a new pricing model called the agency model. In the **agency model**, the distributor is an agent of the publisher, and can be directed to sell e-books at a price determinedby the publisher, around $14.99 and higher for certain titles. In return for a 30% commission,Apple agreed to support this model, as did Google, neither of whom

werecomfortable watching as Amazon dominated one of the hottest areas of web contentsales. In these meetings, publishing executives discussed a common pricing strategy.

The agency model temporarily turned the tables on Amazon: it now had to chargewhatever price the publishers wanted or the publishers would not sell Amazon anybooks (they would not choose Amazon as an agent for their products). A result of theagency model was that Amazon's prices on e-books rose to the publisher desired levels,and its market share fell to 60% in 2012. Apple, Google, Barnes & Noble, and the five major publishers were delighted. The Justice Department was not delighted: it suedthe five publishers and Apple for price fixing in violation of antitrust laws. All five ofthe publishers settled, but Apple refused to settle and asked for a trial before a judge.

In 2013, the United States District Court found that Apple had engaged in price fixing,not because of its agency pricing model, which is quite common throughout retailtrade, but because of its "most favored seller" clause in its agreements with publishers,which had the effect of discouraging other sites (like Amazon) from selling e-books for less than Apple's iBooks Store price. In addition, the publishers and Apple conspiredto act in concert, rather than as individual publishers. Under the agreements,the publishers, not Amazon, would determine prices on Amazon. If publishers soldtheir books on Amazon for $9.95, then publishers would have to sell their e-books atthe iBooks Store for $9.95. The court found that Apple and the book publishers' planwould result in less price competition, and higher prices, by enforcing a single higher price on all online distributors and e-books. In the field of antitrust, less competitionand higher prices for all is considered a cardinal violation of the law. After the ruling,e-book prices on Amazon have fallen to an average of $9.99, with some older titles farless, with limited discounting, and its market share rose to 65%. In August 2014, Appleagreed to pay a $450 million fine to compensate consumers for its price fixing behavior.

While the ruling prevents Apple from fixing prices of e-books, it does nothing to solvethe issues surrounding Amazon's dominance of the e-book marketplace. Publisherswill need to each reach independent marketing agreements with Amazon, one byone. Critics of the court case believe Amazon's market power will force publishers tosubmit to Amazon's price terms.

In May 2014, following court rulings against the publishers, Amazon and theHachette group tried to negotiate an agreement on pricing. To demonstrate its marketpower and strengthen its negotiating position, Amazon withdrew all Hachette booksfrom its website, leading to author-

organized protests. In November 2014, Hachetteand Simon & Schuster (one of the largest publishers in the United States) agreed onterms with Amazon that allow the publishers to set the prices of their books (the agency model) but allow Amazon to offer incentives to publishers to reduce prices onselected books, and provide for publisher payments to Amazon for listing their books. Today, prices on e-books as a result are highly variable,ranging from $9.95 to $16.95.

12.3 ONLINE ENTERTAINMENT INDUSTRY

The entertainment industry is generally considered to be composed of four traditional,commercial players and one new arrival: television, radio broadcasting, Hollywoodfilms, music, and games (the new arrival). Together, these largely separate entertainmentplayers generated $144 billion in annual U.S. revenue in 2015. This includes bothdigital and traditional format revenues. By far, the largest entertainment producer is television (broadcast, satellite, and cable), and then motion pictures, followed byvideo games (both stand-alone and online games), radio, and music. While online, computer,and console revenues have grown to be larger than movie box office revenues(about $11 billion), total Hollywood film revenues dwarf the game industry whenother sources of movie revenue are added such as streaming, DVD rental and sales,and licensing (total revenue related to motion pictures is $29.2 billion). Radio remains a strong revenue producer aided in part by the growth of Internet radio services likeSpotify and Pandora, but is still largely reliant on FM and AM broadcast technologies, especially in automobiles. Recorded music is the smallest of the major players at $7billion, half of its size ten years ago.

Along with the other content industries, the entertainment segment is undergoinga transformation brought about by the Internet and the extraordinary growth of mobiledevices. Several forces are at work. Mobile devices, coupled with the easy availabilityof entertainment content now offered by Amazon, Netflix, and many others, havechanged consumer preferences and increased demand for such content, whether in subscription or a la carte pay-per-view forms. Social networks are also spurring thedelivery of entertainment content to desktop and mobile devices. Social networksare rapidly adding video and live video-streaming to their services, as well as providinga platform for sharing TV and movie experiences. The iTunes store and Amazonprovide successful download music services where users pay for tracks and

albums.Music subscription services like Pandora, Spotify, and Apple Music have millions ofsubscribers. Both kinds of services—download and streaming—have demonstrated thatmillions of consumers are willing to pay reasonable prices for high-quality content,portability, and convenience. The growth in broadband has obviously made possibleboth wired and wireless delivery of all forms of entertainment over the Internet,potentially displacing cable and broadcast television networks. Closed platforms, likethe Kindle and streaming services like Netflix, also work to reduce the need for DRM.

Streaming music and video are inherently protected because the content has beenin the past difficult to download to a computer (similar to cable TV). This situationis changing with the advent of streamed video apps like Periscope that can capturelive video from a PC or TV screen. All of these forces have combined to bring about atransformation in the entertainment industries.

In an ideal world, consumers would be able to watch any movie, listen to anymusic, watch any TV show, and play any game, when they want, and where theywant, using whatever Internet-connected device is convenient. Consumers would bebilled monthly for these services by a single provider of Internet service. This idealizedversion of a convergent media world is many years away, but clearly this is thedirection of the Internet-enabled entertainment industry, in part because technologywill enable this outcome, but also because of the emergence of very large-scale, integratedtechnology media companies like Amazon, Google, Apple, and Netflix. Manyanalysts believe the large entertainment media giants of the future will be technologycompanies that have moved into the production of content.

ONLINE ENTERTAINMENT MARKET SIZE AND GROWTH

Most noticeable is the extraordinary growth ofonline TV and movies, driven in large part by adoption of mobile devices, as well as thesuccess of TV and movie streaming sites. Other forms of online entertainment will alsocontinue to grow, but at single-digit rates. As the Internet takes on the distribution of TVshows and movies, the role (and revenue) of cable television delivery systems declines. There will be some interesting changes by 2019. Online TV and movies will grow very rapidly (by more than 15% annually), while online games and Internet radio remain relatively stable generators of revenue, declining in significance when comparedto TV and movies.

TELEVISION

In the television industry in 2016, viewers have gone mobile, Internet streaming and downloading distributors like Netflix and Apple have gained market power vis-à-vis TV and movie production firms, and cable television systems are losing ground to Internet and mobile app delivery of content. Streaming services provided by firmslike Netflix, Hulu, and Amazon, and convenient downloading of movies and entireTV series, have created powerful alternatives to traditional cable television deliverysystems. Cable distribution systems are challenged as the Internet offers alternative,unbundled, a la carte access to TV programs.

Linear TV—watching a TV series overan entire season as instalments—is being supplanted by **binge watching** of entireseasons online over a few days. This is not possible with linear TV on cable or broadcast platforms. Contrary to expectations, the big TV screen in the home is as popularas ever, supported by social networks that buzz with chat about what's on TV rightnow, and Internet-connected smart TVs. In 2016, over 165 million Americans watchTV online, over 50% of the American population. Increasingly,the TV household is a cross-platform phenomenon. Every day, Americans watch about4 hours of TV on traditional TV sets, but spend 5¾ hours online using a computer or mobile device. Millennials (ages 16–34) are also avid users of streaming TV services,with over 80% of respondents in that age group in a recent survey reporting that theywatched TV programming using such services. Streaming hasreplaced downloading as the preferred consumer viewing platform. Netflix is themarket leader in streaming TV and movies, with revenue of $6.7 billion in 2015.The television industry is in the midst of a transition to a new delivery platform—the Internet via dedicated streaming devices such as Apple TV, Google Chromecast,Roku, and Amazon Fire TV, as well as smartphones and tablet computers.As a result, the cable and satellite TV distribution model has been challenged.

This transition closely follows an earlier but related transition to DVRs and time shifting by consumers who no longer were constrained by television executives' programmingand scheduling decisions. The current transition to Internet and especiallymobile delivery of television is not leading to a decline in traditional televisionviewing, which has in fact increased slightly. The new platform is changing how,when, and where consumers can watch TV. Cloud computing, the storage and streamingof content from large Internet datacenters rather than on individual personaldevices, has created a large shift away from ownership of content, and a focus instead on access to content anywhere, anytime, from any device as a streaming service.

FEATURE-LENGTH MOVIES

In Hollywood, the transition to a digital delivery platform is well underway, and theindustry is poised to maintain its revenue stream based on new digital platforms. Asconsumers have become fully connected to broadband networks on mobile, desktop,and home TVs, Hollywood has responded with a host of new viewing options. As aresult, consumer spending on movie entertainment, whether physical or digital, hasbeen stable, with significant growth in several digital platforms.

The key to the success of Hollywood studios in the digital era is their control overoriginal, full-length feature production, and control over who will distribute theirmovies, when, and how. Distributors—whether Internet providers or cable systems—need to meet the terms of Hollywood studios. The dominance of Hollywood studiosin content creation is being challenged, but for now still seems secure. An estimated120 million Americans will watch movies online in 2016, growing to 145 million in 2020.

Aside from box office theater revenues, the movie industry derives revenue fromboth physical formats (DVDs) and digital formats like selling movies for download(called Electronic Sell-Through or EST), selling access on cable or the Internet to specificmovies a la carte (called Internet Video On Demand (iVOD)), and subscription streaming over the Internet.

MUSIC

Perhaps no other content industry has been so severely disrupted by the Internet andnew business models as the recorded music industry. Revenues for the industry havefallen by more than half since 1999. By 2010, revenues stabilized and since then, haveremained relatively flat. Global sales of music grew by 3% in 2015 to around €14.1billion, compared to €25 billion in 1999.

Digital revenues now make up about 70% of all U.S. music revenues (about $4.8billion). Revenues from CDs continue to decline but still accountfor 30% of the industry's revenue (about $2 billion). Streaming music sales from adsupported streaming and subscription streaming sites now total $2.4 billion, or about34% of industry revenue. Digital revenues have not made up for the loss of revenuecaused by the drastic decline in CD sales. Revenue from vinyl LP albums grew 32%in 2015, to $416 million. Vinyl is escaping the niche market of hobbyists, in part due to its superior sound reproduction when compared to digital tracks, and a growingnumber of groups are issuing vinyl editions alongside CD editions although these areonly 7% of industry revenues.

For most of its history, the music industry depended on a variety of physical media to distribute music—acetate records, vinyl recordings, cassette tapes, and finallyCD-ROMs. At the core of its revenue was a physical product. Since the 1950s, that physicalproduct was an album—a collection of bundled songs that sold for a much higherprice than singles. The Internet changed all that when, in 2000, a music service called Napster begin distributing pirated music tracks over the Internet to consumers usingtheir PCs as record players. Despite the collapse of Napster due to legal challenges,hundreds of other illegal sites showed up, resulting in music industry revenues fallingfrom $14 billion in 1999 to around $7 billion in 2015. The appearance of powerfulmobile media players beginning in 2001 that could be connected to the Internet, like Apple's iPod, and later, the iPhone and iPad, and then the stunning growth of musicstreaming sites, further eroded sales of CD albums. Streaming has fundamentallyaltered the sale of physical music formats because it is no longer necessary to "own"a physical unit in order to hear the music consumers want.

The music industry initially resisted the development of legal digital channelsof distribution, but ultimately and reluctantly struck deals with Apple's new iTunesStore in 2003, as well as with several small subscription music services, for onlinedistribution. By the time streaming music services appeared on the scene in 2006,the music industry had dropped its opposition to digital formats, and quickly reached

agreements with Pandora, Spotify, and others to stream music on their subscriptionand "free" ad-supported services in return for fees. At that time, digital downloads oftracks and albums and fees from streaming music services were widely perceived asthe savior of the music industry, which was losing sales to piracy and file sharing. Nevertheless, revenues from these sources pale in comparison to revenues that used to be produced by CD albums.

charge what the market will bear.

GAMES

In July 2016, the Pokemon Company (partly owned by Nintendo) released its freeaugmented reality game, *Pokemon GO* for Apple iOS and Android phones.*Pokemon GO* overlays exotic monsters on the phone's screen. The aim is tolocate, capture, and train these characters. Users are rewarded with stardust (virtualcurrency). The game identifies PokeStops, points of interest or historic locations,where users can pick up Poke Balls used to capture Pokemon, and Pokemon

gyms,where users can train their monsters, capture others, and receive rewards. There areplenty of opportunities to buy virtual tools to speed up the capture of Pokemons (PokeBalls cost $1 in the store but are free at PokeStops), and advertisers can pay to havetheir streets or businesses become a PokeStop, attracting huge crowds of players andpotential customers. In one month *Pokemon GO* became the most popular downloadfrom iTunes and Google Play. In two months, *Pokemon GO* had 200 million playersworldwide and generated over $300 million in revenue. No one knows how long the *Pokemon GO* craze will last, but it provides an example of how the online gaming worldis changing from its initial focus on console and PC desktop gaming to mobile phonegaming and professional e-sport gaming as a stadium and spectator sport.Console gaming used to be the heart of the digital gaming industry, and still isfrom a revenue perspective. But this changed rapidly with the introduction of smartphonesand tablets, as well as social and casual gaming, which do not require usersto purchase an expensive console or packaged software. Smartphones and tablets have ushered in an era of free-to-play and $1.99 game apps and much simpler gamescenarios that do not require millions of investment dollars to develop. Well over 200million Internet users play some kind of game online in the United States, and thatnumber swells to over 400 million worldwide. In 2016, over 180 million Americans willplay games on mobile devices (smartphones and tablets), over three times as many who play games on game consoles. Casual PC gamers are twice as common as consolegamers.

12.4 CASE STUDY : NETFLIX

In the Netflix online television comedy-drama series, *Orange is the New Black*,the lead character is Piper Chapman (Taylor Schilling), a recently engagedblond New Yorker sent to a federal prison for a crime committed years before.Critically acclaimed, and widely followed, *Orange* follows in the footsteps ofNetflix's earlier successful online TV series *House of Cards*, a political insider's taleof Washington politics starring Kevin Spacey. *House of Cards* was the first-ever onlinetelevision series to win an Emmy award (for best director). *Orange* won three Emmycreative awards in 2014. In 2014, Netflix racked up 31 nominations, and in 2015, 34 nominations. In 2016, the number soared to 56 nominations, making Netflix the thirdleading platform/network behind HBO (96) and FX Networks (38). Besides returningseries like *Orange is the New Black*, its new series *Making a Murderer* and the documentary*What Happened, Miss*

Simone? each scored six nominations. Netflix is quicklybecoming the non-cable alternative to cable TV. By producing its own content, Netflix
is able to differentiate itself from cable TV shows and attract new subscribers lookingfor new shows, not retreads from the cable networks. However, original productionsare much more expensive to produce than licensing existing content.

While Netflix does not release the number of viewers for any of its original TVshows, executives credit these shows with driving the streaming service to a record 83 million worldwide subscribers by the second quarter of 2016 (45 million in theUnited States where 60% of its subscribers come from). In 2016, Netflix announced itspresence in all foreign markets except China, and that it had gained 3.5 million newsubscribers outside the United States. Its goal is to hit 100 million subscribers by 2017.

Its subscriber growth rate in the United States has slowed considerably in the last fewyears because its market penetration is so high. Netflix shares have increased by over8,000% since it first went public in 2002, but it has hit a rough spot in 2016, with thestock market punishing the company for failing to achieve expected subscriber growthtargets in the United States, amid concerns about growing competition in the streamingmarketplace. Many subscribers dropped the service in 2016 because Netflix raised its prices and Amazon grew its own video streaming service. It is currently selling atover 300 times its projected earnings, much more expensive than Google, Facebook,or other tech companies because it is still perceived as a growth company. Revenuesin 2015 were $6.7 billion, up 22% from 2014, but profits were a paltry $122 million,less than half the previous year. Netflix's profit margin is less than 2%, far less than a
retailer like Walmart (4% margin).Netflix got its start as a mail order company renting DVDs of older Hollywoodmovies using the postal system. Founded by two Silicon Valley entrepreneurs, MarcRandolph and Reed Hastings, in 1997, the company started by renting individual copies of 900 DVD movie titles and delivering them to customers by postal mail. In2000, it switched to a subscription model where customers could receive DVDs on aregular basis for a monthly fee. By 2006, it had delivered its billionth DVD and becamethe largest subscription provider of DVDs. In 2007, Netflix began a video-on-demandstreaming service of movies although it still retains a DVD subscription business. In 2016, Netflix is the largest player in the movie and TV series streaming market, andconsumes over 35% of the U.S. Internet bandwidth to serve its customers.

Netflix is one of those Silicon Valley stories that might make a good movie, oreven a television series, because of its potential for disrupting the American televisionand movie landscape (or what's called premium video). It's a dream-come-truestory of accomplishment, pluck, innovation, and Internet technology. In a few shortyears Netflix created the largest DVD rental business in the country, then createdthe largest streaming video service. Today Netflix accounts for over 90% of digitalmovie streaming, while its chief streaming competitors, Amazon and Hulu, make up the remaining market. Netflix has created the largest database on consumer videopreferences and built a recommendation system that encourages consumers to seemore movies. Netflix is as much a technology company as a content company: it hasdeveloped its own proprietary video encoding system and distributes its video using over 1,000 servers in the United States located close to its customers to ensure highspeed and quality delivery. Netflix discovered that older TV series had strong nichefollowings and built a new model of "binge watching" where consumers could watchall the episodes of a series in several sittings. Netflix has entered the content creation business by developing original TV series. For this reason, Netflix is an example of convergencein the media industry where an Internet company becomes a media contentproducer. Other pure media companies have taken notice and begun to develop their own streaming services, but what they lack is a database of viewer preferences thatNetflix has developed over a ten-year period and which helps Netflix make recommendations to subscribers.

In the movie and TV business there are only two ways to make money: either ownthe content or own the pipes that deliver the content. All the better if you can do both.Netflix has become recognized as an important pipeline to a very large audience. Forinstance, Netflix has a deal with the Weinstein Company, a major American film studioand producer of ten Academy Award films, to become the exclusive subscription TV home for the film studio's content, beginning in 2016. This move puts Netflix into thesame league of premium channel distributors and in direct competition with othercable networks like HBO, Starz, Showtime, and A&E for the rights to show moviesabout eight months after their theater run is complete. Netflix also has a deal withWarner Brothers to be the exclusive Internet distributor of the Batman prequel *Gotham*,and with Twenty-First Century Fox in 2016 for the FX series *American Crime Story*.

In one possible ending scenario for the Netflix movie, the company challenges themuch larger cable television industry, which is based on an entirely different technologyand business model,

namely, selling expensive bundles of hundreds of TV channelsthat few people watch, then raising monthly fees faster than the rate of inflation.

Given Netflix's large national audience of streamers, the company makes new friendsin Hollywood and New York that are looking for ways to distribute their shows to anew online, mobile, and social world; Hollywood stretches the distribution windowso that Internet distributors like Netflix get the same treatment as cable systems byallowing them to show the latest movies and shows at about the same time as cablesystems. And the cable television industry is forced to retreat from its bundling practicesand offer customers the ability to select just those channels they actually watch.

Cable industry revenues plunge as a result. In this dream scenario, Netflix goes onto challenge the cable networks by producing its own original TV dramas, and addscomedy and documentaries to the mix. A story with a happy ending for Netflix! Buthappy endings happen mostly in Hollywood.

The outcome of this movie depends on how well Netflix can deal with some considerable challenges. For instance, one source of Netflix's poor profitability isthat the costs of content are very high, both purchased older series as well as newcontent, which is far more risky. The owners of older cable TV series and Hollywoodmovies charge Netflix for the privilege of distributing their content as much as theydo established cable TV networks. In 2016 Netflix reported streaming content obligationsto content producers of $12 billion! With $6.7 billion in gross revenue, it paid out $5.7 billion in payments to content owners (mostly cable networks) and productionstudios for original content. Netflix barely makes any profit. Netflix is, after all,mostly a database and delivery platform, and the company is in a constant biddingwar with both cable and Internet giants all looking for the same thing—popular TVseries with a built-in or potential audience. But content owners have wised up to thevalue of their backlist TV series and have raised their prices accordingly. Series just a year old are very expensive or non-existent. Netflix is paying hundreds of millions to Disney, Paramount, Lionsgate, and MGM to license hit shows and movies. As a result of content owners charging more for older cable shows, Netflix has taken themore risky option of developing its own original series. But this is very expensive aswell. The critically acclaimed *House of Cards* cost Netflix $100 million for 26 episodes,$4 million an episode. Newer shows like *Between*, *Narcos*, and *Bloodline* are running around $20 million a season. It's possible that Netflix does not scale, and that the moresubscribers it has and

the more it attracts them with original expensive content, theless profit it makes because the cost of doing business rises faster than revenue.A second challenge Netflix faces is the risk of creating new content. It's not asif wealthy Silicon Valley entrepreneurs can fly to Hollywood or New York with lotsof cash and simply purchase new content. As one pundit noted, this might lead to a mugging, but not a successful TV series or movie. Silicon Valley is generally not theplace to go if you're looking for story tellers, writers, producers, directors, talent agents,and cinematographers. Algorithms don't come up with new ideas for novels, plays,movies, or TV series, and they have not proven to be good at guessing what serieswill succeed in the future. Older series are proven series, and Netflix can identifywhich of its customers watched the series in previous years, and estimate the audience size, and whether new subscribers will be attracted by the re-plays. But whenit comes to new TV series, Netflix has tried to use its algorithms to predict what newseries its customers might be interested in with mixed results. Netflix has producedsome real winners according to critics, but it has also produced some losers thatdid not get critical acclaim like *Lillyhammer*, *Hemlock Grove*, *Bad Samaritans, RichieRich*, and *Mitt*. There has been only one tech company in history that was successful with content production for movies or television, and that is Pixar, which pioneeredcomputer-generated animated feature-length movies. It is impossible to know howwell Netflix's original content is performing because the company refuses to releasethis data. Nielsen has begun a rating service for Netflix shows. This service is paid for by the content producers who will base their charges in part on how many Netflixsubscribers stream their shows.

While Netflix stands out as a powerful Internet brand today, Netflix has many powerfulcompetitors. Netflix does not have unique technology. In fact, streaming technologyis widespread and well understood. The success of Netflix's streaming model hasattracted Amazon, Apple, Yahoo, Google, and content producers like Hulu and HBOto the fray. In 2015, Verizon announced a free, ad-supported mobile streaming service call go90, aimed at Millennials who routinely watch video on their smartphones. Someof these firms are tech firms with very large Internet audiences, strong brand names,and a good understanding of what their millions of online customers want.

Apple is the leader in downloaded movies where customers own or rent movies,and of course, it owns iTunes, the world's largest online media store for the purchase ofmusic, videos, and TV series. HBO, founded in 1972, is the oldest and most successfulpay television service in the

United States with over 140 million cable TV subscribers worldwide, and the originator of a long list of highly successful original TV series andmovies such as *Sex and the City*, *The Sopranos*, *The Wire*, *Game of Thrones*, and *TrueBlood*. If Netflix has a direct competitor on the creative front, it is HBO, a more traditionalprogrammer that does not use computer algorithms to design its content, but instead relies on the hunches and gifts of editors, producers, and directors to produce

its content.Netflix's competitors have very deep pockets. This means Netflix also has competitorsfor talent and the production of new content, and perhaps price pressure as well.Along with Hulu, Amazon has emerged as the biggest competitor to Netflix streaming.For instance, Amazon offers free streaming to its 60 million Amazon Prime customers, and has taken on HBO TV series to stream to Prime customers without additional fees.Amazon has also moved into original series production with *The Man in the High Castle,Transparent, Mozart in the Jungle*, and others, winning 16 Emmy awards in 2016. AppleiTunes and Amazon have far larger databases of subscribers and their preferences.

Google is actively pursuing long-form content creators for its video channel program.There is no cost to Google users because the service is ad supported.So another possible ending for the Netflix movie is that ultimately it can't competewith Apple, Google, Yahoo, Hulu, and Amazon, or the content producers like CBS andHBO Now, which have started their own streaming services. Generating a negativecash flow of $1 billion a year, Netflix may run out of investors who make up the difference.

Netflix can be imitated by its competitors, and its profitability reduced to lessthan shareholders can tolerate. Apple's 2015 revenue was a staggering $234 billion,30 times larger than Netflix, and it has a cash reserve of $234 billion. It is entirelywithin Apple's capabilities, or Amazon's or Google's, and others to develop a competingstreaming video service. Equally worrisome, major cable networks like CBS and NBC have started their own streaming networks for their original content. In July 2016, WallStreet finally got the message that Netflix was facing a slew of streaming competitors,and its stock fell over 30%.

12.5CHECK YOUR PROGRESS

1. What is a walled garden?
2. Define magazine aggregator.

3. What is a linear TV ?
4. What is a walled garden?

Answers to Check Your Progress

1. refers to a kind of DRM that uses proprietary file formats, operating systems, and hardware to control the use of content after initial sale
2. a website or app that provides subscriptions and sales of many digital magazines
3. watching a television series in instalments over an entire season
4. refers to a kind of DRM that uses proprietary file formats, operating systems, and hardware to control the use of content after initial saled

12.6 SUMMARY

In this unit, we looked closely at publishing (newspapers, magazines, and books) and entertainment (television and movies, music and radio, and games) as they attempt to transform their traditional media into digitally deliverable forms and experiences for consumers, while at the same time earning profits. These industries make up the largest share of the commercial content marketplace, both offline and online. In each of these industries, there are powerful offline brands, significant new pure-play online providers and distributors, consumer constraints and opportunities, a variety of legal issues, and new mobile technology platforms that offer an entirely new content distribution system in the form of smartphones and tablet computers.

12.7 Keywords

- **digital rights management (DRM) -** refers to the combination of technical and legal means for protecting digital content from unlimited reproduction without permission
- **walled garden -** refers to a kind of DRM that uses proprietary file formats, operating systems, and hardware to control the use of content after initial sale
- **technological convergence -** development of hybrid devices that can combine the functionality of two ormore existing media platforms into a single device
- **content convergence -** convergence in the design, production, and distribution of content

- **industry convergence -** merger of media enterprises into synergistic combinations that create and cross-market content on different platforms
- **Instant Articles -** a new Facebook feature that inserts selected articles from mainstream news outlets in a user'sNews Feed
- **Paywall -** paid subscription service
- **metered subscription -** provides access to a limited number of articles for free, but requires payment of asubscription fee once that limit is exceeded
- **magazine aggregator -** a website or app that provides subscriptions and sales of many digitalmagazinestime

12.8 SELF ASSESSMENT QUESTIONS

1. Describe the structure of the media content industry.
2. Wite the key factors affecting the online publishing industry.
3. How has the Internet transformed television viewing?
4. Which are the key factors affecting e-books and online book publishing?
5. Why is Netflix in competition with Apple, Amazon, and Google, and what strengths does Netflix bring to the market?

12.9 REFERENCES

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BLOCK 4 INTRODUCTION

In this block , we discuss social networks, auctions, and portals. What do social networks, auctions, and portals have in common? They are all based on feelings of shared interest and self-identification—in short, a sense of community. Social networks and online communities explicitly attract people with shared affinities, such as ethnicity, gender, religion, and political views, or shared interests,such as hobbies, sports, and vacations. Portals also contain strong elements of community by providing access to community-fostering technologies such as e-mail, chat groups, bulletinboards, and discussion forums.In Unit 14, we understand the environment in which the online retail sector operates today, explain how to analyze the economic viability of an online firm and Identify the challenges faced by the different types of online retailers. In unit 15 As with retail goods, the promise of online service providers is that they can deliver superior-quality service and greater convenience to millions of consumers at a lowercost than established bricks-and-mortar service providers and still make a respectablereturn on invested capital. The service sector is one of the most natural avenues fore-commerce because so much of the value in services is based on collecting, storing,and exchanging information—something for which the Web is ideally suited. And, in fact, online services have been extraordinarily successful in attracting banking,brokerage, travel, and job-hunting customers. The quality and amount of informationonline to support consumer decisions in finance, travel, and career placement isextraordinary, especially when compared to what was available to consumers beforee-commerce. The online service sector—like online retail—has established a significantbeachhead and now plays a large role in consumer time on the Internet. In areas such as brokerage, banking, and travel, online services are an extraordinary success storyand have transformed their industries. in unit 16 we look at B2B E commerce, the first wave of B2B exchanges fell short when thedot.com bubble of the early 2000s deflated. This latest wave, headlined by Alibaba, hassucceeded where its predecessors failed by focusing on cost savings and affordabilityto meet the needs of small and medium-sized enterprises (SMEs), who aren't able tobuild their own marketplaces the way large companies can. As the rest of the world hatches new B2B start-ups to serve the SME market, they will have to play catch-upwith Alibaba, which has been providing procurement and supply chain efficiencies to suchcompanies for 15 years. Like Alibaba, they must lower transaction costs and identifyunique suppliers and products for their buyers by

providing a robust store of suppliersand by using matching algorithms, personalization, and big data analytics to help buyers find the supplier with the best product to meet their needs.

This block consists of 4 units and is organized as follows:

Unit 13 : Online Communities

Online auctions- Benefits and costs of auctions, Risks of auctions, Types and examples of auctions, E-commerce portals –Growth and evolution of portals, Types of portals

Unit 14 : E-commerce retailing

Online retail sector, Retail industry, Analysis of Online Firms, E-tailing Business models,

Unit 15: E-commerce services

Online financial services, Online Travel services, Online Career services, On Demand Service Companies

Unit 16 : B2B E-Commerce

Overview, Procurement process and supply chains, Trends in Supply chain management, Netmarketplaces

UNIT -13: ONLINE COMMUNITIES

Structure

13.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Describe the different types of social networks and online communities and their business models.
- ✓ Describe the major types of auctions, their benefits and costs, how they operate, when to use them, and the potential for auction abuse and fraud.
- ✓ Describe the major types of Internet portals and their business models.

13.1 ONLINE AUCTIONS- BENEFITS AND COSTS OF AUCTIONS

Auctions are used throughout the e-commerce landscape. The most widely knownauctions are **consumer-to-consumer (C2C) auctions**, in which the auction houseis simply an intermediary market maker, providing a forum where consumers—buyersand sellers—can discover prices and trade. The market leader in C2C auctions iseBay, which, as of June 2016, had around 164 million active users and over 800million items listed on any given day within thousands of different categories. In2015, eBay had about $6.1 billion in net revenues from its Marketplaces segment, a4% decline from 2014, and the total worth of goods sold or auctioned was around$78 billion, a 2% decline from 2014 (eBay, 2016). eBay is expanding rapidly in emergingmarkets, which its CEO has stated are now its fastest growing markets. There are hundreds ofauction sites, some specializing in unique collectible products such as stamps andcoins, others adopting a more generalist approach in which almost any good can befound for sale.

Less well known are business-to-consumer (B2C) auctions, where a businessowns or controls assets and uses dynamic pricing to establish the price. Increasingly,online retail sites, such as Sam's Club, are adding auctions to their sites. Auctions alsoconstitute a significant part of B2B e-commerce in 2016, and more than a third ofprocurement officers use auctions to procure goods.

Auctions are not limitedto goods and services. They can also be used to allocate resources, and bundles ofresources, among any group of bidders. For instance, if you wanted to establish

anoptimal schedule for assigned tasks in an office among a group of clerical workers, anauction in which workers bid for assignments would come close to producing a nearlyoptimal solution in a short amount of time. In short, auctions—like all markets—are ways of allocating resources among independent agents(bidders).

BENEFITS AND COSTS OF AUCTIONS

The Internet is primarily responsible for the resurgence in auctions. The Internet providesa global environment and very low fixed and operational costs for the aggregationof huge buyer audiences, composed of millions of consumers worldwide, who can usea universally available technology (Internet browsers) to shop for goods.

Benefits of Auctions

Aside from the sheer game-like fun of participating in auctions, consumers, merchants,and society as a whole derive a number of economic benefits from participating inInternet auctions. These benefits include:

- Liquidity: Sellers can find willing buyers, and buyers can find sellers. Sellers andbuyers can be located anywhere around the globe. Just as important, buyers and sellers can find a global market for rare items that would not have existed beforethe Internet.
- **Price discovery:** Buyers and sellers can quickly and efficiently develop prices foritems that are difficult to assess, where the price depends on demand and supply,and where the product is rare.
- **Price transparency:** Public Internet auctions allow everyone in the world to seethe asking and bidding prices for items.
- **Market efficiency:** Auctions can, and often do, lead to reduced prices, and hencereduced profits for merchants, leading to an increase in consumer welfare—onemeasure of market efficiency.
- **Lower transaction costs:** Online auctions can lower the cost of selling and purchasingproducts, benefiting both merchants and consumers. Like other Internet markets,such as retail markets, Internet auctions have very low (but not zero) transaction costs.
- **Consumer aggregation:** Sellers benefit from large auction sites' ability to aggregatea large number of consumers who are motivated to purchase something inone marketspace.

- **Network effects:** The larger an auction site becomes in terms of visitors and productsfor sale, the more valuable it becomes as a marketplace for everyone by providingliquidity and several other benefits listed previously, such as lower transactioncosts, higher efficiency, and better price transparency.

13.2 RISKS OF AUCTIONS

There are a number of risks and costs involved in participating in auctions. In some cases,auction markets can fail—like all markets at times. Some of the more important risks and costs to keep in mind are:

- **Delayed consumption costs:** Internet auctions can go on for days, and shippingwill take additional time.
- **Monitoring costs:** Participation in auctions requires your time to monitor bidding.
- **Equipment costs:** Internet auctions require you to purchase a computer systemand pay for Internet access.
- **Trust risks:** Online auctions are a significant source of Internet fraud. Using auctionsincreases the risk of experiencing a loss.
- **Fulfillment costs:** Typically, the buyer pays fulfilment costs of packing, shipping, and insurance, whereas at a physical store these costs are included in the retail price.

Auction sites such as eBay have taken a number of steps to reduce consumerparticipation costs and trust risk. For instance, auction sites attempt to solve the trustproblem by providing a rating system in which previous customers rate sellers basedon their overall experience with the merchant. Although helpful, this solution does notalways work. Auction fraud is a leading source of e-commerce complaints to federal lawenforcement officials. Another partial solution to high monitoring costs is, ironically, fixedpricing. At eBay, consumers can reduce the cost of monitoring and waiting for auctionsto end by simply clicking on the Buy It Now button and paying a premium price. Thedifference between the Buy It Now price and the auction price is the cost of monitoring.

Nevertheless, given the costs of participating in online auctions, the generallylower cost of goods on Internet auctions is in part a compensation for the other additionalcosts consumers experience. On the other hand, consumers experience lowersearch costs and transaction costs because there usually are no intermediaries (unless,of course, the seller is an online business operating on an

auction site, in which casethere is a middleman cost), and usually there are no local or state taxes.

Merchants face considerable risks and costs as well. At auctions, merchantsmay end up selling goods for prices far below what they might have achieved inconventional markets. Merchants also face risks of nonpayment, false bidding, bidrigging, monitoring, transaction fees charged by the auction site, credit card transactionprocessing fees, and the administration costs of entering price and productinformation.

AUCTIONS AS AN E-COMMERCE BUSINESS MODEL

Online auctions have been among the most successful business models in retail and B2Bcommerce. eBay, the Internet's most lucrative auction site, has been profitable nearlysince its inception. The strategy for eBay has been to make money off every stage in the auction cycle. eBay earns revenue from auctions in several ways: transaction feesbased on the amount of the sale, listing fees for display of goods, financial service fees from payment systems such as PayPal, and advertising or placement fees where sellerspay extra for special services such as particular display or listing services. PayPal hasbeen faster growing and more profitable than eBay's markets, growing to more thanhalf of eBay's revenue. In 2015, eBay spun off PayPal into a separate company, andgoing forward will have to make its profits from its markets operation. However, it is on the cost side that online auctions have extraordinary advantagesover ordinary retail or catalog sites. Auction sites carry no inventory and do notperform any fulfillment activities—they need no warehouses, shipping, or logistical facilities. Sellers and consumers provide these services and bear these costs. In thissense, online auctions are an ideal digital business because they involve simply thetransfer of information.Even though eBay has been extraordinarily successful, the success of onlineauctions is qualified by the fact that the marketplace for online auctions is highlyconcentrated. eBay dominates the online auction market, followed by eBid and uBid. In the last several years eBay's growth has slowed considerably as consumers shift toward Buy It Now purchases rather than auctions. Many of the smaller auction sitesare not profitable because they lack sufficient sellers and buyers to achieve liquidity.In auctions, network effects are highly influential, and the tendency is for one or twovery large auction sites to dominate, with hundreds of smaller specialty auction sites(sites that sell specialized goods such as stamps) being barely profitable.

13.3 TYPES AND EXAMPLES OF AUCTIONS

The primary types of auctions found on the Internet are English auctions, DutchInternet auctions, Name Your Own Price auctions, and so-called penny auctions.

The **English auction** is the easiest to understand and the most common form ofauction on eBay. Typically, there is a single item up for sale from a single seller. Thereis a time limit when the auction ends, a reserve price below which the seller will notsell (usually secret), and a minimum incremental bid set. Multiple buyers bid againstone another until the auction time limit is reached. The highest bidder wins the item(if the reserve price of the seller has been met or exceeded). English auctions are considered to be seller-biased because multiple buyers compete against one another—usually anonymously.

The **Dutch Internet auction** format is perfect for sellers that have many identicalitems to sell. Sellers start by listing a minimum price, or a starting bid for one item, andthe number of items for sale. Bidders specify both a bid price and the quantity they wantto buy. The uniform price reigns. Winning bidders pay the same price per item, whichis the lowest successful bid. This market clearing price can be less than some bids. If there are more buyers than items, the earliest successful bids get thegoods. In general,high bidders get the quantity they want at the lowest successful price, whereas low successfulbidders might not get the quantity they want (but they will get something).

The **Name Your Own Price auction** was pioneered by Priceline, and is the second most-popular auction format on the Web. Although Priceline also acts as anintermediary, buying blocks of airline tickets, hotel rooms, and vacation packages ata discount and selling them at a reduced retail price or matching its inventory tobidders, it is best known for its Name Your Own Price auctions, in which users specifywhat they are willing to pay for goods or services, and multiple providers bid for theirbusiness. Prices do not descend and are fixed: the initial consumer offer is a commitmentto purchase at that price. In 2015, Priceline had more than $9.2 billion in revenues,and in 2016, it attracts around 20 million unique visitors a month. It is one of the toprankedtravel sites in the United States.

But how can Priceline offer such steep discounts off prices for services providedby major brand-name providers? There are several answers. First, Priceline “shields thebrand” by not publicizing the prices at which major brands sell. This reduces conflict withtraditional channels, including direct sales. Second, the services being sold are perishable: if a Priceline customer did not pay

something for the empty airline seat, rental car, orhotel room, sellers would not receive any revenue. Hence, sellers are highly motivatedto at least cover the costs of their services by selling in a spot market at very low prices.The strategy for sellers is to sell as much as possible through more profitable channelsand then unload excess capacity on spot markets such as Priceline. This works to the advantage of consumers, sellers, and Priceline, which charges a transaction fee to sellers.

So-called penny auctions are really anything but. To participate in a **penny auction**(also known as a **bidding fee auction**), you typically must pay the penny auctionsite for bids ahead of time, typically 50 cents to $1 dollar, usually in packs costing $25-$50. Once you have purchased the bids, you can use them to bid on items listed bythe penny auction site (unlike traditional auctions, items are owned by the site, notthird parties). Items typically start at or near $0 and each bid raises the price by a fixedamount, usually just a penny. Auctions are timed, and when the time runs out, the last and highest bidder wins the item. Although the price of the item itself may notbe that high, the successful bidder will typically have spent much more than that.

Unlike a traditional auction, it costs money to bid, and that money is gone even if thebidder does not win the auction. The bidder's cumulative cost of bidding must be addedto the final price of a successful bid to determine the true cost of the item. The FederalTrade Commission has issued an alert about penny auctions, warning that biddersmay find that they spend far more than they intended.

Examples of penny auction sites include QuiBids, Beezid, and HappyBidDay.

13.4 E-COMMERCE PORTALS –GROWTH AND EVOLUTION OF PORTALS

Portals are among the most frequently visited sites on the Web if only because theyoften are the homepage page to which many users point their browser on startup. Thetop portals such as Yahoo, MSN, and AOL have hundreds of millions of unique visitorsworldwide each month. Portal sites are gateways to the billions of web pages availableon the Internet. Facebook also acts as a home page portal to the Web. Millions of users have set Facebook as their home page, choosing to start their sessions with news fromtheir friends, and many stay on Facebook for several hours a day. Perhaps the most important service provided byportals is to help people find the information they are looking for on the Web and, likenewspapers, to expose people to information they were not looking for but which theynonetheless may find entertaining or

interesting. The original portals in the early daysof e-commerce were search engines. Consumers would pass through search engineportals on their way to rich, detailed, in-depth content on the Web. But portals evolved into much more complex websites that provide news, entertainment, maps, images,social networks, in-depth information, and education on a growing variety of topics allcontained at the portal site. Portals today seek to be a sticky destination site, not merelya gateway through which visitors pass. In this respect, portals are very much like televisionnetworks: destination sites for content supported by advertising revenues. Portalstoday want visitors to stay a long time—the longer the better to expose visitors to ads.

For the most part they succeed: portals are places where people linger for a long time.Portals also serve important functions within a business or organization. Mostcorporations, universities, churches, and other formal organizations have **enterpriseportals** that help employees or members navigate to important content, such as humanresources information, corporate news, or organizational announcements. For instance,your university has a portal through which you can register for courses, find classroomassignments, and perform a host of other important student activities. Increasingly,these enterprise portals also provide general-purpose news and real-time financialfeeds provided by content providers outside the organization. Ourfocus here is on e-commerce portals.

THE GROWTH AND EVOLUTION OF PORTALS

Portals have changed a great deal from their initial function and role. As noted above, mostof today's well-known portals, such as Yahoo, MSN, and AOL, began as search engines.

The initial function provided by portals was to index web page content and make thiscontent available to users in a convenient form. Early portals expected visitors to stayonly a few minutes at the site. As millions of people signed on to the Internet in the early2000s, the number of visitors to basic search engine sites exploded commensurately. Atfirst, few people understood how a web search site could make money by passing customerson to other destinations. But search sites attracted huge audiences, and thereinlay the foundation for their success as vehicles for marketing and advertising. Searchsites, recognizing the potential for commerce, expanded their offerings from simplenavigation to include commerce (the sale of items directly from the website as well as advertising for other retail sites), content (in the form of news at first, and later

in theform of weather, investments, games, health, and other subject matter), communications(email, chat, and texting), and distribution of others' content. These four characteristicshave become the basic definition of portal sites, namely, sites that provide four functions: navigation of the Web (search), communications, commerce, and content.

Because the value of portals to advertisers and content owners is largely a functionof the size of the audience each portal reaches, and the length of time visitors stay onsite, portals compete with one another on reach and unique visitors. *Reach* is defined asthe percentage of the web audience that visits the site in a month (or some other timeperiod), and *unique visitors* is defined as the number of uniquely identified individuals who visit in a month. Portals are inevitably subject to network effects: The value ofthe portal to advertisers and consumers increases geometrically as reach increases,which, in turn, attracts still more customers. These effects have resulted in the differentiationof the portal marketspace into three tiers: a few general-purpose megaportal sites that garner 60%–80% of the web audience, second-tier general-purpose sitesthat hover around 20%–30% reach, and third-tier specialized vertical market portalsthat attract 2%–10% of the audience. The top five portals/search engines (Google, Yahoo, MSN/Bing, AOL, and Ask) account for more than 95%of online searches in the United States. A similar pattern of concentration is observedwhen considering the audience share of portals/search engines (including both desktopand mobile). However, this picture is changing as largeaudiences move to social network sites, and millions of users make these sites theiropening or home pages and the place where they spend most of their digital time.Social network sites like Facebook are broadening their content with videos, movies,and news, transforming themselves into a hybrid social network and portal.

13.5 TYPES OF PORTALS

TYPES OF PORTALS: GENERAL-PURPOSE AND VERTICAL MARKET

There are two primary types of portals: general-purpose portals and vertical marketportals. **General-purpose portals** attempt to attract a very large general audienceand then retain the audience on-site by providing in-depth vertical content channels,such as information on news, finance, autos, movies, and weather. General-purposeportals typically offer search engines, free e-mail, personal home pages, chat rooms,community-building software, and bulletin boards.

Vertical content channels on general-purpose portal sites offer content such as sports scores, stock tickers, healthtips, instant messaging, automobile information, and auctions.

Vertical market portals (sometimes also referred to as destination sites or vortals) attempt to attract highly focused, loyal audiences with a deep interest in either communityor specialized content—from sports to the weather. In addition to their focusedcontent, vertical market portals have recently begun adding many of the featuresfound in general-purpose portals. For instance, in addition to being a social network,you can also think of Facebook as a portal—the home page for millions of users, and a gateway to the Internet. Facebook is an affinity group portal because it is based onfriendships among people. Facebook offers e-mail, search, games, and apps.The concentration of audience share in the portal market reflects (in additionto network effects) the limited time budget of consumers. This limited time budgetworks to the advantage of general-purpose portals. Consumers have a finite amount oftime to spend on the Web, and as a result, most consumers visit fewer than 30 uniquedomains each month. Facing limited time, consumers concentrate their visits at sites that can satisfy a broad range of interests, from weather and travel information, tostocks, sports, retail shopping, and entertainment content.

General-purpose sites such as Yahoo try to be all things to all people and attract a broadaudience with both generalized navigation services and in-depth content and communityefforts. For instance, Yahoo has become the Web's largest source of news: more people visitYahoo News than any other news site including online newspapers. Yet recent changes in consumer behavior on the Web show that consumers are spending less time "surfingthe Web" and on general browsing, and more time doing focused searches, research, andparticipating in social networks. These trends will advantage special-purpose, verticalmarket sites that can provide focused, in-depth community and content.

As a general matter, the general-purpose portals are very well-known brands,while the vertical content and affinity group portals tend to have less well-knownbrands. **Figure 13.5** lists examples of general-purpose portals and the two main typesof vertical market portals.

There are two general types of portals: general-purpose and vertical market. Vertical market portals may bebased on affinity groups or on focused content.

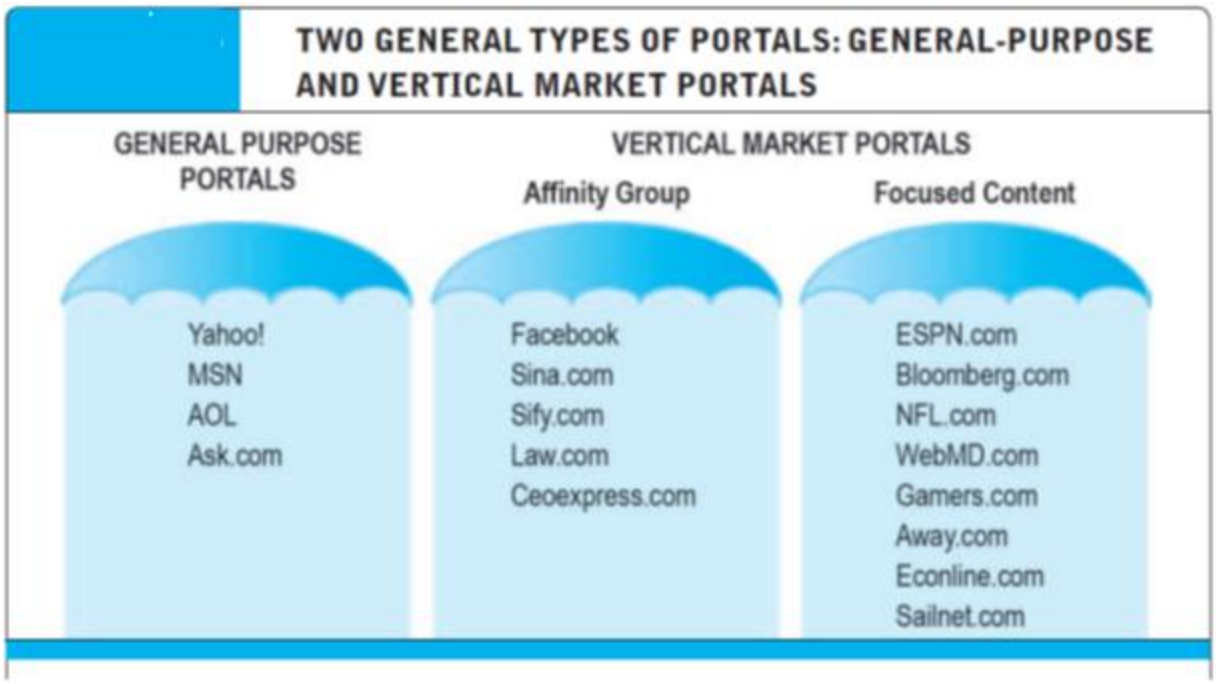

Fig. 13.5 General purpose portals and the two main types of vertical market portals.

13.6 CHECK YOUR PROGRESS

1. What is an online social network?
2. List three social networks focused on messaging.
3. List four different types of auctions.
4. What is a sponsered community
5. What is herd behaviour?

Answers to Check Your Progress

9. An **online** service or site to facilitate **social** interaction to help individuals find others of a common interest, establish a forum for discussion, and exchange information
10. Facebook, whatsapp, twitter
11. English,dutch,the first price, the second price
12. A sponsored community is **a Live Journal community that is created and maintained by another company**. They can use these communities to post information about various products or services relevant to their business

13. the tendency to gravitate toward, and bid for, auction listings with one or more existing bids

13.7 SUMMARY

In this unit, we discussed social networks, auctions, and portals. What do social networks, auctions, and portals have in common? They are all based on feelings of shared interest and self-identification—in short, a sense of community. Social networks and online communities explicitly attract people with sharedaffinities, such as ethnicity, gender, religion, and political views, or shared interests,such as hobbies, sports, and vacations. The auction site eBay started as a communityof people interested in trading unwanted but functional items for which there wasno ready commercial market. That community turned out to be huge—much largerthan anyone expected. Portals also contain strong elements of community by providingaccess to community-fostering technologies such as e-mail, chat groups, bulletinboards, and discussion forums.

13.8 KEYWORDS

- **social network -** involves a group of people, shared social interaction, common ties among members, and people who share an area for some period of time
- **online social network -** an area online, where people who share common ties can interact with one another
- **generalcommunities -** offer members opportunitiesto interact with a generalaudience organized intogeneral topics
- **practice networks -** offer members focused discussion groups, help,
    - information, and knowledge relating to an area of shared practice
- **interest-based social networks -** offer members focused discussion groups based on a shared interest in some specific topic
- **affinity communities -** offer members focused discussions and interaction with other people who share the same affinity
- **sponsored communities -** online communities created for the purpose of pursuing organizational (and often commercial) goals

- **algorithms -** set of step-by-step instructions, similar to a recipe, for producing a desired output from required inputs
- **consumer-to-consumer (C2C) auctions -** auction house acts as an intermediary market maker, providing a forum where consumers can discover prices and trade
- **business-to-consumer (B2C) auctions -** business sells goods it owns, or controls, using various dynamic pricing models

13.9 SELF ASSESSMENT QUESTIONS

1. Contrast eBay's original business model with its current business model.
2. Describe the different types of social networks and online communities and their business models.
3. Describe the major types of auctions, their benefits and costs, how they operate, when to use them, and the potential for auction abuse and fraud.
4. Describe the major types of Internet portals and their business models.

13.10 REFERENCES

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2. https://www.investopedia.com/

UNIT -14: E-COMMERCE RETAILING

Structure

14.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Understand the environment in which the online retail sector operates today.
- ✓ Explain how to analyze the economic viability of an online firm.
- ✓ Identify the challenges faced by the different types of online retailers.

14.1 ONLINE RETAIL SECTOR

Perhaps the most important theme in online retailing is the effort by retailers—both offline and online—to integrate their operations so they can serve customers in thevarious ways they want to be served.

By any measure, the size of the global retail market is huge: around €21 trillionin 2016. Retail sales in Asia-Pacific account for about 41% of that total, with NorthAmerica accounting for about 24%, and Western Europe 17%.

THE RETAIL INDUSTRY

The retail industry is composed of many different types of firms.durable goods, general merchandise, foodand beverage, specialty stores, gasoline and fuel, mail order/telephone order (MOTO),and online retail firms. Each of these segments offers opportunities for online retail, and yet in each segment, the uses of the Internet may differ. Some eating and drinking establishments use the Web and mobile apps to inform people of their physicallocations and menus, while others offer delivery via online orders. Retailers of durablegoods typically use the online channel primarily as an informational tool rather thanas a direct purchasing tool, although this has begun to change.

The MOTO sector is the most similar to the online retail sales sector. In the absence of physical stores, MOTO retailers distribute millions of physical catalogs (their largest expense) and operate large telephone call centers to accept orders. They have developed extraordinarily efficient order fulfill mentcenters that generally ship customer orders within 24 hours of receipt. MOTO was the fastest growingretail segment throughout the 1970s and 1980s. It grew as a direct result of improvementsin the national toll-free call system, the implementation of digital switching intelephone systems, falling long distance telecommunications prices, and of course,

the expansion of the credit card industry and associated technologies, without whichneither MOTO nor e-commerce would be possible on a large national scale. MOTOwas the last "technological" retailing revolution that preceded e-commerce. Becauseof their experience in fulfilling small orders rapidly, the transition to e-commerce wasnot difficult for these firms.

ONLINE RETAILING

Online retail is perhaps the most high-profile e-commerce sector. Over the past decade,this sector has experienced both explosive growth and spectacular failures. Many ofthe early pure-play online-only firms that pioneered the retail marketspace failed.Entrepreneurs and their investors seriously misjudged the factors needed to succeedin this market. But the survivors of this early period emerged much stronger, and along with traditional offline general and specialty merchants, as well as new startups, thee-tail space is growing very rapidly and is increasing its reach and size.

E-commerce Retail: The Vision

In the early years of e-commerce, literally thousands of entrepreneurial web-based retailers were drawn to the marketplace for retail goods, simply because it was one of the largest market opportunities in the U.S. economy. Many entrepreneurs initiallybelieved it was easy to enter the retail market. Early writers predicted that the retailindustry would be revolutionized, literally "blown to bits"—as prophesied by two consultantsin a famous Harvard Business School book. Thebasis of this revolution would be fourfold. First, because the Internet greatly reducedboth search costs and transaction costs, consumers would use the Web to find thelowest-cost products. Several results would follow. Consumers would increasinglydrift to the Web for shopping and purchasing, and only low-cost, high-service, qualityonline retail merchants would survive. Economists assumed that the online consumerwas rational and cost-driven—not driven by perceived value or brand, both of which are non rational factors.

Second, it was assumed that the entry costs to the online retail market were muchless than those needed to establish physical storefronts, and that online merchantswere inherently more efficient at marketing and order fulfilment than offline stores. The costs of establishing a powerful website were thought to be minuscule comparedto the costs of warehouses, fulfilment centers, and physical stores. There would be nodifficulty building sophisticated order entry, shopping

cart, and fulfilment systems because this technology was well known, and the cost of technology was falling by 50%each year. Even the cost of acquiring consumers was thought to be much lower becauseof search engines that could almost instantly connect customers to online vendors.

Third, as prices fell, traditional offline physical store merchants would be forcedout of business. New entrepreneurial companies—such as Amazon—would replacethe traditional stores. It was thought that if online merchants grew very quickly, theywould have first-mover advantages and lock out the older traditional firms that weretoo slow to enter the online market.

Fourth, in some industries—such as electronics, apparel, and digital content—themarket would be disintermediated as manufacturers or their distributors entered tobuild a direct relationship with the consumer, destroying the retail intermediaries ormiddlemen. In this scenario, traditional retail channels—such as physical stores, salesclerks, and sales forces—would be replaced by a single dominant channel: the Web.

Many predicted, on the other hand, a kind of hyper mediation based on the conceptof a virtual firm in which online retailers would gain advantage over established offlinemerchants by building an online brand name that attracted millions of customers, andoutsourcing the expensive warehousing and order fulfilment functions—the original concept of Amazon.As it turned out, few of these assumptions and visions were correct, and the structureof the retail marketplace, with some notable exceptions, has not been blown tobits, disintermediated, or revolutionized in the traditional meaning of the word "revolution."

With several notable exceptions, online retail has often not been successful as an independent platform on which to build a successful "pure-play" online-onlybusiness. As it turns out, the consumer is not primarily price-driven when shoppingon the Internet but instead considers brand name, trust, reliability, delivery time,convenience, ease of use, and above all "the experience," as at least as important asprice.However, the Internet has created an entirely new venue for **omni-channel** firms(those that sell products through a variety of channels and integrate their physicalstores with their websites and mobile platform), and in some cases, the Internet hassupported the development of pure-play online-only merchants, both general merchandisersas well as specialty retailers. As predicted, online retail has indeed becomethe fastest growing and most dynamic retail channel in the sense of channelinnovation.

The Web has created a new marketplace for millions of consumers to convenientlyshop. The Internet and the Web have continued to provide new opportunitiesfor entirely new firms using

new business models and new online products—such asBlue Nile. The online channel can conflict with a merchant'sother channels, such as direct sales forces, physical stores, and mail order, but thismulti-channel conflict can be managed and turned into a strength.

14.2 RETAIL INDUSTRY

Although online retailing is one of the smallest segments of the global retail industry,constituting only about 9% of the total retail market today, it is growing at a fasterrate than its offline counterparts, with new functionality and product lines beingadded every day. In the United States, the apparel and accessories category generatesthe highest percentage of revenue, around $64 billion in 2015.

Consumers have a wide choice of online shopping options in this category, such asomni-channel department store chains like Macy's, Nordstrom, Target, and Walmartand specialty retailers like Gap, Zulily, J.Crew, Urban Outfitters, Abercrombie &Fitch,and Ralph Lauren. This is one category where Amazon does not dominate, in partbecause clothing shoppers tend to identify more strongly with a specific brand thanthey do with products that are more of a commodity, such as consumer electronics.

The computers and consumer electronics category generates the second-highestpercentage of revenue, around $54 billion in 2015. Online shopping options for thiscategory include Amazon, direct-manufacturers such as Apple, Dell, HP, and Lenovo,omni-channel chains such as Best Buy, and catalog merchants such as CDW and PCConnection.

The automobile and automobile parts and accessories category is in third place,generating around $36 billion in 2015, primarily from auto parts and accessories.

Currently, U.S. franchising law prohibits automobile manufacturers from selling carsdirectly to consumers, so automobile retailing is dominated by dealership networks.Automobile manufacturers use the Internet to deliver branding advertising, whiledealers focus on generating leads. Consumers typically focus on product and pricingresearch, which they then use to negotiate with dealers. Direct online automobile salesare currently not common due to the complexity of the vehicle purchasing process,but they are likely to become more commonplace in the future. For example, startup

Beepi has developed a business model based on eliminating dealers and sells usedcars directly to consumers via a mobile app.

Books, music, and video are among the original items sold successfully online. Thisstill popular online category generated about $29 billion in 2015. Leading retailers inthis category include Amazon, Apple, Netflix, Google Play, Barnes & Noble, and Hulu.

The furniture and home furnishing category generated about $27 billion in 2015.In the past, the expense of shipping large items such as furniture, mattresses, and rugswas a deterrent to online sales, but that is beginning to change. In addition to Amazon,leading online retailers in this category include other purely online companies suchas Wayfair and Overstock, as well as omni-channel retailers such as Williams-Sonoma,Restoration Hardware, Bed Bath & Beyond, and Crate and Barrel.

The health and personal care (drugs, health, and beauty supplies) category has alsoenjoyed steady growth, with about $24.5 billion in revenue in 2015.The Internet provides a number of uniqueadvantages and challenges to online retailers. **Table 14.2** summarizes these advantages and challenges.

ONLINE RETAIL: ADVANTAGES AND CHALLENGES	
ADVANTAGES	CHALLENGES
Lower supply chain costs by aggregating demand at a single site and increasing purchasing power	Consumer concerns about the security of transactions
Lower cost of distribution using websites rather than physical stores	Consumer concerns about the privacy of personal information given to websites
Ability to reach and serve a much larger geographically distributed group of customers	Delays in delivery of goods when compared to store shopping
Ability to react quickly to customer tastes and demand	Inconvenience associated with return of damaged or exchange goods
Ability to change prices nearly instantly	Overcoming lack of consumer trust in online brand names
Ability to rapidly change visual presentation of goods	Added expenses for online photography, video, and animated presentations
Avoidance of direct marketing costs of catalogs and physical mail	Online marketing costs for search, e-mail, and displays
Increased opportunities for personalization, customization	Added complexity to product offerings and customer service
Ability to greatly improve information and knowledge delivered to consumer	Greater customer information can translate into price competition and lower profits
Ability to lower consumers' overall market transaction costs	

Table 14.2 Online retail advantages and disadvantages

Despite the high failure rate of online retailers in the early years, more consumersthan ever are shopping online. For most consumers, the advantages of online shoppingovercome the disadvantages. In 2016, it is estimated that 47% of Internet users overthe age of 14 worldwide (around 1.6 billion people) will make an online purchase,generating about €1.8 trillion in online retail sales. While the number of new Internetusers is not growing as rapidly at it was, this slowdown will not necessarily reduce the

growth in online retail e-commerce because the average shopper is spending more onthe Internet each year and finding many new categories of items to buy. For instance,in 2003, the average annual amount spent online by U.S. consumers was $675, butby 2016, it had jumped to over

$2,255. Millions of additional consumers research products online and are influencedin their purchase decisions at offline stores.

The primary beneficiaries of this growing consumer support are not only the pureonline companies but also the established offline retailers who have the brand-namerecognition, supportive infrastructure, and financial resources to enter the online marketplacesuccessfully. omni-channel firms thathave established brand names and for whom e-commerce still plays a relatively smallrole when compared to their offline physical store channels, such as Walmart, Sears,Macy's, Home Depot, Costco, Best Buy, and Target; and manufacturers of computer andelectronic equipment, such as Apple, Dell, and Lenovo. In 2015, Amazon accountedfor over 25% of all online retail revenues, the top 10 retailers accounted for almost55% of all online retail, while the top 500 U.S. retailers accounted for about 85%. The next 500 accounted for an additional 5%, so just 1,000 retailers generated over 90% ofall retail e-commerce sales. Many of the fastest growing firms are mid-size merchants,particularly newcomers that focus on a particular niche, such as Blue Apron, whichuses a subscription-based sales model for make-at-home meals, and Dollar Shave Club,another company that uses a subscription-based sales model for inexpensive razors. Conversely, companies that can't show consumers that they can offer them something of valuenot available elsewhere are likely to have a difficult time surviving. For pure-play firms, the challenge is to turn visitors into customers, and to develop efficient operationsthat permit them to achieve long-term profitability. Profitability remains a keyissue for online-only retailers. Not many of these companies are public and thereforerequired to report their financial results, but of the few that are, only a handful wereprofitable in 2015. For traditional firms that are less dependent on e-commerce sales, the challenge is to integrate the offline and online channels so customers can moveseamlessly from one environment to another. Clearly one of the most important e-commerce retail themes of 2016–2017, andinto the future, is the ability of offline traditional firms such as Walmart, Target, Macy's,and others to continue to integrate their web and mobile operations with their physicalstore operations in order to provide an "integrated shopping customer experience" andleverage the value of their physical stores. **Table 14.4** illustrates some of the variousways in which traditional retailers have integrated the Web, the mobile platform, and store operations to develop nearly seamless omni-channel

shopping. This list is not exclusive, and retailers continue to develop new links between channels.

RETAIL E-COMMERCE: OMNI-CHANNEL INTEGRATION METHODS

INTEGRATION TYPE	DESCRIPTION
Online order, in-store pickup	Probably one of the first types of integration.
Online order, store directory, and inventory	When items are out of stock online, customer is directed to physical store network inventory and store location.
In-store kiosk online order, home delivery	When retail store is out of stock, customer orders in store and receives at home.
In-store retail clerk online order, home delivery	Similar to above, but the retail clerk searches online inventory if local store is out of stock as a normal part of the in-store checkout process.
Order online, in-store returns, and adjustments	Defective or rejected products ordered online can be returned to any store location.
Online catalog	Online catalog supplements offline physical catalog and often the online catalog has substantially more product on display.
Manufacturers use online promotions to drive customers to their distributors' retail stores	Consumer product manufacturers such as Colgate-Palmolive and Procter & Gamble use online channels to design new products and promote existing product retail sales.
Gift card, loyalty program points can be used in any channel	Recipient of gift card, loyalty program points can use them to purchase in-store, online, or via catalog, if offered by merchant.
Mobile order, website and physical store sales	Apps take users directly to specially formatted website for ordering, or to in-store bargains.
Geo-fencing mobile notification, in-store sales	Use of smartphone geo-location technology to target ads for nearby stores and restaurants.

Fig. 14.4 Omni channel integration methods

Rather than demonstrate disintermediation, online retailing provides an exampleof the powerful role that intermediaries continue to play in retail trade. Establishedoffline retailers have rapidly gained online market share. Increasingly, consumers areattracted to stable, well-known, trusted retail brands and retailers. The online audienceis very sensitive to brand names and is not primarily cost-driven. Other factors such as reliability, trust, fulfilment, and customer service are equally important.The most significant changes in retail e-commerce in 2016 are the continuinggrowth in social e-commerce, the growing ability of firms to market local servicesand

products through the use of location-based marketing, and not least, the rapidlygrowing mobile platform composed of smartphones and tablet computers. In retailcircles, tablets are being called "the ultimate shopping machine," enabling consumersto browse media-rich online catalogs just like they used to do with physical catalogs, and then buy when they feel the urge.

Social e-commerce refers to marketing and purchasing on social network sites likeFacebook, Twitter, Pinterest, Instagram, Snapchat, and others. All of these sites havedeveloped into major marketing and advertising platforms that help direct consumersto external websites to purchase products. And, after trials in 2014, Facebook, Twitter,Pinterest, and Instagram have all introduced their own versions of "buy" buttons that allow consumers to more easily purchase goods on a much wider scale. In 2015, thetop 500 retailers in Internet Retailer's Social Media 500 earned about $3.9 billion fromsocial commerce, an over 40% increase over 2014.Whereas in the past only large firms could afford to run online marketing andad campaigns, this has changed with the development of local marketing firms likeGroupon, LivingSocial, and dozens of others, which make it possible for consumers toreceive discount deals and coupons from local merchants based on their geographiclocation. Using billions of daily e-mails, these so-called daily deal sites have sold millions of coupons to purchase local goods and services at steep discounts. For the firsttime, local merchants can advertise their products and services online at a relatively inexpensive cost. Social and local e-commerce are enabled by the tremendous growth in mobileInternet devices, both smartphones and tablet computers. In 2016, retail m-commercein the EU-5 generated €70 billion overall. In 2016, over 70% of online buyers in theUnited Kingdom made a purchase using a mobile device, and it is estimated that thispercentage will grow to almost 80% by 2020.

14.3 ANALYSIS OF ONLINE FIRMS

In this section, we analyze the viability of a number of online companies that exemplify specific e-commerce models. We are primarily interested in understandingthe near-to-medium term (1–3 years) economic viability of these firms and theirbusiness models. **Economic viability** refers to the ability of firms to survive as profitablebusiness firms during the specified period. To answer the question of economic viability,we take two business analysis approaches: strategic analysis and financial analysis.

STRATEGIC ANALYSIS

Strategic approaches to economic viability focus on both the industry in which a firmoperates and the firm itself. The key industrystrategic factors are:

- *Barriers to entry*: Can new entrants be barred from entering the industry throughhigh capital costs or intellectual property barriers (such as patents and copyrights)?
- *Power of suppliers*: Can suppliers dictate high prices to the industry or can vendorschoose from among many suppliers? Have firms achieved sufficient scale to bargaineffectively for lower prices from suppliers?
- *Power of customers*: Can customers choose from many competing suppliers andhence challenge high prices and high margins?
- *Existence of substitute products*: Can the functionality of the product or service beobtained from alternative channels or competing products in different industries?Are substitute products and services likely to emerge in the near future?
- *Industry value chain*: Is the chain of production and distribution in the industrychanging in ways that benefit or harm the firm?
- *Nature of intra-industry competition*: Is the basis of competition within the industry basedon differentiated products and services, price, scope of offerings, or focus of offerings?How is the nature of competition changing? Will these changes benefit the firm?
- The strategic factors that pertain specifically to the firm and its related businessesinclude:
- *Firm value chain*: Has the firm adopted business processes and methods of operationthat allow it to achieve the most efficient operations in its industry? Will changesin technology force the firm to realign its business processes?
- *Core competencies*: Does the firm have unique competencies and skills that cannotbe easily duplicated by other firms? Will changes in technology invalidate the firm’scompetencies or strengthen them?
- *Synergies*: Does the firm have access to the competencies and assets of related firmseither owned outright or through strategic partnerships and alliances?
- *Technology*: Has the firm developed proprietary technologies that allow it to scalewith demand? Has the firm developed the operational technologies (e.g., customerrelationship

management, fulfilment, supply chain management, inventorycontrol, and human resource systems) to survive?

- *Social and legal challenges*: Has the firm put in place policies to address consumertrust issues (privacy and security of personal information)? Is the firm the subjectof lawsuits challenging its business model, such as intellectual property ownershipissues? Will the firm be affected by changes in Internet taxation laws or otherforeseeable statutory developments?

FINANCIAL ANALYSIS

Strategic analysis helps us comprehend the competitive situation of the firm. Financialanalysis helps us understand how in fact the firm is performing. There are two partsto a financial analysis: the statement of operations and the balance sheet. The statementof operations tells us how much money (or loss) the firm is achieving based oncurrent sales and costs. The balance sheet tells us how many assets the firm has tosupport its current and future operations.Here are some of the key factors to look for in a firm's statement of operations:

- *Revenues*: Are revenues growing and at what rate? Many e-commerce companieshave experienced impressive, even explosive, revenue growth as an entirely newchannel is created.
- *Cost of sales*: What is the cost of sales compared to revenues? Cost of sales typicallyincludes the cost of the products sold and related costs. The lower the cost of salescompared to revenue, the higher the gross profit.
- *Gross margin*: What is the firm's gross margin, and is it increasing or decreasing? **Grossmargin** is calculated by dividing gross profit by net sales revenues. Gross margin cantell you if the firm is gaining or losing market power vis-à-vis its key suppliers.
- *Operating expenses*: What are the firm's operating expenses, and are they increasingor decreasing? Operating expenses typically include the cost of marketing, technology,and administrative overhead. They also include, in accordance with professionalaccounting standards (see below), stock-based compensation to employeesand executives, amortization of goodwill and other intangibles, and impairmentof investments. In e-commerce companies, these turn out to be very importantexpenses. Many e-commerce firms compensated their employees with stock shares(or options), and many e-commerce

firms purchased other e-commerce firms as apart of their growth strategy. Many of the companies were purchased at extremelyhigh values using company stock rather than cash; in numerous instances, thepurchased companies fell dramatically in market value. All these items are countedas normal operating expenses.

- *Operating margin*: What did the firm earn from its current operations? **Operatingmargin** is calculated by dividing operating income or loss by net sales revenue.Operating margin is an indication of a company's ability to turn sales into pre-taxprofit after operating expenses have been deducted. Operating margin tells us ifthe firm's current operations are covering its operating expenses, not includinginterest expenses and other non-operating expenses.
- *Net margin*: **Net margin** tells us the percentage of its gross sales revenue the firmwas able to retain after all expenses are deducted. Net margin is calculated by dividingnet income or loss by net sales revenue. Net margin sums up in one numberhow successful a company has been at the business of making a profit on each dollarof sales revenues. Net margin also tells us something about the efficiency of the firmby measuring the percentage of sales revenue it is able to retain after all expensesare deducted from gross revenues, and, within a single industry, it can be used tomeasure the relative efficiency of competing firms. Net margin takes into accountmany non-operating expenses such as interest and stock compensation plans.

A **balance sheet** provides a financial snapshot of a company's assets and liabilities(debts) on a given date. **Assets** refer to stored value. **Current assets** are those assets such as cash, securities, accounts receivable, inventory, or other investments that arelikely to be able to be converted to cash within one year. **Liabilities** are outstandingobligations of the firm. **Current liabilities** are debts of the firm that will be due withinone year. Liabilities that are not due until the passage of a year or more are characterizedas **long-term debt**. For a quick check of a firm's short-term financial health,examine its **working capital** (the firm's current assets minus current liabilities). Ifworking capital is only marginally positive, or negative, the firm will likely have troublemeeting its short-term obligations. Alternatively, if a firm has a large amount of currentassets, it can sustain operational losses for a period of time.

14.4 E-TAILING BUSINESS MODELS

So far, we have been discussing online retail as if it were a single entity. In fact, there are four main types of online retail business models: virtual merchants, omni-channel merchandisers (sometimes referred to as bricks-and-clicks or clicks-and-bricks), catalog merchants, and manufacturer-direct firms.

VIRTUAL MERCHANTS

Virtual merchants are single-channel e-commerce firms that generate almost alltheir revenue from online sales. Virtual merchants face extraordinary strategic challenges.They must build a business and brand name from scratch, quickly, in anentirely new channel and confront many virtual merchant competitors (especially insmaller niche areas). Because these firms typically do not have any physical stores,they do not have to bear the costs associated with developing and maintaining physicalstores but they face large costs in building and maintaining an e-commerce presence,building an order fulfilment infrastructure, and developing a brand name.

Customer acquisition costs are high, and the learning curve is steep. Like all retailfirms, their gross margins (the difference between the retail price of goods sold andthe cost of goods to the retailer) are low. Therefore, virtual merchants must achievehighly efficient operations in order to preserve a profit, while building a brand nameas quickly as possible in order to attract sufficient customers to cover their costs ofoperations. Most merchants in this category adopt low-cost and convenience strategies,coupled with extremely effective and efficient fulfilment processes to ensure customers receive what they ordered as fast as possible.

Recently, a new group of virtual merchants have emerged that use a subscriptionrevenue model. Examples include Birchbox (personalized beauty samples delivered monthly), Stitch Fix (clothing selected by a personal stylist), Barkbox (pet supplies), Nature box (healthy snacks), Bulu Box (supplements and vitamins), and hundreds more. According to Internet Retailer, overall, virtualmerchants accounted for over $140 billion (about 42%) of U.S. online retail sales bythe Internet Retailer Top 1000 merchants in 2015.

14.5CHECK YOUR PROGRESS

6. What is omni-channel?
7. What is economic viability?

8. What is abalance sheet?
9. Who are catalog merchants?
10. What is a demand-pull model?

Answers to Check Your Progress

6. retailers that sell products through a variety of channels and integrate their physical stores with their website and mobile platform
7. refers to the ability of firms to survive as profitable business firms during a specified period
8. provides a financial snapshot of a company on a given date and shows its financial assets and liabilities
9. established companies that have a national offline catalog operation that is their largest retail channel, but who have recently developed online capabilities
10. products are not built until an order is received

14.6 SUMMARY

As with retail goods, the promise of online service providers is that they can deliversuperior-quality service and greater convenience to millions of consumers at a lowercost than established bricks-and-mortar service providers and still make a respectablereturn on invested capital. The service sector is one of the most natural avenues fore-commerce because so much of the value in services is based on collecting, storing,and exchanging information—something for which the Web is ideally suited. And,in fact, online services have been extraordinarily successful in attracting banking,brokerage, travel, and job-hunting customers. The quality and amount of informationonline to support consumer decisions in finance, travel, and career placement isextraordinary, especially when compared to what was available to consumers beforee-commerce. The online service sector—like online retail—has established a significant beachhead and now plays a large role in consumer time on the Internet. In areas suchas brokerage, banking, and travel, online services are an extraordinary success storyand have transformed their industries. We understood three of the most successful online services: financial services (includinginsurance and real estate), travel services, and career services. We examined the new on-demand services companies, such as Uber, Airbnb, and a wholehost of others, that have rocketed to prominence in the last several years. Using abusiness model that is both local and mobile, this new type of service company providesa platform for consumers to connect with

providers who can provide on-demandservices, such as transportation, short-term room rental, grocery shopping, and more.

14.7 Keywords

- **omni-channel -** retailers that sell products through a variety of channels and integrate their physical stores with their website and mobile platform
- **economic viability -** refers to the ability of firms to survive as profitable business firms during a specified period
- **gross margin -** gross profit divided by net sales
- **operating margin -** calculated by dividing operating income or loss by net sales revenue
- **net margin -** the percentage of its gross sales revenue the firm is able to retain after all expenses are deducted; calculated by dividing net income or loss by net sales revenue
- **balance sheet -** provides a financial snapshot of a company on a given date and shows its financial assets and liabilities
- **assets -** refers to stored value

14.8 SELF ASSESSMENT QUESTIONS

1. Explain how to analyze the economic viability of an online firm.
2. Identify the challenges faced by the different types of online retailers.
3. Describe the major features of the online service sector
4. Discuss the trends taking place in the online financial services industry.
5. Identify current trends in the online career services industry.

14.9 REFERENCES

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UNIT -15: E-COMMERCE SERVICES

Structure

15.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Describe the major features of the online service sector.
- ✓ Discuss the trends taking place in the online financial services industry.
- ✓ Describe the major trends in the online travel services industry today.
- ✓ Identify current trends in the online career services industry.
- ✓ Understand the business models of on-demand service companies.

15.1 ONLINE FINANCIAL SERVICES

The online financial services sector is a shining example of an e-commerce successstory, but one with many twists and turns. While the innovative online firms such as E*Trade have been instrumental in transforming the brokerage industry, the impactsof e-commerce on the large, powerful banking, insurance, and real estate firms havebeen delayed by consumer resistance and the lack of industry innovation. For instance,

online-only banks have not displaced traditional banks. But e-commerce has neverthelesstransformed the banking and financial industries, as the major institutionshave deployed their own online applications to service an increasingly connectedonline customer base. Insurance has become more standardized and easier to purchaseonline. Although security is still a concern, consumers are much more willingto trust online sites with their financial information than in the past. Firms such asMint (now owned by Intuit), SmartyPig, Credit Karma, Moven, and Simple (now owned by Spanish banking giant BBVA) continue to show growth. Multi-channel, establishedfinancial services firms—the slow followers—also continue to show gains in onlinetransactions.

ONLINE FINANCIAL CONSUMER BEHAVIOR

Surveys show that consumers are attracted to financial sites and apps because of theirdesire to save time and access information rather than save money, although savingmoney is an important goal among the most sophisticated online financial households.

Most online consumers use financial services sites and apps for mundane financialmanagement, such as checking balances of existing accounts, and paying bills, mostof which were established offline. Once accustomed to performing mundane financialmanagement activities, consumers move on to more sophisticated capabilities such asusing personal financial management tools, making loan payments, and considering offers from online institutions. And in the last few years, increasing investments have been made in startup "fintech" companies that aim to unbundle traditional institutionalfinancial services and instead deliver specifically targeted consumer-oriented solutions,often via mobile devices and apps.

ONLINE BANKING AND BROKERAGE

NetBank and Wingspan Bank pioneered online banking in the United States in 1996and 1997, respectively. Although late by a year or two, the established brand-namenational banks have taken a substantial lead in market share as the percentage of theircustomers who bank online has grown rapidly. The top banks are all large, nationalbanks that also offer online banking: Bank of America, JPMorgan Chase, Citigroup,and Wells Fargo. Major direct banks (those that operate without a network of branchesor branded ATMs) include Ally Bank, EverBank, Discover Bank, Capital One 360,Bank of Internet USA, State Farm Bank, and USAA. These direct banks have seencustomer deposits grow faster than regular banks, indicating their growing popularity,particularly with younger customers. Several startups have also moved into theonline banking and financial services spaces. For instance, Moven offers debit account services linked with online and mobile financial management tools. Simple, ownedby Spanish bank BBVA, provides checking accounts linked to debit cards in additionto financial management tools.

In 2016, according to a December 2016 European Commission survey, almost twothirdsof the adult U.K. population use online banking. Mobile banking has become animportant banking channel for all age groups, with 55% of U.K. mobile phone usersindicating that they use mobile banking. While online banking has become a primarybanking channel for all age groups, Millennials (those in the 18- to 34-year-old group) are adopting mobile banking at a much higher rate than those who are older. Topmobile banking activities include checking balances and bank statements, transferringmoney from one account to another, paying bills, making bill payments, and depositingchecks using smartphone apps that snap a photo of the check. Security issues stilldeter some. A survey by Javelin Strategy & Research found that about 45% of thosesurveyed

cited security concerns as the reason why they did not use mobile banking services.From the bank's perspective, online and mobile banking can provide significantcost savings. According to Javelin Strategy & Research, the average in-person transactionat a bank branch costs $4.25, while an online transaction costs 19 cents, and amobile transaction, just 10 cents.

The history of online brokerage has been similar to that of online banking. Early innovators such as E*Trade have been displaced from their leadership positions interms of numbers of online accounts by discount broker pioneer Charles Schwab andfinancial industry giant Fidelity.

According to one survey, about 25% of U.S. Internet users interact digitally withonline brokerage firms. The use of mobile devices and apps for this purpose is increasing, particularly among Millennials. According to a recentE*Trade survey, nearly 80% of Millennials reported using a smartphone/investingapp, with 50% doing so more than once a week.

The most frequent activities conducted on mobile devices include monitoring one'sportfolio and the market, getting stock quotes, placing and checking on orders, anddoing general financial research. The top trading website among U.S. Internet usersin 2016 is Fidelity Investments, with around 6.9 million monthly unique visitors. The major online brokerage firms are investing significantly in searchengine marketing, and are among the biggest spenders in the paid search market. Theyare also increasingly using social media to engage with customers, although they must be careful to comply with all regulations and rules as they do so. For instance, somebrokerage firms use Twitter to deliver commentary, company information, marketing,and customer service. A new wave of online financial advisors, sometimes referred to as robo-advisors, offer inexpensive automated investment management tools andadvice. Examples of companies that have attracted venture capital interest include Betterment, Wealthfront, and Personal Capital Corp. Similarservices are also offered by major online brokerage firms such as Vanguard and Schwab.

Multi-Channel vs. Pure Online Financial Services Firms

Online consumers prefer to visit financial services sites that have physical outlets orbranches. In general, multi-channel financial services firms that have both physicalbranches or offices and solid online offerings are growing faster than pure-onlinefirms that have no physical presence, and they are assuming market leadership aswell. Traditional banking firms have literally thousands of branches where customerscan open accounts, deposit money, take out loans, find

home mortgages, and rent asafety deposit box. Top online brokerage firms do not have the same physical footprintas the banks do, but each has a strong physical presence or telephone presenceto strengthen its online presence. Fidelity has walk-in service center branches, but itrelies primarily on the telephone for interacting with investors. Charles Schwab has investment centers around the country as an integral part of its online strategy. Pure-online banks and brokerages cannot provide customers with some services that still require a face-to-face interaction.

Financial Portals and Account Aggregators

Financial portals are sites that provide consumers with comparison shopping services,independent financial advice, and financial planning. Independent portals donot themselves offer financial services, but act as steering mechanisms to onlineproviders. They generate revenue from advertising, referral fees, and subscriptionfees. For example, Yahoo's financial portal, Yahoo Finance, offers consumers theability to track their stock portfolio, market overviews, real-time stock quotes, news, financial advice, and streaming video interviews with financial leaders. Other independentfinancial portals include Intuit's Quicken, MSN's MSN Money, and CNNMoney. A host of financial portal sites have sprung up to help consumers withfinancial management and planning such as Mint (owned by Intuit), SmartyPig, andCredit Karma.

Account aggregation is the process of pulling together all of a customer's financial(and even nonfinancial) data at a single personalized website, including brokerage,banking, insurance, loans, frequent flyer miles, personalized news, and much more. The leading provider of account aggregation technology is EnvestnetYodlee. Ituses screen-scraping and other techniques to pull information from 14,000 differentdata sources. A smart-mapping technology is also used so that if the underlying websiteschange, the scraping software can adapt and still find the relevant information. Today, EnvestnetYodlee is used by over 1,000 leading financial institutions and companies,including 11 of the 20 largest U.S. banks, and this network reaches more than100 million end users.

ONLINE MORTGAGE AND LENDING SERVICES

During the early days of e-commerce, hundreds of firms launched pure-play onlinemortgage sites to capture the U.S. home mortgage market. Early entrants hoped toradically simplify and transform the traditional mortgage value chain process, dramaticallyspeed up the loan closing process, and share the economies with consumers by offering lower rates. By 2003, over half of these early-entry, pure-online firms had failed. Early pure playonline mortgage institutions had difficulties developing a brand name at anaffordable price and failed to simplify the mortgage generation process. They endedup suffering from high start-up and administrative costs, high customer acquisitioncosts, rising interest rates, and poor execution of their strategies.

Despite this rocky start, the online mortgage market is slowly growing; it is dominatedby established online banks and other online financial services firms, traditionalmortgage vendors, and a few successful online mortgage firms.

Many mortgage shoppers research mortgages online, but few actually apply onlinebecause of the complexity of mortgages. Most mortgages today are written by intermediarymortgage brokers, with banks still playing an important origination role butgenerally not servicing mortgages they originate.

Although online mortgage originations currently represent a small percentage ofall mortgages, their number is expected to continue to grow slowly but surely overthe next several years. In November 2015, Intuit's Quicken Loans introduced RocketMortgage, which allows borrowers to be fully approved for a mortgage in under tenminutes. The applicant only needs to provide a few details, such as birth date, social security number, and home address, and then Rocket Mortgage uses that data toautomatically obtain various types of information without the need for the borrowerto manually provide any further documentation. The system then displays variousloan options, and once the borrower selects one, all necessary documents (except forfinal closing documents) can be signed online using a secure portal.

Consumer benefits from online mortgages include reduced application times,market interest rate intelligence, and process simplification that occurs when participantsin the mortgage process (title, insurance, and lending companies) share acommon information base. Mortgage lenders benefit from the cost reduction involvedin online processing of applications, while charging rates marginally lower than traditional bricks-and-mortar institutions.

Nevertheless, the online mortgage industry has not transformed the process ofobtaining a mortgage. A significant brake on market expansion is the complexity ofthe mortgage process, which requires physical signatures and documents, multipleinstitutions, and complex financing details—such as closing costs and points—that aredifficult for shoppers to compare across vendors. Nevertheless, as in other areas, the ability of shoppers to find low mortgage rates online has helped reduce the fees andinterest rates charged by traditional mortgage lenders. Online lending services have alsobecome popular. The biggest online lenders include Lending Club, which went public inDecember 2014, but has faced diminishing returns in 2016, Prosper (a peer-to-peer loanmarketplace), and Social Finance Inc. (SoFi), which focuses primarily on student loans.

ONLINE INSURANCE SERVICES

In 1995, the price of a $500,000 20-year term life policy for a healthy 40-year-old malewas $995 a year. In 2016, the same policy could be had for around $345—a decline ofabout 65%—while other prices have risen 15% in the same period. In a study of theterm life insurance business, Brown and Goolsbee discovered that Internet usage ledto an 8%–15% decline in term life insurance prices industry-wide (both offline andonline), and increased consumer surplus by about $115 million per year (and hence reduced industry profits by the same amount) (Brown and Goolsbee, 2000). Pricedispersion for term life policies initially increased, but then fell as more and morepeople began using the Internet to obtain insurance quotes.

Unlike books and CDs, where online price dispersion is higher than offline, andin many cases online prices are higher than offline, term life insurance stands out asone product group supporting the conventional wisdom that the Internet will lowersearch costs, increase price comparison, and lower prices to consumers. Term life insurance is a commodity product, however, and in other insurance product lines,the Web offers insurance companies new opportunities for product and service differentiationand price discrimination.

The insurance industry forms a major part of the financial services sector. It hasfour major segments: automobile, life, health, and property and casualty. Insuranceproducts can be very complex. For example, there are many different types of nonautomotiveproperty and casualty insurance: liability, fire, homeowners, commercial,workers' compensation, marine, accident, and other lines such as vacation insurance.

Writing an insurance policy in any of these areas is very information-intense, oftennecessitating personal inspection of the properties, and it requires considerable actuarialexperience and data. The life insurance industry has also developed life insurancepolicies that defy easy comparison and can only be explained and sold by anexperienced sales agent. Historically, the insurance industry has relied on thousands of local insurance offices and agents to sell complex products uniquely suited to thecircumstances of the insured person and the property. Complicating the insurancemarketplace is the fact that the insurance industry is not federally regulated, but ratheris regulated by 50 different state insurance commissions that are strongly influenced
by local insurance agents. Before a website can offer quotations on insurance, it mustobtain a license to enter the insurance business in all the states where it providesquotation services or sells insurance.

Like the online mortgage industry, the online insurance industry has been verysuccessful in attracting visitors who are looking to obtain prices and terms of insurancepolicies. While many national insurance underwriting companies initially did not offercompetitive products directly online because it might injure the business operations oftheir traditional local agents, the websites of almost all of the major firms now provide the ability to obtain an online quote. Even if consumers do not actually purchaseinsurance policies online, the Internet has proven to have a powerful influence onconsumer insurance decisions by dramatically reducing search costs and changing theprice discovery process. According to a 2015 survey, over 70% of American consumerslooked for life insurance information online, with 30% indicating that the Internet was their most valuable source of information. However, consumers also continue to relyon financial advisors as well for advice, with over half seeking information from bothsources. Another survey found that nearly 2 in 3 consumers who own amobile device said they already have or plan to use those devices to access services totheir life insurance policies. Other forms of insurance are more likelyto be purchased online. For instance, according to a 2015 comScore study, the onlinechannel continues to be consumers' preferred method for shopping for auto insurancepolicies, with over 70% of shoppers getting an online quote. Insurancecompanies are also making increased use of social media. For instance, a LIMRAsurvey found that over 90% of life insurance companies had social media programs,up from 60% in 2010. Facebook and LinkedIn are the most popular platforms, bothused by over 90%. All of the major insurers, such as GEICO, Allstate,State Farm, Progressive, and Travelers, have a significant online presence.

Some of theleading online insurance services companies include InsWeb, Insure.com, Insurance.com, QuickQuote, and NetQuote.

ONLINE REAL ESTATE SERVICES

During the early days of e-commerce, real estate seemed ripe for an Internet revolutionthat would rationalize this historically local, complex, and local agent-drivenindustry that monopolized the flow of consumer information. Potentially, the Internetand e-commerce might have disintermediated this huge marketspace, allowingbuyers and sellers, renters and owners, to transact directly, lower search costs tonear zero, and dramatically reduce prices. However, this did not happen. What did happen is extremely beneficial to buyers and sellers, as well as to real estate agents.

At one point, there were an estimated 100,000 real estate sites on the Internet worldwide.Many of these sites have disappeared. However, the remaining online siteshave started to make headway toward transforming the industry. In addition, mostlocal real estate brokers in the United States have their own agency websites to dealwith clients, in addition to participating with thousands of other agencies in multiplelisting services that list homes online. Some of the major online real estate sites are

Realtor.com and its parent, Move.com,Zillow and Trulia (now owned by the same company), HomeGain, ZipRealty, Craigslist,and Redfin. Zillow and Trulia together account for over 35% of all desktop andmobile visits to real estate sites in 2016, while Realtor.com attracts about 12% of traffic. Real estate differs from other types of online financial services because it is impossibleto complete a property transaction online. Clearly, the major impact of Internetreal estate sites is in influencing offline decisions. The Internet has become a compellingmethod for real estate professionals, homebuilders, property managers andowners, and ancillary service providers to communicate with and provide informationto consumers. According to the National Association of Realtors, the first step in the home buying process for nearly all ages of home buyers was to look online. Websiteswere the most common information source, used by almost 90%, while mobile sitesand apps and mobile search were each also used by over 50%. At the same time, 87%also used the services of a real estate agent.The primary service offered by real estate sites is a listing of houses available.In 2016, Realtor.com, the official site of the National Association of Realtors, listedover 3 million homes and had around 40 million unique users across desktop

andmobile devices in April 2016. Listings typically feature detailed propertydescriptions, multiple photographs, and virtual 360-degree tours. Consumers can link tomortgage lenders, credit reporting agencies, house inspectors, and surveyors. There arealso online loan calculators, appraisal reports, sales price histories by neighborhood, school district data, crime reports, and social and historical information on neighborhoods. Some online real estate brokers now charge substantially less than traditionaloffline brokers who typically charge 6% of the sale price. They can do this becausethe buyers (and in some cases, the sellers) do much of the work of traditional realestate agents, such as prospecting, choosing neighborhoods, and identifying houses of interest prior to contacting an online agent. For instance, Move (the parent companyof Realtor.com) also offers a "Find a Neighborhood" feature that allows users to choosethe type of neighborhood they want to live in by weighing factors such as the quality(and tax costs) of schools, age of the population, number of families with childrennearby, and available social and recreational services. Move also offers mobile appsfor the iPad and iPhone, Android, and Windows phones. For instance, the Area Scout function allows users to see the list prices of all homes in a neighborhood on the street level.

Despite the revolution in available information, there has not been a revolutionin the industry value chain. Online listings are provided by local multiple listing servicessupported by local real estate agents. Sometimes, addresses of the houses arenot available, and online users are directed to the local listing agent who is hired bythe seller. Traditional hands-on real estate brokers will show the house and handle alltransactions with the owner to preserve their fees, typically ranging from 5% to 6% of the transaction.

15.2 ONLINE TRAVEL SERVICES

Online travel is one of the most successful B2C e-commerce segments. The Internet hasbecome the most common channel used by consumers to research travel options, seekthe best possible prices, and book reservations for airline tickets, hotel rooms, rentalcars, cruises, and tours. Today, more travel is booked online than offline. In the UnitedKingdom in 2016, about 30 million (over two-thirds of all U.K. Internet users) researchedtravel and about 27 million booked travel online. Worldwide online travel services revenuesreached over €525 billion in 2016 and are expected to continue growing to over €760 billion by 2020.

THE ONLINE TRAVEL MARKET

There are four major sectors in the travel market: airline tickets, hotel reservations,car rentals, and travel packages. Airline tickets are the source of the greatest amountof revenue in online travel. Airline reservations are largely a commodity. They canbe easily described online. The same is true with car rentals; most people can reliablyrent a car over the phone or online and expect to obtain what they ordered. Althoughhotels are somewhat more difficult to describe, hotel branding, supplemented by websites that include descriptions, photographs, and virtual tours, typically providesenough information to most consumers to allow them to feel as if they know what theyare purchasing, making them comfortable enough to make hotel reservations online.

Travel packages purchased online constituted the smallest percentage of travel sales.Increasingly, corporations are outsourcing their travel offices entirely to vendorswho can provide web-based solutions, high-quality service, and lower costs. Online vendorsto corporations provide **corporate online booking solutions (COBS)** that provide integratedairline, hotel, conference center, and auto rental services at a single site.

ONLINE TRAVEL INDUSTRY DYNAMICS

Because much of what travel agency sites offer is a commodity, and thus they face thesame costs, competition among online providers is intense. Price competition is difficultbecause shoppers, as well as online site managers, can comparison shop easily. Therefore,competition among sites tends to focus on scope of offerings, ease of use, payment options, and personalization.

The online travel services industry has gone through a period of intense consolidation.Expedia now owns Travelocity, Orbitz, CheapTickets, Hotels.com, Hotwire, andmeta-search engine Trivago, giving it a 75% market share among U.S. online travelagencies. Its primary competition consists of Priceline, which owns Booking.com,Lowestfare.com, and Kayak. Together, Expedia and Priceline control a whopping 95% of the online travel agency booking market. However, Google is also poised to becomea player in the market, with its Google Flights and Google Hotel Finder that alsoprovide booking functionality. The U.S. Department of Justice also cited the TripAdvisor’sintroduction of an Instant Booking service as a factor in its approval of

Expedia'sacquisition of Orbitz.In addition to industry consolidation, the online travel industry has been roiledby meta-search engines that scour the Web for the best prices on travel and lodging, and then collect finder or affiliate fees for sending consumers to the lowest-price sites. Travel aggregator sites include Trivago, Kayak, Fly.com, and Mobissimo. These sites,in the eyes of many industry leaders, commoditize the online travel industry evenfurther, cause excessive price competition, and divert revenues from the leading,branded firms who have made extensive investments in inventory and systems.Mobile devices and apps used for pre-trip planning, booking, check-in, andcontext and location-based destination information are also transforming the onlinetravel industry. For instance, in the United States in 2016, about 75 million people are expected to use a mobile device to research travel. Around 59 million are expectedto actually book travel using a mobile device in 2016. Smartphones are used slightlymore than tablets to both research and book travel.

Most of the major airlines now have apps for a variety of mobile platforms to enableflight research, booking, and management. Apps from hotels and car rental companiesare available from most of the major players such as Hertz and Avis for carrentals, and Best Western, Choice Hotels, Hilton, and Starwood for hotels. Apps maysometimes target specific consumer behavior. For instance, Expedia reports that 25%of its mobile hotel sales are made at properties within 10 miles of the user's currentlocation, indicating that they are searching for and booking rooms on-the-go, as they travel. Mobile devices are also proving to be quite popular for booking at the lastminute. Marriott says that 35% of its smartphone bookings are for same-day travel.

Social media is also having a big impact on the online travel industry. User-generatedcontent and online reviews are having an increasing influence on travel-buyingdecisions. The *Insight on Society* case, *Phony Reviews*, examines some of the issues thispresents for the industry.

15.3 ONLINE CAREER SERVICES

Next to travel services, one of the Internet's most successful online services has beenjob services (recruitment sites) that provide a free posting of individual resumes, plusmany other related career services; for a fee, they also list job openings posted bycompanies. Career services sites collect revenue from other sources as well, by providingvalue-added services to users and collecting fees from related service providers. The U.S. online job market is dominated by two large players: Monster, withabout 17 million unique monthly visitors, and CareerBuilder, with

about 14 million.Job listing aggregators, such as Indeed and SimplyHired, both owned by a Japanesebasedhuman resources company, and Glassdoor, which also posts anonymous onlinereviews of companies by their employees, are also very popular. LinkedIn has alsobecome an increasingly important player in this market.Traditionally, companies have relied on five employee recruitment tools: classifiedand print advertising, career expos (or trade shows), on-campus recruiting, privateemployment agencies (now called "staffing firms"), and internal referral programs.In comparison to online recruiting, these tools have severe limitations. Print advertisingusually includes a per-word charge that limits the amount of detail employersprovide about a job opening, as well as a limited time period within which the job isposted. Career expos do not allow for pre-screening of attendees and are limited by theamount of time a recruiter can spend with each candidate. Staffing firms charge highfees and have a limited, usually local, selection of job hunters. On-campus recruiting also restricts the number of candidates a recruiter can speak with during a normal visitand requires that employers visit numerous campuses. And internal referral programsmay encourage employees to propose unqualified candidates for openings in order toqualify for rewards or incentives offered.

Online recruiting overcomes these limitations, providing a more efficient andcost-effective means of linking employers and potential employees, while reducing thetotal time to hire. Online recruiting enables job hunters to more easily build, update,and distribute their resumes while gathering information about prospective employersand conducting job searches.

IT'S JUST INFORMATION: THE IDEAL WEB BUSINESS?

Online recruitment is ideally suited for the Web. The hiring process is an informationintensebusiness process that involves discovering the skills and salary requirementsof individuals and matching them with available jobs. In order to accomplish thismatchup, there does not initially need to be face-to-face interaction, or a great dealof personalization. Prior to the Internet, this information sharing was accomplishedlocally by human networks of friends, acquaintances, former employers, and relatives, in addition to employment agencies that developed paper files on job hunters.The Internet can clearly automate this flow of information, reducing search time andcosts for all parties.

Why are so many job hunters and employers using Internet job sites? Recruitmentsites are popular largely because they save time and money for both job hunters andemployers seeking

recruits. For employers, the job boards expand the geographicalreach of their searches, lower costs, and result in faster hiring decisions.

For job seekers, online sites are popular not only because their resumes canbe made widely available to recruiters but also because of a variety of other relatedjob-hunting services. The services delivered by online recruitment sites have greatlyexpanded since their emergence in 1996. Originally, online recruitment sites justprovided a digital version of newspaper classified ads. Today's sites offer many otherservices, including skills assessment, personality assessment questionnaires, personalizedaccount management for job hunters, organizational culture assessments, jobsearch tools, employer blocking (prevents your employer from seeing your posting), employee blocking (prevents your employees from seeing your listings if you are theiremployer), and e-mail notification. Online sites also provide a number of educationalservices such as resume writing advice, software skills preparation, and interview tips.

For the most part, online recruitment sites work, in the sense of linking job hunters with jobs, but they are just one of many ways people actually find jobs. Asurvey by The Conference Board found that the majority (70%) of job seekers relyequally on both the Internet and newspapers to look for jobs, with about half relyingon word-of-mouth leads, and about a quarter on employment agencies. Given that thecost of posting a resume online is zero, the marginal returns are very high.The ease with which resumes can be posted online has also raised new issues forboth job recruiters and job seekers. If you are an employer, how do you sort throughthe thousands of resumes you may receive when posting an open job? If you are a job seeker, how do you stand out among the thousands or even millions of others? Perhapsone way is to post a video resume. In a survey by Vault, nearly nine in 10 employerssaid they would watch a video resume if it were submitted to them, in part because itwould help them better assess a candidate's professional presentation and demeanor, and over half said they believed video would become a common addition to futurejob applications. CareerBuilder became the first major online job site to implement avideo resume tool for job candidates, following a previous launch for an online videobrand-building tool for employers.

Perhaps one of the most important functions of online recruitment sites is not somuch their capacity to actually match employers with job hunters but their ability toestablish market prices and terms, as well as trends in the labor market. Online recruitmentsites identify salary levels for

both employers and job hunters and categorize theskill sets required to achieve those salary levels. In this sense, online recruitment sitesare online national marketplaces that establish the terms of trade in labor markets.

The existence of online national job sites should lead to a rationalization of wages,greater labor mobility, and higher efficiency in recruitment and operations becauseemployers will be able to quickly find the people they need.

ONLINE RECRUITMENT INDUSTRY TRENDS

Trends for 2016–2017 in the online recruitment services industry include the following:

- **Social recruiting:** According to a recent survey of over 1,600 recruiters and humanresource professionals, 87% use social recruiting, with LinkedIn being a primaryresource. LinkedIn, probably the most well-known business-orientedsocial network, has grown significantly to over 450 million members representingover 170 different industries in over 200 countries as of October 2016. LinkedIn'scorporate hiring solutions are used by over 90 of the Fortune 100 companies, andmore than 3 million companies have a LinkedIn page. Consumers are using sitessuch as LinkedIn to establish business contacts and networks. For instance, accordingto LinkedIn, its members do almost 6 billion professionally-oriented searcheson LinkedIn a year. Employers are also using LinkedIn to conduct searches to findpotential job candidates that may not be actively job hunting. For instance, LinkedInoffers companies a feature called LinkedIn Talent Solutions that includes tools thathelp corporate recruiters find "passive talent" (people who are not actively lookingfor a new job), as well as custom company profiles that are specifically designedfor recruitment. According to LinkedIn Talent Solutions, U.S. company reliance onsocial recruiting to find quality employees has increased by over 50% since 2011,with 44% of those surveyed indicating that social recruiting was the most importantsource for key positions (LinkedIn Talent Solutions, 2016). Social network sites arealso being used by employers to "check up" on the background of job candidates. Astudy by Harris Interactive of over 2,000 managers and human resource employeesfound that over 60% are using social networks to screen job candidates, and almost50% have rejected candidates because of content on a social site. Employers typically

- search Facebook, Twitter, and Linked In. Provocative or inappropriate photoswere the biggest negative factor followed by drinking and drug references. However,on the flip side, recruiters also noted that not having any online presence at all alsohurts candidates, with more than a third indicating that they would be less likely tointerview a job candidate if they cannot find information about that person online.
- **Mobile:** As with other forms of services, career services firms have also moved ontothe mobile platform. A recent survey found that mobile devices were the primarydevices used by Millennials and Gen X to search for jobs. To reach this audience, CareerBuilder, Monster, LinkedIn, and most of the othermajor sites all have a mobile website, as well as apps that allow job seekers to createand upload resumes, search jobs by keyword, location, and company, e-mail jobs,browse and apply, and more. LinkedIn's app, for instance, can also recommendjobs based on data you provide on your profile page. In 2016, mobile accounts forabout 55% of the unique members visiting LinkedIn.
- **Job search engines/aggregators:** As with travel services, search engines thatfocus specifically on jobs are posing a new threat to established online career sites.For instance, Indeed, SimplyHired, and Us.jobs "scrape" listings from thousands ofonline job sites such as Monster, CareerBuilder, specialty recruiting services, andthe sites of individual employers to provide a free, searchable index of thousands of job listings in one spot. Because these firms do not charge employers a listingfee, they are currently using a pay-per-click or other advertising revenue model.
- **Data analytics and algorithms:** Companies are increasingly using big data technologiesin the hiring process, as well as adaptive algorithms that help them matchjob seekers to job openings.
- **Hiring by algorithm:** Companies are increasingly using algorithms to sift onlinejob applications, focusing on key words to match job seekers with jobs.

15.4 ON DEMAND SERVICE COMPANIES

On-demand service companies provide a platform that enables the on-demand deliveryof various services, by connecting providers ("sellers") who wish to exploit their"spare" resources, such as cars, rooms with beds, and ability to perform various servicesvia their personal labor, with consumers ("buyers") who would like to utilize thoseresources and services. Other common

phrases sometimes used to describe these online businesses are “sharing economy,” “collaborative commerce,” “peer to peerconsumption,” “mesh economy,” and “we-commerce.” However, unlike traditionalsharing where there is no fee charged in the transaction, these firms collect a fee fromboth sellers and buyers for using their platforms. In the last few years, hundreds of startups have created a plethora of such platforms that allow owners of resources that
are underutilized to sell access to those resources to consumers who would prefer notto, or are unable to, buy those resources themselves.

A number of these on-demand service firms have grown exponentially over thelast five years. Collaborative commerce, trading platforms, and peer-to-peer commerce are notnew. While eBay involves the sale of items at auction or for fixed prices, on-demandservice firms provide sell access to cars, room, spaces, and even skilled people. Whatis new about these firms is their use of mobile and Internet technology to enabletransactions on their platforms. This is especially true of the car and lodging serviceswhere transactions are local and mobile. Second, the growth of these firms is supported
by the use of online reputation systems based on peer review, to establish a trustedenvironment where sellers and consumers can feel confident transacting with oneanother. Online peer review of both the providers and the consumers helps to ensurethat both parties have acceptable reputations, and that a high quality of service is provided.These firms have learned from eBay and Netflix the importance of peer reviewsand ratings. A third factor is that successful firms lower the cost of services like urban
transportation, lodging, office space, and personal errand services. Firms that can dothis are highly disruptive of existing firms and business models. Uber and Airbnb are among the most successful and well-known on-demandservice companies. focused on the short-term lodging market. Deliveroo is another example of the ondemand services model. Similar to Grubhub in the United States, Deliveroo focuses onthe on-demand delivery of take-out orders from restaurants. Deliveroo was launched
in London in 2013, partnering initially with just three Chelsea-based restaurants, butby 2016, had expanded to more 60 cities around the globe in Europe, the Middle East,and Asia, with over 5,000 delivery drivers. The company grew by over 650% in 2016,and in 2016 raised £210 million at a reported valuation of £820 million. However, itfaces many of the same issues as other on-demand delivery services. It too is facing challenges over its classification of drivers as

self-employed, with law firm Leigh Dayannouncing in January 2017 that it was advising Deliveroo drivers on potential legalaction over their rights, including the right to be paid the national minimum wage andreceive holiday pay.

15.5 CHECK YOUR PROGRESS

1. **What is account aggregation?**
2. Describe the major trends in the online travel services industry today.
3. Why are on-demand service companies viewed as being disruptive and controversial?

Answers to Check Your Progress

16. the process of pulling together all of a customer's financial (and even nonfinancial) data at a single personalized website
17. i. The Internet has become the most common channel used by consumers to research travel options and book reservations for airline tickets, rental cars, hotel rooms, and tours.

    ii. The major trends in online travel services include consolidation, the rise of meta-search engines, mobile devices, and social media.
18. The companies collect a fee both from sellers and buyers for using the platform.

15.6 SUMMARY

In this unit we described the major features of the online service sector.

• The service sector is the largest and most rapidly expanding part of the economy of advanced industrialnations.

• The major service industry groups are financial services, insurance, real estate, business services, andhealth services.

• Within these service industry groups, companies can be further categorized into those that involve transactionbrokering and those that involve providing a "hands-on" service.

• With some exceptions, the service sector is by and large a knowledge- and information-intense industry. For this reason, many services are uniquely suited to e-commerce and the strengths of the Internet.

• E-commerce offers extraordinary opportunities to improve transaction efficiencies and thus productivity in a sector where productivity has so far not been markedly affected by the explosion in information technology

15.7 KEYWORDS

- **transaction brokering -** acting as an intermediary to facilitate a transaction
- **financial portals -** sites that provide consumers with comparison shopping services, independent financial advice, and financial planning
- **account aggregation -** the process of pulling together all of a customer's financial (and even nonfinancial) data at asingle personalized website
- **corporate online booking solutions (COBS) -** provide integrated airline, hotel, conference center, and auto rental services at a single site

15.8 SELF ASSESSMENT QUESTIONS

1. Why are online travel services such an ideal service for the Internet?
2. How has the insurance industry been impacted by the Internet?
3. Describe three ways that social networking has affected the online recruitment industry.
4. Describe the business model of on-demand service companies.
5. What are two major trends currently affecting the online travel industry?

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UNIT -16: B2B E-COMMERCE

Structure

16.0 OBJECTIVES

After studying this unit, you will be able to:

- ✓ Discuss the evolution and growth of B2B e-commerce, as well as its potential benefits and challenges.
- ✓ Understand how procurement and supply chains relate to B2B e-commerce.
- ✓ Identify major trends in supply chain management and collaborative commerce.
- ✓ Understand the different characteristics and types of Net marketplaces.
- ✓ Understand the objectives of private industrial networks, their role in supporting collaborative commerce, and the barriers to their implementation.

16.1 OVERVIEW

The trade between business firms represents a huge marketplace. The total amountof B2B trade in the United States in 2016 is expected to be about $14.5 trillion, withB2B e-commerce contributing about $6.7 trillion of that amount. By 2020, B2B e-commerce is expected to grow to about $9 trillion in the United States. Worldwide, B2B e-commerce is estimated to be around€19.8 trillion in 2016 (UNCTAD, 2016).

The process of conducting trade among business firms is complex and requiressignificant human intervention, and therefore, consumes significant resources. Somefirms estimate that each corporate purchase order for support products costs them,on average, at least $100 in administrative overhead. Analysts estimate that the costof a single manual order entry is about $10.50 when handled by a sales rep on thetelephone. A digital order cost is estimated to be 25 to 50 cents. Administrative overheadincludes processing paper, approving purchase decisions, spending time using thetelephone and fax machines to search for products and arrange for purchases, arrangingfor shipping, and receiving the goods. Across the economy, this adds up to trillionsof dollars annually being spent for procurement processes that could potentially beautomated. If even just a portion of inter-firm trade were automated, and parts of theentire procurement and sales process assisted by the Internet, then literally trillions ofdollars might be released for more productive uses, consumer prices potentially wouldfall, productivity would increase, and the economic wealth of the nation would expand.

This is the promise of B2B e-commerce. The challenge of B2B e-commerce is changingexisting patterns and systems of procurement on the supply chain side, and designingand implementing new marketing and distribution systems on the B2B sell side.

SOME BASIC DEFINITIONS

Before the Internet, business-to-business transactions were referred to simply as *interfirmtrade* or the *procurement process*. We use the term **B2B commerce** to describe alltypes of inter-firm trade to exchange value across organizational boundaries, involvingboth the purchase of inputs and the distribution of products and services. B2B commerceincludes the following business processes: customer relationship management,

demand management, order fulfilment, manufacturing management, procurement,product development, returns, logistics/transportation, and inventory management. This definition of B2B commerce does not include transactions thatoccur within the boundaries of a single firm—for instance, the transfer of goods andvalue from one subsidiary to another, or the use of corporate intranets to manage thefirm. We use the term **B2B e-commerce** (or **B2B digital commerce**) to describespecifically that portion of B2B commerce that is enabled by the Internet (includingmobile apps). The links that connect business firms in the productionof goods and services are referred to as the supply chain. **Supply chains** are a complex system of organizations, people, business processes, technology, and information,all of which need to work together to produce products efficiently. Today's supplychains are often global, connecting the smartphones in New York to the shipyards inLos Angeles and Qingdao, and to the Foxconn factories that produce the phones. They are also local and national in scope.

THE EVOLUTION OF B2B E-COMMERCE

B2B e-commerce has evolved over a 35-year period through several technology-drivenstages. The first step in the development of B2B e-commerce in themid-1970s was **automated order entry systems** that involved the use of telephonemodems to send digital orders to health care products companies such as BaxterHealthcare. Baxter, a diversified supplier of hospital supplies, placed telephonemodems in its customers' procurement offices to automate reordering from Baxter'scomputerized inventory database (and to discourage reordering from competitors).

This early technology was replaced by personal computers using private networks inthe late 1980s, and by Internet workstations accessing electronic online catalogs in the late 1990s. Automated order entry systems are **seller-side solutions**. They areowned by the suppliers and are seller-biased markets—they show only goods from asingle seller. Customers benefited from these systems because they reduced the costsof inventory replenishment and were paid for largely by the suppliers. Automated order entry systems continue to play an important role in B2B commerce.

By the late 1970s, a new form of computer-to-computer communication called **electronic data interchange (EDI)** emerged. We describe EDI in greater detail laterin this chapter, but at this point, it is necessary only to know that EDI is a communicationsstandard for sharing business documents such as invoices, purchase orders,shipping bills, product stocking numbers (SKUs), and settlement information amonga small number of firms. Virtually all large firms have EDI systems, and most industry groups have industry standards for defining documents in that industry. EDI systems are owned by the buyers, hence they are **buyer-side solutions** and buyer-biasedbecause they aim to reduce the procurement costs of supplies for the buyer. Of course,by automating the transaction, EDI systems also benefit the sellers through customercost reduction. The topology of EDI systems is often referred to as a **hub-and-spokesystem**, with the buyers in the center and the suppliers connected to the central hubvia private dedicated networks.

EDI systems generally serve vertical markets. A **vertical market** is one that provides expertise and products for a specific industry, such as automobiles. In contrast,**horizontal markets** serve many different industries.

B2B e-commerce websites emerged in the mid-1990s along with the commercializationof the Internet. **B2B e-commerce websites** are perhaps the simplest andeasiest form of B2B e-commerce to understand, because they are just online catalogsof products made available to the public marketplace by a single supplier. In this sense,they mimic the functionality of B2C e-commerce websites. Owned by the supplier,they are seller-side solutions and seller-biased because they show only the products offered by a single supplier.

B2B e-commerce websites are a natural descendant of automated order entrysystems, but there are two important differences: (1) the far less expensive and moreuniversal Internet becomes the communication media and displaces private networks,and (2) B2B e-commerce websites tend to serve horizontal markets—they carryproducts that serve a wide variety of industries. Although

B2B e-commerce websitesemerged prior to Net marketplaces (described next), they are usually considered a type of Net marketplace.

Net marketplaces emerged in the late 1990s as a natural extension and scaling-upof B2B e-commerce websites. We also use the term Net marketplace to referto Internet-enabled marketing, distribution, and sales systems.Private industrial networks also emerged in the last decade as natural extensionsof EDI systems and the existing close relationships that developed between largeindustrial firms and their trusted suppliers.

THE GROWTH OF B2B E-COMMERCE

Figure 16.2 illustrates the growth of B2B e-commerce, as well as that of traditionalB2B commerce, during the period 2011–2020. However, let's focus on the growth ofB2B e-commerce during the period 2016–2020. During this time, B2B e-commerce isprojected to grow from about $6.7 trillion in 2016 (about 46% of total B2B commerce inthe United States) to $9 trillion (51% of total B2B commerce) in 2020. Several observations are important to note with respect to Figure 16.2. First, it shows that the initialbelief that online marketplaces would become the dominant form of B2B e-commerceis not supported even though their growth rate has increased as firms like Amazon andeBay establish Net marketplaces. Second, private industrial networks play a dominantrole in B2B e-commerce, both now and in the future. Third, non-EDI B2B e-commerce is the most rapidly growing type of B2B e-commerce. However, EDI remains quitecommon and continues to be a workhorse of B2B commerce even though its growthis expected to be relatively flat in the five four years. Not all industries will be similarly affected by B2B e-commerce, nor will all industriessimilarly benefit from B2B. Several factors influence the speed with which industriesmigrate to B2B e-commerce and the volume of transactions. Those industriesin which there is already significant utilization of EDI (indicating concentration ofbuyers and suppliers) and large investments in information technology and Internetinfrastructure can be expected to move first and fastest to B2B e-commerce utilization.

The aerospace and defense, computer, and industrial equipment industries meet thesecriteria. Where the marketplace is highly concentrated on either the purchasing orselling side, or both, conditions are also ripe for rapid B2B e-commerce growth, as in the energy and chemical industries. In the case of health care, the federal government,health care providers (doctors and hospitals), and major insurance companiesare moving toward a national medical record system

and the use of the Internet for managing medical payments. Coordinating the various players in the health caresystem is an extraordinary B2B challenge. Firms like IBM and Microsoft, and B2Bservice firms like SAP Ariba, are expanding the use of information ecosystems wherehealth providers and insurers can share information.

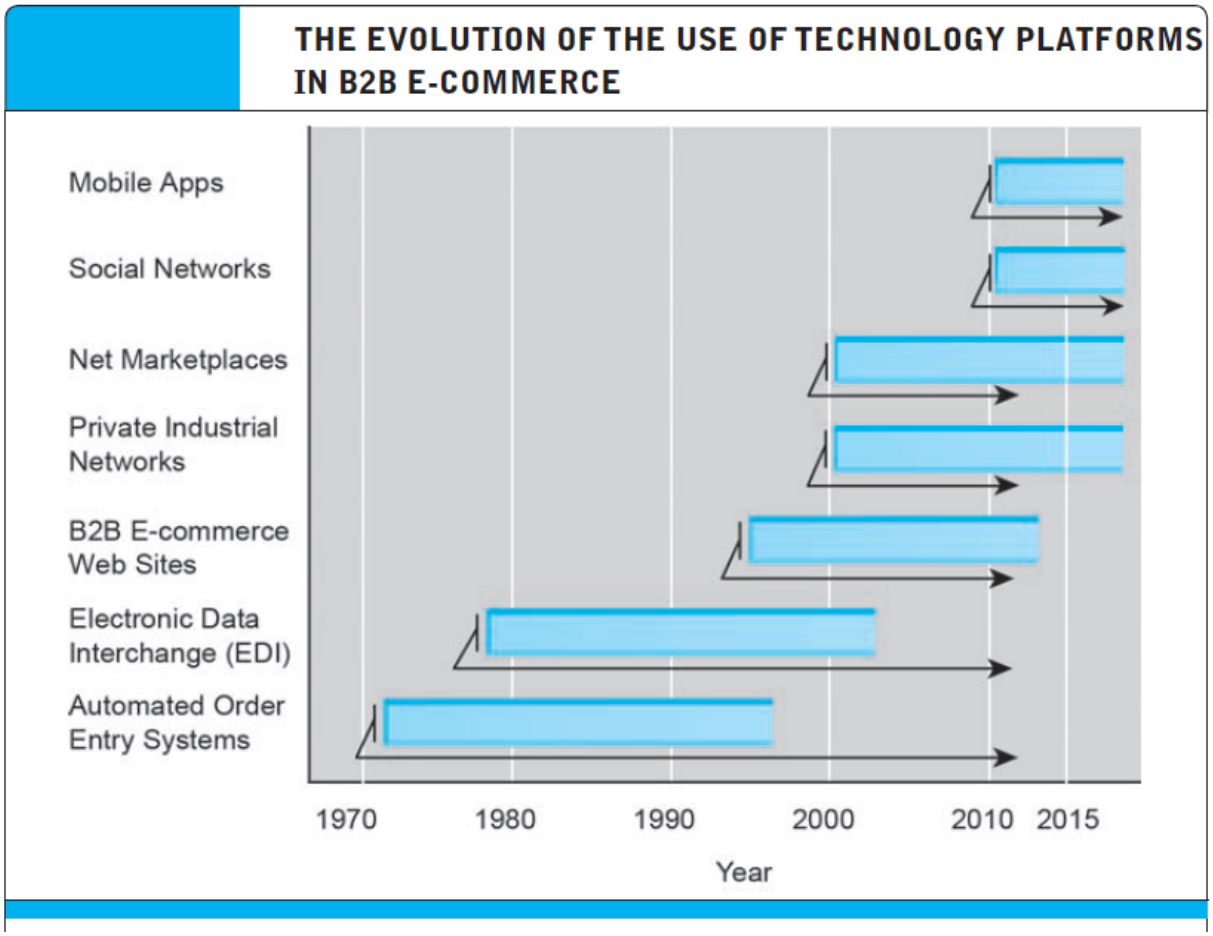

Fig 16.2 The evolution of the use of technology platforms in B2B E - commerce

POTENTIAL BENEFITS AND CHALLENGES OF B2B E-COMMERCE

Regardless of the specific type, B2B commerce as a whole promises many strategicbenefits to firms—both buyers and sellers—and impressive gains for the economy.

B2B e-commerce can:

- Lower administrative costs
- Lower search costs for buyers

- Reduce inventory costs by increasing competition among suppliers (increasing pricetransparency) and reducing inventory to the bare minimum
- Lower transaction costs by eliminating paperwork and automating parts of theprocurement process
- Increase production flexibility by ensuring delivery of parts just at the right time(known as just-in-time production)
- Improve quality of products by increasing cooperation among buyers and sellersand reducing quality issues
- Decrease product cycle time by sharing designs and production schedules withsuppliers
- Increase opportunities for collaborating with suppliers and distributors
- Create greater price transparency—the ability to see the actual buy and sell pricesin a market
- Increase the visibility and real-time information sharing among all participants inthe supply chain network.

B2B e-commerce offers potential first-mover strategic benefits for individual firms as well. Firms that move their procurement processes online first will experienceimpressive gains in productivity, cost reduction, and potentially much fasterintroduction of new, higher-quality products. While these gains may be imitated byother competing firms, it is also clear from the history of B2B e-commerce that firmsmaking sustained investments in information technology and B2B e-commerce canadapt much faster to new technologies as they emerge, creating a string of first-mover advantages.

While there are many potential benefits to B2B e-commerce, there are also considerablerisks and challenges. Often real-world supply chains fail to provide visibilityinto the supply chain because they lack real-time demand, production, and logisticsdata, and have inadequate financial data on suppliers. The result is unexpected supplierfailure and disruption to the supply chain. Builders of B2B supply chains oftenhad little concern for the environmental impacts of supply chains, the sensitivity ofsupply chains to natural events, fluctuating fuel and labor costs, or the impact of public values involving labor and environmental policies. The result in 2016 is that manyFortune 1000 supply chains are risky, vulnerable, and socially and environmentallyunsustainable.

16.2 PROCUREMENT PROCESS AND SUPPLY CHAINS

The subject of B2B e-commerce can be complex because there are so many ways theInternet can be used to support the exchange of goods and payments among organizations,efficient supply chains, and collaboration. At the most basic level, B2B e-commerceis about changing the **procurement process** (how business firms purchasegoods they need to produce goods they will ultimately sell to consumers) of thousands

of firms across the world. In the procurement process, firms purchase goods from aset of suppliers, and they in turn purchase their inputs from a set of suppliers. Thesupply chain includes not just the firms themselves, but also the relationships amongthem and the processes that connect them.

STEPS IN THE PROCUREMENT PROCESS

There are seven separate steps in the procurement process (see **Figure 16.3**). Thefirst three steps involve the decision of who to buy from and what to pay: searchingfor suppliers of specific products; qualifying both sellers and the products they sell;The procurement process is a lengthy and complicated series of steps that involves the seller, buyer, and shipping companies in a series ofconnected transactions. and negotiating prices, credit terms, escrow requirements, quality, and scheduling ofdelivery. Once a supplier is identified, purchase orders are issued, the buyer is sentan invoice, the goods are shipped, and the buyer sends a payment. Each of these stepsin the procurement process is composed of many separate business processes andsub activities. Each of these activities must be recorded in the information systems ofthe seller, buyer, and shipper. Often, this data entry is not automatic and involves agreat deal of manual labor, telephone calls, faxes, and e-mails. and negotiating prices, credit terms, escrow requirements, quality, and scheduling ofdelivery. Once a supplier is identified, purchase orders are issued, the buyer is sentan invoice, the goods are shipped, and the buyer sends a payment. Each of these stepsin the procurement process is composed of many separate business processes andsubactivities. Each of these activities must be recorded in the information systems ofthe seller, buyer, and shipper. Often, this data entry is not automatic and involves a great deal of manual labor, telephone calls, faxes, and e-mails.

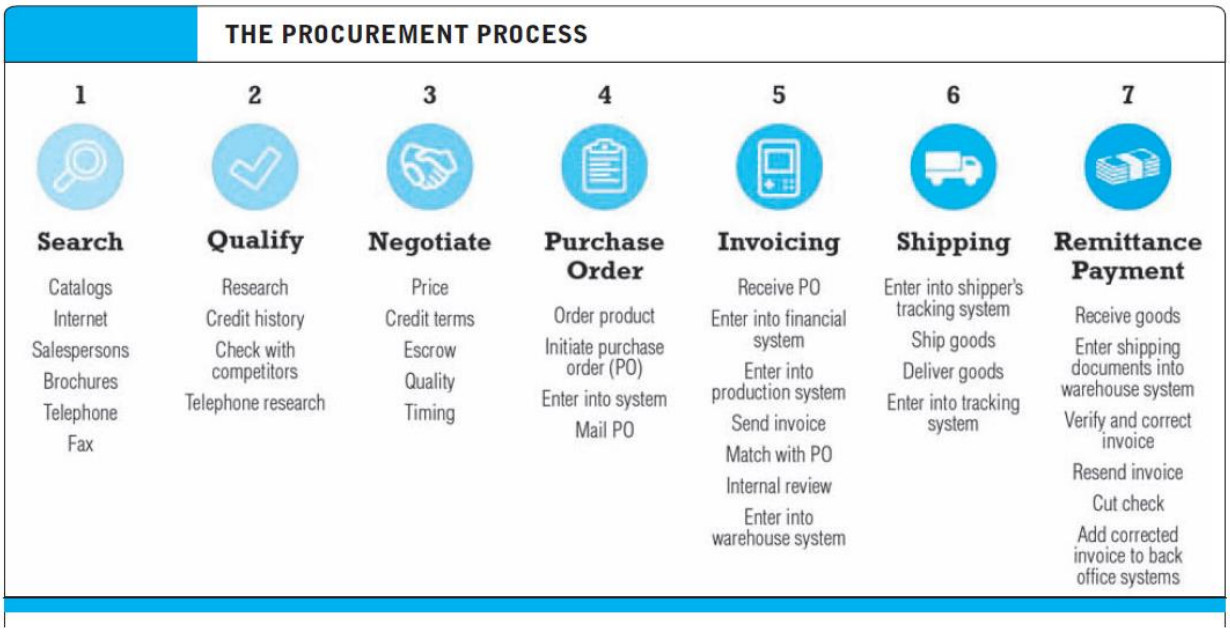

Fig 16.3 The procurement process

TYPES OF PROCUREMENT

Two distinctions are important for understanding how B2B e-commerce can improvethe procurement process. First, firms make purchases of two kinds of goods fromsuppliers: direct goods and indirect goods. **Direct goods** are goods integrally involvedin the production process; for instance, when an automobile manufacturer purchasessheet steel for auto body production. **Indirect goods** are all other goods not directlyinvolved in the production process, such as office supplies and maintenance products.Often these goods are called **MRO goods**—products for maintenance, repair, and operations.Second, firms use two different methods for purchasing goods: contract purchasingand spot purchasing. **Contract purchasing** involves long-term written agreementsto purchase specified products, with agreed-upon terms and quality, for an extendedperiod of time. Generally, firms purchase direct goods using long-term contracts. **Spotpurchasing** involves the purchase of goods based on immediate needs in larger marketplaces that involve many suppliers. Generally, firms use spot purchasing forindirect goods, although in some cases, firms also use spot purchasing for direct goods.According to some estimates, about 65% of inter-firm trade involves contractpurchasing of direct goods, and 35% involves spot purchasing of indirect goods. There are, of course, differences among industries.Purchases of direct goods play a dominant role in the extraction and metal

industries,for instance. This finding is significant for understanding B2B e-commerce. Although the procurement process involves the purchasing of goods, it is extraordinarily information-intense, involving the movement of information amongmany existing corporate systems. The procurement process today is also very labor intensive, directly involving millions of employees around the world, not includingthose engaged in transportation, finance, insurance, or general office administrationrelated to the process. The key players in the procurement process are the purchasingmanagers. They ultimately decide who to buy from, what to buy, and on what terms.

Purchasing managers ("procurement managers" in the business press) are also thekey decision makers for the adoption of B2B e-commerce solutions. As purchasingmanagers have become more familiar and comfortable with B2C e-commerce in theirpersonal lives, they are increasingly coming to expect the same type of purchasingexperience in the B2B arena. As a result, B2B manufacturers, suppliers, and distributors are finding that in order to effectively compete, they must pay more attentionto the online customer experience, just as their B2C counterparts do. Features thatB2B customers now expect include enhanced search functionality, up-to-date productpricing and availability information, product configurators, mobile support, apps along with websites, online support forums, live customer service reps, and a database thatcontains their corporate purchasing history, shipping preferences, and payment data,
and provides support for repeat orders.

MULTI-TIER SUPPLY CHAINS

Although Figure 16.3 captures some of the complexity of the procurement process, itis important to realize that firms purchase thousands of goods from thousands ofsuppliers. The suppliers, in turn, must purchase their inputs from their suppliers.Large manufacturers such as Ford Motor Company have over 20,000 suppliers of parts,packaging, and technology. The number of secondary and tertiary suppliers is at leastas large. Together, this extended **multi-tier supply chain** (the chain of primary, secondary, and tertiary suppliers) constitutes a crucial aspect of the industrial infrastructureof the economy. **Figure 16.4** depicts a firm's multi-tier supply chain.

The supply chain depicted in Figure 16.4 is a three-tier chain simplified for thesake of illustration. In fact, large Fortune 1000 firms have thousands of suppliers, whoin turn have thousands of smaller suppliers. The real-world supply chain is often manylayers deep. The complexity of the supply chain suggests a combinatorial explosion.Assuming a manufacturer has

four primary suppliers and each one has three primarysuppliers, and each of these has three primary suppliers, then the total number ofsuppliers in the chain (including the buying firm) rises to 53. This figure does not include the shippers, insurers, and financiers involved in the transactions.

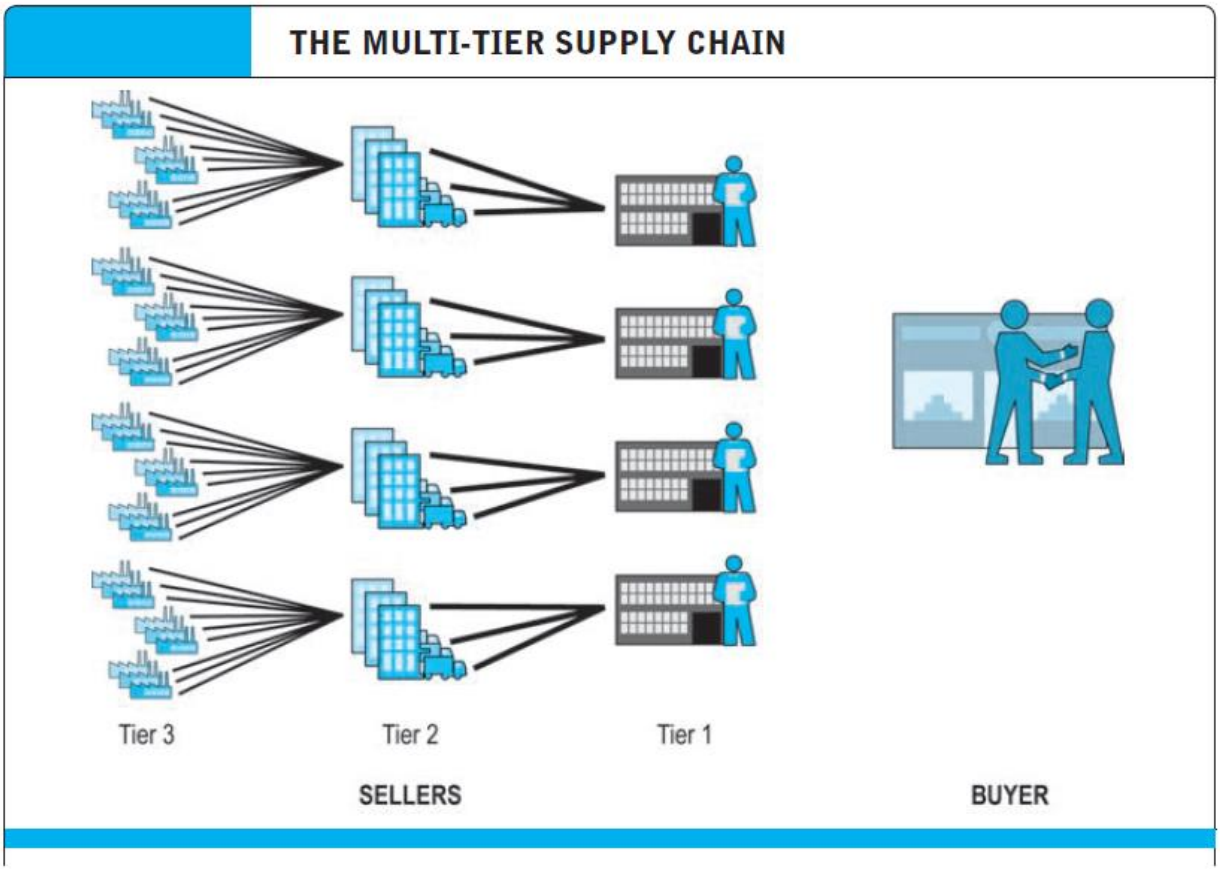

Fig 16.4 The multi-tier supply chain

Immediately, you can see from Figure 12.4 that the procurement process involvesa very large number of suppliers, each of whom must be coordinated with the production needs of the ultimate purchaser—the buying firm. You can also understandhow difficult it is to manage the supply chain, or obtain visibility into the supply chainsimply because of its size and scope.

VISIBILITY AND OTHER CONCEPTS IN SUPPLY CHAIN MANAGEMENT

The global, multi-tier nature of supply chains produces a number of challenges forsupply chain managers. A central concept of supply chains is **supply chain visibility**,which refers to the

ability of a firm to monitor the output and pricing of its first- andsecond-tier suppliers, track and manage supplier orders, and manage transportationand logistics providers who are moving the products. A supply chain is visible whenyou know exactly what you have ordered from your suppliers and what their production schedule is, and when you can track the goods through shipping and truckingfirms to your in-bound warehouse. With this knowledge, the firm's internal enterprisesystems can produce production schedules and develop financial forecasts. Generally, the more firms invest in digitally enabled supply chains, the greater the visibility managers have into the process. Other key concepts in supply chain management, and which are also centralmanagement challenges, are described in **Table 12.2**.

THE ROLE OF EXISTING LEGACY COMPUTER SYSTEMS AND ENTERPRISESYSTEMS IN SUPPLY CHAINS

Complicating any efforts to coordinate the many firms in a supply chain is the factthat each firm generally has its own set of legacy computer systems, sometimes homegrownor customized, that cannot easily pass information to other systems. **Legacycomputer systems** generally are older enterprise systems used to manage key businessprocesses within a firm in a variety of functional areas from manufacturing,logistics, finance, and human resources. **Enterprise systems** are corporate-widesystems that relate to all aspects of production, including finance, human resources, and procurement. Many large Fortune 500 global firms have implemented globalenterprise-wide systems from major vendors such as IBM, SAP, Oracle, and others.Generally enterprise systems have an inward focus on the firm's internal production processes, and only tangentially are concerned with suppliers. More contemporarycloud-based dedicated B2B software that can be integrated with existing enterprisesystems is growing in importance. Companies such as IBM, Oracle, and SAP havedeveloped SaaS (software as a service) or on-demand cloud-based supply chain managementsystems that can work seamlessly with their legacy offerings. Cloud-basedsupply chain management revenues are growing at 25% annually, although manyfirms prefer to maintain their own supply chain management systems on their privateclouds rather than use shared public cloud services.

MAJOR TRENDS IN B2B E-COMMERCE 2016–2017
BUSINESS
• B2B e-commerce growth continues to accelerate in 2016 to pre-recession levels as the U.S. economy continues to slowly recover from recession. • B2B e-distributors adopt the same marketing and sales techniques as successful consumer e-commerce companies such as Amazon. • Resurgence in Net marketplaces bringing together hundreds of suppliers and thousands of buying firms. • Risk management: companies heighten their focus on risks in supply chains after being blindsided in recent years by a number of natural and man-made disasters. • Regional manufacturing: risks of far-flung global networks lead to an increase in regional manufacturing and supply chains, moving production closer to market demand. • Flexibility: growing emphasis on rapid-response and adaptive supply chains rather than lowest cost supply chains, which typically carry great risks. • Supply chain visibility: growing calls for more real-time data that would allow managers to see not only across their production, but also into the production and financial condition of their key suppliers. • Social and mobile commerce and customer intimacy: B2B buyers, like consumers, are tapping into tablets, smartphones, and social networks for purchasing, scheduling, exception handling, and coordinating with their suppliers in order to manage supply chain risk.
TECHNOLOGY
• Big data: global trade and logistics systems are generating huge repositories of B2B data, swamping management understanding and controls. • Business analytics: growing emphasis on use of business analytics software (business intelligence) to understand very large data sets. • Cloud: migration of B2B hardware and software to cloud computing and cloud apps, away from individual corporate data centers, as a means of slowing rising technology costs. B2B systems move to cloud computing providers like IBM, Oracle, Amazon, Google, and HP as their core technology. • Mobile platform: growing use of mobile platform for B2B systems (CRM, SCM, and enterprise), putting B2B commerce into managers' palms. • Social networks: increasing use of social network platforms for feedback from customers, strengthening customer and supplier relationships, adjusting prices and orders, and enhancing decision making. • Internet of Things: The number of Internet-connected sensors and other intelligent devices that measure and monitor data continues to grow exponentially and begins to impact how supply chains operate. • Predictive analytics tools are increasingly being used to identify the most profitable customers.
SOCIETY
• Accountability: growing demands for supply chain accountability and monitoring in developed countries driven by reports of poor working conditions in Asian factories. • Sustainable supply chains: growing public demand for businesses to mitigate their environmental impact leads from local environmental optimization to consideration of the entire supply chain from design, production, customer service, and post-use disposal. • Acceptance and growth of B2B platforms: SAP Ariba, one of the largest Net marketplaces, has over 2 million connected businesses, including two-thirds of the Forbes Global 2000 largest companies, that participate in transactions with a value of over $800 billion a year.

Table 16.1 Major trends in B2B E-Commerce

16.3 TRENDS IN SUPPLY CHAIN MANAGEMENT

It is impossible to comprehend the actual and potential contribution of B2B e-commerce,or the successes and failures of B2B e-commerce vendors and markets, withoutunderstanding ongoing efforts to improve the procurement process through a varietyof supply chain management programs that long preceded the development ofe-commerce.

Supply chain management (SCM) refers to a wide variety of activities that firms and industries use to coordinate the key players in their procurement process.For the most part, today's procurement managers still work with telephones, e-mail,fax machines, face-to-face conversations, and instinct, relying on trusted long-termsuppliers for their strategic purchases of goods directly involved in the productionprocess.

There have been a number of major developments in supply chain managementover the last two decades that set the ground rules for understanding how B2Be-commerce works (or fails to work). These developments include just-in-time andlean production, supply chain simplification, adaptive supply chains, sustainablesupply chains, electronic data interchange (EDI), supply chain management systems, and collaborative commerce.

JUST-IN-TIME AND LEAN PRODUCTION

One of the significant costs in any production process is the cost of in-process inventory:
the parts and supplies needed to produce a product or service. **Just-in-timeproduction** is a method of inventory cost management that seeks to reduce excessinventory to a bare minimum. In just-in-time production, the parts needed for, say,an automobile, arrive at the assembly factory a few hours or even minutes before theyare attached to a car. Payment for the parts does not occur until the parts are attachedto a vehicle on the production line. In the past, producers used to order enough parts for a week or even a month's worth of production, creating huge, costly buffers in theproduction process. These buffers assured that parts would almost always be available,but at a large cost. **Lean production** is a set of production methods and tools thatfocuses on the elimination of waste throughout the customer value chain. It is anextension of just-in-time beyond inventory management to the full range of activities that create customer value. Originally, just-in-time and lean methods were implementedwith phones, faxes, and paper documents to coordinate the flow of parts in inventory.Supply chain management systems now

have largely automated the process of acquiringinventory from suppliers, and made possible significant savings on a global basis.Arguably, contemporary supply chain systems are the foundation of today's global B2B production system.

SUPPLY CHAIN SIMPLIFICATION

Many manufacturing firms have spent the past two decades reducing the size of theirsupply chains and working more closely with a smaller group of strategic supplierfirms to reduce both product costs and administrative costs, while improving quality,a trend known as **supply chain simplification**. Following the lead of Japaneseindustry, for instance, the automobile industry has systematically reduced the numberof its suppliers by over 50%. Instead of open bidding for orders, large manufacturers have chosen to work with strategic partner supply firms under long-term contractsthat guarantee the supplier business and also establish quality, cost, and timing goals.These strategic partnership programs are essential for just-in-time production models,and often involve joint product development and design, integration of computersystems, and tight coupling of the production processes of two or more companies.

Tight coupling is a method for ensuring that suppliers precisely deliver the orderedparts at a specific time and to a particular location, ensuring the production processis not interrupted for lack of parts.

SUPPLY CHAIN BLACK SWANS: ADAPTIVE SUPPLY CHAINS

While firms have greatly simplified their supply chains in the last decade, they havealso sought to centralize them by adopting a single, global supply chain system thatintegrates all the firm's vendor and logistics information into a single enterprise-widesystem. Large software firms such as Oracle, IBM, and SAP encourage firms to adopta "one world, one firm, one database" enterprise-wide view of the world in order toachieve scale economies, simplicity, and to optimize global cost and value.

Beginning in earnest in 2000, managers in developed countries used these newtechnological capabilities to push manufacturing and production to the lowest costlabor regions of the world, specifically China and South East Asia. This movement ofproduction to Asia was also enabled by the entrance of China into the World TradeOrganization in September 2001. Suddenly, it was both technologically and politicallypossible to concentrate production wherever possible in the

lowest cost region of theworld. These developments were also supported by low-cost fuel, which made both transoceanic shipping and production inexpensive, and relative political stability in theregion. By 2005, many economists believed a new world economic order had emergedbased on cheap labor in Asia capable of producing inexpensive products for Westernconsumers, profits for global firms, and the opening of Asian markets to sophisticatedWestern goods and financial products.

As it turns out, there were many risks and costs to this strategy of concentratingproduction in a world of economic, financial, political, and even geological instability.

Today, managers need to be more careful in balancing gains in efficiency from a highlycentralized supply chain, with the risks inherent to such a strategy. Forinstance, in the global financial crisis of 2007–2009, relying on suppliers in parts ofEurope where currencies and interest rates fluctuated greatly exposed many firmsto higher costs than anticipated. Suddenly, key suppliers could not obtain financingfor their production or shipments. In 2016, the United Kingdom's vote to leave theEuropean Union (commonly referred to as Brexit) is expected to rattle Europeansupply chains. The 2011 earthquakeand tsunami in Japan had a significant impact on supply chains in a number of industriesaround the world. In February 2016, another earthquake, this time in southernTaiwan, had a similar impact. Taiwan is the global manufacturing center of integrated circuit wafers, accounting for 70% of the world's production of processor chips used by Apple, IBM, Microsoft, and hundreds of other firms. Inrecent years, the source of supply chain disruptions has shifted to technology, withmajor disruptions due to failure of cloud-based services and cyberattacks.

The risks and costs of extended and concentrated supply chains have begun tochange corporate strategies. To cope with unpredictable

world events, firms are taking steps to create **adaptive supply chains** that allow themto react to disruptions in the supply chain in a particular region by moving productionto a different region. Many companies are breaking up single global supply chainsystems into regional or product-based supply chains and reducing the level of centralization.

Using adaptive supply chains, firms can decide to locate some production

of parts in Latin America, for instance, rather than having all their production orsuppliers in a single country such as Japan or China. They will be able to move productionaround the world to temporary safe harbors. This may result in higher short-termcosts, but provide substantial,

longer-term risk protection in the event any singleregion is disrupted. Increasingly, supply chains are being built based on the assumption

that global disruptions in supply are inevitable, but not predictable. The focusnow is on optimal-cost, not low-cost, supply chains, and more distributed manufacturingalong with more flexible supply chains that can shift reliably from high-risk tolow-risk areas. Regional manufacturing means shorter supply chains that can respondrapidly to changing consumer tastes and demand levels.

ACCOUNTABLE SUPPLY CHAINS: LABOR STANDARDS

Accountable supply chains are those where the labor conditions in low-wage, underdevelopedproducer countries are visible and morally acceptable to ultimate consumersin more developed industrial societies. For much of the last century, Americanand European manufacturers with global supply chains with large offshore productionfacilities sought to hide the realities of their offshore factories from Western reportersand ordinary citizens. For global firms with long supply chains, visibility did not mean their consumers could understand how their products were made.

Beginning in 2000, and in part because of the growing power of the Internet toempower citizen reporters around the world, the realities of global supply chains haveslowly become more transparent to the public. For instance, for much of the past decade, beginning in 1997, Nike, the world's largest manufacturer of sporting goods,has been under intense criticism for exploiting foreign workers, operating sweatshops, employing children, and allowing dangerous conditions in its subcontractorfactories. As a result, Nike has introduced significant changes to its global supplychain. Bangladesh is a continuing source of apparel factory fires beginning with the Dhakka fire of 2010, the Rena Plaza factory building collapse of 2013, and the second Dhakka fire in 2015, all of which resulted in deaths and injuries to workers.Around 80% of Bangladesh's exports (and 60% of its total GDP) come from apparelmanufacturing for global brands such as Walmart, H&M, JCPenney, Zara, and others.

With the emergence of truly global supply chains, and political changes at theWorld Trade Organization, which opened up European and American markets to Asiangoods and services, many—if not most—of the electronics, toys, cosmetics, industrialsupplies, footwear, apparel, and other goods consumed in the developed world aremade by workers in factories in the less

developed world, primarily in Asia and Latin America. Unfortunately, but quite understandably, the labor conditions in these factoriesin most cases do not meet the minimal labor standards of Europe or Americaeven though these factories pay higher wages and offer better working conditions thanother local jobs in the host country. In many cases, the cost for a worker of not havinga job in what—to Western standards—are horrible working conditions is to sink deeper into poverty and even worse conditions. Many point out that labor conditions were brutal in the United States and Europe in the nineteenth and early twentieth centurywhen these countries were building industrial economies, and therefore, whateverconditions exist in offshore factories in 2016 are no worse than developed countriesin their early years of rapid industrialization.

The argument results in a painful ethical dilemma, a terrible trade-off: cheapmanufactured goods that increase consumer welfare in developed countries seem torequire human misery in less developed countries. Indeed, these jobs would neverhave been moved to less developed parts of world without exceptionally low, evensurvival level, wages.

Notwithstanding the argument that having a job is better than being unemployedin low-wage countries, or any country, there are some working conditions that arecompletely unacceptable to consumers and therefore to firms in developed countries.Among these unacceptable working conditions are slave or forced labor, child employment, routine exposure to toxic substances, more than 48 hours of work per week,harassment and abuse, sexual exploitation, and compensation beneath the minimal standard of living leaving no disposable income. These practices were, and are, in somecases typical, and certainly not atypical, in many low-wage countries.

A number of groups in the last decade have contributed to efforts to make globalsupply chains transparent to reporters and citizens, and to develop minimal standardsof accountability. Among these groups are the National Consumers League, Human Rights First, the Maquila Solidarity Network, the Global Fairness Initiative, the CleanClothes Campaign, the International Labor Organization (UN), and the Fair Labor Association (FLA). The FLA is a coalition of business firms with offshore productionand global supply chains, universities, and private organizations. For member firms,the FLA conducts interviews with workers, makes unannounced visits to factories totrack progress, and investigates complaints. They are also one of the major international labor standard-setting organizations.

In March 2012, the FLA released its investigation of Hon Hai Precision IndustryCompany (a Taiwan-based company known as Foxconn), which is the assembler ofnearly all iPhones and iPads in the world. Foxconn operates what is alleged to bethe largest factory in the world in Longhua, Shenzhen, where over 250,000 workersassemble electronics goods. The audit of working conditions at Foxconn was authorizedby Apple, a member of the FLA, and was based on 35,000 surveys of workers at the Longhua factory. The report found over 50 legal and code violations (sometimes inviolation of Chinese laws) including requiring too many hours of work a week (over60), failing to pay workers for overtime, and hazardous conditions that injured workers. Similar violations of labor standards continue to befound in the Middle East and Asia.

SUSTAINABLE SUPPLY CHAINS: LEAN, MEAN, AND GREEN

Sustainable business is a call for business to take social and ecological interests, andnot just corporate profits, into account in all their decision-making throughout thefirm. No small request. Since the United Nations World Commission on Environment and Development (WCED) published thefirst comprehensive report on sustainable business in 1987, firms around the globehave struggled with these concepts and in some cases ignored or resisted them assimply a threat to sustained profitability. The commission's report argued for a balance of profits, social community development, and minimalimpact on the world environment, including, of course, the carbon footprint of business.Today, the consensus among major firms in Europe, Asia, and the United Stateshas become that in the long term, and through careful planning, sustainable businessand **sustainable supply chains** are just good business because it means using themost efficient environment-regarding means of production, distribution, and logistics.These efficient methods create value for consumers, investors, and communities.

Notions of sustainable business have had a powerful impact on supply chainthinking. In part, these efforts are good risk management: all advanced countries havesubstantially strengthened their environmental regulations. It makes good businesssense for firms to prepare methods and operations suitable to this new environment.

For instance, all the major textiles brands and retailers have announced plans fora more sustainable supply chain in textiles. One of the world's truly ancient industries,textiles supports millions of workers while consuming extraordinary resources: it takes1,000 gallons of water to make one pound of finished cotton.While growing cotton has its issues (fertilizer), the

subsequent dying, finishing, andcleaning of cotton makes it the number one industrial polluter on Earth. It's not asmall matter then that Walmart, Gap, Levi's, Nike, and other large players in theindustry are taking steps to reduce the environmental impact of their operations byimproving the efficiency of the entire supply and distribution chains.

With the help of IBM, SAP, and Oracle, other firms and entire industries are working to develop sustainable supply chains (IKEA, 2016). McKesson, North America'slargest distributor of drugs, uses IBM's Supply Chain Sustainability ManagementSolution (SCSM) to minimize carbon dioxide emissions throughout its supply chain,while lowering its distribution costs. SCSM (a business analytics package that workswith IBM's B2B software) can determine low-cost refrigeration alternatives for certainmedicines (such as insulin and vaccines), identify the environmentally least harmful way to bring new products into its distribution network, and determine the best wayto transport pharmaceuticals to customers.

ELECTRONIC DATA INTERCHANGE (EDI)

As noted in the previous section, B2B e-commerce did not originate with the Internet,but in fact has its roots in technologies such as EDI that were first developed in themid-1970s and 1980s. EDI is a broadly defined communications protocol for exchangingdocuments among computers using technical standards developed by the AmericanNational Standards Institute (ANSI X12 standards) and international bodies such asthe United Nations (EDIFACT standards).

EDI was developed to reduce the cost, delays, and errors inherent in the manualexchanges of documents such as purchase orders, shipping documents, price lists,payments, and customer data. EDI differs from an unstructured message becauseits messages are organized with distinct fields for each of the important pieces ofinformation in a commercial transaction such as transaction date, product purchased,amount, sender's name, address, and recipient's name.

Each major industry in the United States and throughout much of the industrialworld has EDI industry committees that define the structure and information fields ofelectronic documents for that industry. Estimates indicate that B2B e-commerce EDItransactions will total about $3.2 trillion in 2016, about 48% of all B2B e-commerce. In this sense, EDI remains very importantin the development of B2B e-commerce.

EDI has evolved significantly since the 1980s.Initially, EDIfocused on document automation (Stage 1). Procurement agents created purchase orders electronically and sent them to trading

partners, who in turn shipped order fulfilment and shipping notices electronically back to the purchaser. Invoices, payments,and other documents followed. These early implementations replaced thepostal system for document transmission, and resulted in same-day shipping of orders(rather than a week's delay caused by the postal system), reduced errors, and lowercosts. The second stage of EDI development began in the early 1990s, driven largely by the automation of internal industrial processes and movement toward just-in-timeproduction and continuous production. New methods of production called for greaterflexibility in scheduling, shipping, and financing of supplies. EDI evolved to becomea tool for continuous inventory replenishment. EDI was used to eliminate purchaseorders and other documents entirely, replacing them with production schedules and inventory balances. Supplier firms were sent monthly statements of productionrequirements and precise scheduled delivery times, and the orders would be fulfilledcontinuously, with inventory and payments being adjusted at the end of each month.In the third stage of EDI, beginning in the mid-1990s, suppliers were given onlineaccess to selected parts of the purchasing firm's production and delivery schedules,and, under long-term contracts, were required to meet those schedules on their ownwithout intervention by firm purchasing agents. Movement toward this continuous real-time access model of EDI was spurred in the 1990s by large manufacturing andprocess firms (such as oil and chemical companies) that were implementing enterprisesystems. These systems required standardization of business processes and resultedin the automation of production, logistics, and many financial processes. These new processes required much closer relationships with suppliers and logistics partners(shipping and ground transporters), who were required to be more precise in deliveryscheduling and more flexible in inventory management. This level of supplier precisioncould never be achieved economically by human purchasing agents. This thirdstage of EDI enabled the era of continuous replenishment. For instance, Walmart and Toys "R"Us provide their suppliers with access to their store inventories, and the suppliers are expected to keep the stock of items on the shelf within pre specified targets. Similar developments occurred in the grocery industry.

Today, EDI must be viewed as a general enabling technology that provides for theexchange of critical business information between computer applications supporting awide variety of business processes. EDI is an important industrial network technology,suited to support communications among a small set of strategic partners in direct, longtermtrading relationships. The technical platform of EDI has changed from mainframes to personal computers, from corporate data

centers to cloud-based software-as-a-service(SaaS) platforms (described below). EDI is not well suited for the development of Netmarketplaces, where thousands of suppliers and purchasers meet in a digital arena tonegotiate prices. EDI supports direct bilateral communications among a small set of firms and does not permit the multilateral, dynamic relationships of a true marketplace.EDI does not provide for price transparency among a large number of suppliers, does notscale easily to include new participants, and is not a real-time communications environment.EDI does not have a rich communications environment that can simultaneouslysupport e-mail messaging, video conferencing, sharing of graphic documents, network meetings, or user-friendly flexible database creation and management.

MOBILE B2B

Just as with B2C commerce, mobile devices have become increasingly important inall aspects of B2B e-commerce, through all steps of the procurement process andthroughout the supply chain. More and more companies have adopted a **Bring YourOwn Device (BYOD) policy**, in which employees use their personal smartphone,tablet, or laptop computer on the company's network, which has helped contribute totheir growing importance in B2B. Cisco estimates that by 2016, mobile traffic will represent over 25% of all business Internet traffic, up from less than 5% in 2011.

On the procurement front, B2B buyers are increasingly using mobile devicesfor all phases of the purchase process, from discovery to decision-making, to actualpurchase. One study found that over 75% of B2B decision-makers surveyed used amobile device to research products, equipment, services, and suppliers. B2B buyers want to be able to place orders using mobile devices just as they doin the B2C arena, and increasingly expect B2B e-commerce sites to be readily accessible from such devices, to be able to start an order from a device and finish it on theirdesktop and vice versa, and to be able to get online customer service on their mobiledevices.

On the supply chain front, many supply chain network and software providersare enhancing their offerings by providing support for mobile devices and applications. For instance, Elementum provides a variety of mobile apps running on a cloudplatform to track various aspects of the supply chain and enable supply chain visibility. For instance, Elementum's Exposure App enables companies to identify and respondto risks in their supply chain, providing real-time alerts on events that may impact the supply, manufacture, or distribution of components of their products. Elementum's Perspective App helps companies monitor the health of their supply

chain by providing a dashboard that provides real-time tracking of key performance indicators(KPIs) in the supply chain.

B2B IN THE CLOUD

In the traditional approach to B2B enterprise systems, firms build on their existingon-premise, enterprise production systems that keep track of their manufacturingand distribution processes to include new functionality connecting them to their suppliers'systems. This is a very expensive process that involves connecting suppliersone at a time, establishing the telecommunications channels, and managing the dataquality issues, not to mention the cost of building the infrastructure of computers andtelecommunications to support coordination of suppliers and B2B transactions. Cloudcomputing is increasingly being used to greatly reduce thecost of building and maintaining B2B systems.

In **cloud-based B2B systems**, much of the expense of B2B systems is shifted fromthe firm to a B2B network provider, sometimes called a data hub or B2B platform.The cloud platform owner provides the computing and telecommunicationscapability; establishes connections with the firm's partners; provides softwareon-demand (software-as-a-service or SaaS) to connect the firm's systems to its partners'systems; performs data coordination and cleaning; and manages data quality for allmembers. Network effects apply here: the cost of these tasks and capabilities is spreadover all members, reducing costs for all. B2B network providers also provide communicationenvironments and file storage services that allow partners to work togethermore closely, and to collaborate on improving the flow of goods and transactions. B2Bnetwork providers charge customers on a demand basis, rather than on a percentage of their transactions' value, depending on their utilization of the network. Suppliers of traditional on-premise B2B and supply chain management systems have respondedby purchasing cloud-based B2B networks in the last few years. For instance, SAP purchased Ariba, one of the first and largest cloud-based B2B transaction networks, in2012 for $4.6 billion. SAP Ariba's global network automates more than $700 billion incommercial transactions, collaborations, and business intelligence among a wide range of suppliers, shipping, and logistics firms. SAP, the largest supplier of firm enterprisesystems, supplies software that supports internal business processes. Other B2Bnetwork providers include E2Open, GT Nexus, and Elementum. Unlike traditional firm-

based B2B systems, cloud-based B2B data networks canbe implemented in short periods of time to respond to corporate mergers and rapidlychanging markets.

SUPPLY CHAIN MANAGEMENT SYSTEMS

Supply chain simplification, just in time and lean production, focusing on strategicpartners in the production process, enterprise systems, and continuous inventoryreplenishment are the foundation for contemporary supply chain management (SCM) systems. **Supply chain management (SCM) systems** continuously link the activitiesof buying, making, and moving products from suppliers to purchasing firms, as wellas integrating the demand side of the business equation by including the order entrysystem in the process. With an SCM system and continuous replenishment, inventoryis greatly reduced and production begins only when an order is received (see **Figure 16.4**). These systems enable just-in-time and lean-production methods.

Hewlett-Packard (HP) is one of the largest technology companies in the world,with sales of $103 billion in 2015. With operations in over 150 countries, sales in 43currencies, and 15 languages, HP is truly a global firm with global supply chain issuesthat became even more complicated as HP expanded by making over 200 acquisitionsin the last decade. In 2016, HP has the largest supply chain among informationtechnology manufacturers. To cope with one of the most complex supply chains in the world, HP developed a web-based, order-driven supply chain management systemthat begins with either a customer placing an order online or the receipt of an orderfrom a dealer. The order is forwarded from the order entry system to HP's productionand delivery system. From there, the order is routed to one of several HP contractorsupplier firms. The supplier's system then verifies the order with HP and validatesthe ordered configuration to ensure the PC can be manufactured (e.g., will not have missing parts or fail a design specification set by HP). The order is then forwarded toa computer-based production control system that issues a bar-coded production ticketto factory assemblers. Simultaneously, a parts order is forwarded to the supplier'swarehouse and inventory management system. A worker assembles the computer,and then the computer is boxed, tagged, and shipped to the customer. The delivery ismonitored and tracked by HP's supply chain management system, which links directly to one of several overnight delivery systems. The elapsed time from order entry toshipping is 48 hours. With this system, HP has eliminated the need to hold PCs ininventory,

reduced cycle time from one week to 48 hours, and reduced errors. HP hasextended this system to become a global B2B order tracking, reporting, and supportsystem for HP B2B customers.

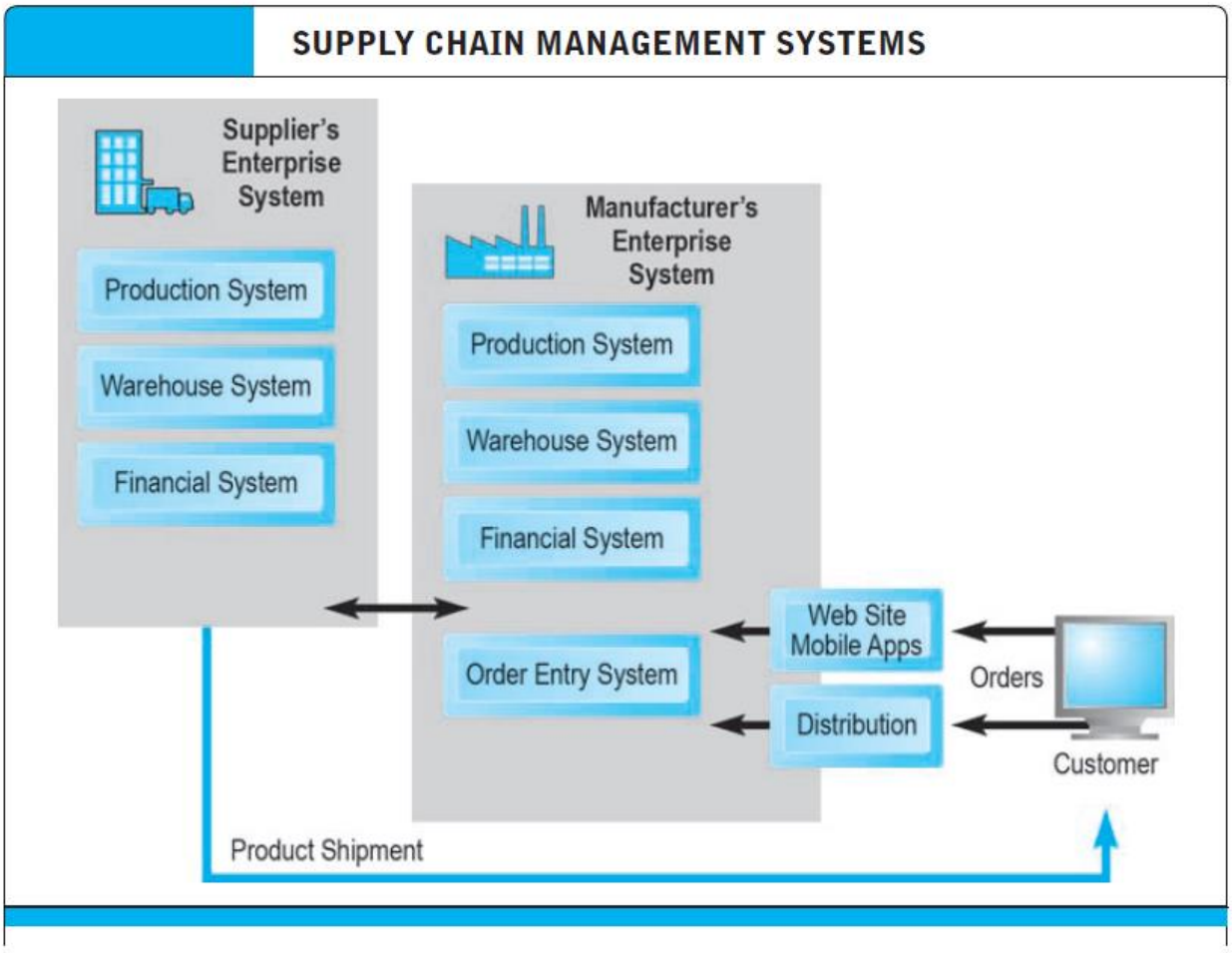

Fig 16.4 Supply chain management systems

It isn't just huge technology companies that use supply chain software. There'snothing quite so perishable as fashionable underwear given the rate of fashion change.Under Armour, which is the world's No. 1 performance athletic brand, uses softwarefrom SAP to predict sales, plan inventory, and coordinate suppliers. Prior to using these tools, Under Armour often missed sales because it did notproduce enough of popular items, or overproduced items that were not selling.

COLLABORATIVE COMMERCE

Collaborative commerce is a direct extension of supply chain management systems,as well as supply chain simplification. **Collaborative commerce** is defined as the useof digital

technologies to permit firms to collaboratively design, develop, build, market,and manage products through their life cycles. This is a much broader mission thanEDI or simply managing the flow of information among organizations. Collaborativecommerce involves a definitive move from a transaction focus to a relationship focus among the supply chain participants. Rather than having an arm's-length adversarialrelationship with suppliers, collaborative commerce fosters sharing of sensitiveinternal information with suppliers and purchasers. Managing collaborative commercerequires knowing exactly what information to share with whom. Collaborative commerceextends beyond supply chain management activities to include the collaborative development of new products and services by multiple cooperating firms.

A good example of collaborative commerce is the long-term effort of Procter &Gamble (P&G), the world's largest manufacturer of personal and health care products,from Crest toothpaste to Tide soap, to work with suppliers and even customers todevelop 50% of its product line over time. In the past, for instance, P&G would designa bottle or product package in-house, and then turn to over 100 suppliers of packagingto find out what it would cost and try to bargain that down. Using Ariba's procurement network, P&G asks its suppliers to come up with innovative ideas for packaging andpricing. Taking it a step further, P&G's website, Pgconnectdevelop.com, solicits newproduct ideas from suppliers and customers. About 50% of P&G's new products originate with substantial input from its suppliers and customers. P&G is also collaboratingwith its biggest online customer, Amazon, by co-locating their operations. P&G setsaside warehouse space for P&G products purchased by Amazon customers. Amazonships the products to its customers directly from the P&G warehouses rather than shippingthem first to Amazon warehouses, and then to the consumer. This collaboration results in Amazon reducing its costs of shipping and storing goods, becoming morecompetitive on price compared to Walmart and Costco, and reducing the time it takesto arrive at consumers' homes. For P&G collaboration means savings on transportationcosts incurred trucking products to Amazon warehouses, and Amazon's help inboosting online sales of P&G products. Other well-known companies using collaboration to develop and deliver products include Harley Davidson, Starbucks, and GE'sEcomagination program.

Although collaborative commerce can involve customers as well as suppliers in thedevelopment of products, for the most part, it is concerned with the development of arich communications

environment to enable inter-firm sharing of designs, productionplans, inventory levels, delivery schedules, and the development of shared products(see **Figure 16.5**).

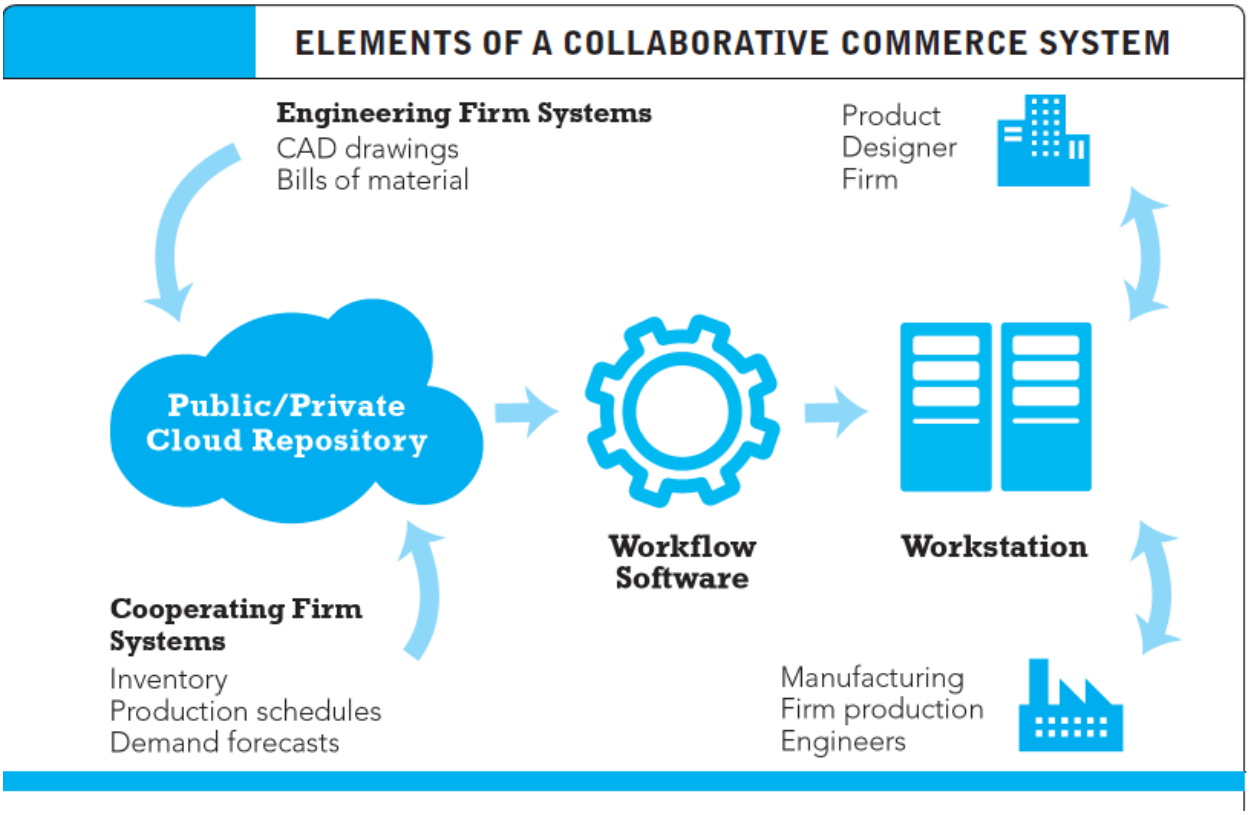

Fig 16.5 Elements of a collaborative commerce system

Collaborative commerce is very different from EDI, which is a technology forstructured communications among firms. Collaborative commerce is more like aninteractive teleconference among members of the supply chain. EDI and collaborativecommerce share one characteristic: they are not open, competitive marketplaces, butinstead are, technically, private industrial networks that connect strategic partnersin a supply chain.

Collaboration 2.0: Cloud, Web, Social, and Mobile

The technology of collaborative commerce has changed greatly since its inceptionover thirty years ago with tools like Lotus Notes, which was used almost entirelywithin firms to establish an environment where employees could share ideas, notes,and ideas, and work on projects together. What's new about collaboration tools todayis that the software and data are stored on cloud servers where it is less expensive,and easy to update; social networks like Facebook and Twitter

are commonly used byemployees in many firms, while other firms deploy their own social network platform; the Web enables very inexpensive collaborative environments; and the mobile platformof smartphones and tablets means that collaboration can take place in many moreplaces and times. Collaboration technologies have expanded collaboration from a within-the-firm platform to a primary tool ofinter-firm B2B collaboration.

Broadband video network systems like Cisco's TelePresence also play a role inenabling frequent, long-distance, collaboration among supply chain partners. TelePresenceis one of several high-bandwidth video systems from different vendors that giveusers the impression they are sharing physical space with other participants who arein fact located remotely, sometimes on the other side of the globe. Cisco TelePresence's Twitter feed enhances the TelePresence experience by adding face-to-face support,scheduling assistance, and demos (Cisco Systems, Inc., 2016b; Cisco Systems, Inc. andVital Images, 2016). Using Skype video conferencing, even tiny businesses can takeadvantage of very inexpensive collaborative platforms over the Web, or mobile platforms.

SOCIAL NETWORKS AND B2B: THE EXTENDED SOCIAL ENTERPRISE

It's a short step from collaboration with vendors, suppliers, and customers, to a morepersonal relationship based on conversations with participants in the supply chainusing social networks—both private and public. Here, the conversations and sharing ofideas are more unstructured, situational, and personal. Procurement officers, managersof supply chains, and logistics managers are people too, and they participate inthe same social network culture provided by Facebook, Twitter, Tumblr, Instagram,and a host of other public social networks as we all do. Being able to respond to fast moving developments that affect supply chains requires something more than awebsite, e-mail, or telephone calls. Social networks can provide the intimate connectionsamong customers, suppliers, and logistics partners that are needed to keep thesupply chain functioning, and to make decisions based on current conditions.

Participants in the supply chain network are tapping into their tablet computers,smartphones, and social network sites for purchasing, scheduling, exception handling,and deciding with their B2B customers and suppliers. In many cases, supply chainsocial networks are private—owned by the largest firm in the supply chain network.In other cases, firms develop Facebook pages to organize conversations among supply chain network members.

Social networks are beginning to be common tools for managers engaged in B2Bcommerce. Public social network sites like Facebook and Twitter can be excellent forcoordinating the flow of information among business partners through the supplychain. Cisco is using its website, Twitter, and Facebook to run new product campaignsfor its business customers using social networks exclusively. Dell, like many businesses,uses its YouTube channel to engage suppliers and customers in conversations about existing products, and ideas for new products.

B2B MARKETING

Despite the size of the B2B e-commerce, B2B marketing in 2015 accounted for onlya relatively small slice (about $6 billion) of the total amount spent on digital marketingand advertising (about $58 billion). While some ofthis disparity results from the slow pace of technological change in supply chainand procurement management, it also reflects the very different nature of much ofB2B e-commerce when compared to B2C e-commerce. Long-term sourcing typicallyinvolves large purchases with commercial relationships that can last several yearsor longer. The sellers and buyers may have known about each other for years, evendecades; the capabilities and financial situation of the firms are known. Both partiesshare an understanding of the price and quality of what is being exchanged in themarket. In these situations, B2C retail marketing tactics are not appropriate. Instead,interpersonal relationships, networking, brand, and informative content marketingusing white papers, videos, podcasts, webinars, blogs, e-books, conferences,and professional associations are the primary and most effective marketing tools. Content marketing refers to using informative media topromote sales rather than advertising the availability and price typical of displayand search advertising in B2C markets. E-mail and social networkscan play a role in content marketing by making potential customers aware of newmedia content.

However, in spot purchase markets for MRO or other commodity products, B2Bmarketing uses many of the same marketing tactics and tools found in B2C marketing:display ads, search engine marketing, websites, social network channels, videos,and mobile ads. The use of mobile advertising in B2B marketing has grown as mobiledevices play a larger role in workplaces. Almost two-thirds (65%) of B2B marketersuse a mobile website or apps that connect customers directly to their marketplaces.

Mobile advertising (largely on newsfeeds or display ads on social networks such asLinkedIn), mobile search, and in-app ads are used by roughly 40% of B2B marketers. While mobile B2B

marketing is growing, it consumes only 5%of B2B marketing budgets, compared to nearly 9% of B2C marketing budgets. Onereason is that purchasing agents do not appreciate having their newsfeeds and mobileexperience interrupted by their suppliers' mobile messages. Generally, purchasingagents know what they want, and when they want it.

Other trends in B2B marketing include sales enablement systems and the use ofpredictive analytics. Sales enablement systems keep track of leads developed fromwebsites, e-mail, and mobile apps, and help the salesforce track these prospectivecustomers through the point of purchase. Predictive analyticshelp B2B marketers estimate the lifetime value of leads based on past marketing data.

16.4 NET MARKETPLACES

One of the most compelling visions of B2B e-commerce is that of an online marketplacethat would bring thousands of fragmented suppliers into contact with hundredsof major purchasers of industrial goods for the purpose of conducting frictionless commerce.The hope was that these suppliers would compete with one another on price,transactions would be automated and low cost, and as a result, the price of industrialsupplies would fall. By extracting fees from buyers and sellers on each transaction, third-party intermediary market makers could earn significant revenues. We referto these online markets as Net marketplaces. Net marketplaces are sell-side digitalenvironments that bring suppliers and buyers together. These Net marketplaces couldscale easily as volume increased by simply adding more computers and communicationsequipment.

In pursuit of this vision, well over 1,500 Net marketplaces sprang up in the earlydays of e-commerce. Unfortunately, many of them have since disappeared but some stillsurvive, and they are joined by other types of Net marketplaces—some private and somepublic—based on different assumptions and business models that are quite successful.

CHARACTERISTICS OF NET MARKETPLACES

There is a confusing variety of Net marketplaces today, and several different ways toclassify them. For instance, some classify Net marketplaces on the basis of their pricingmechanisms—fixed prices or more dynamic pricing, such as negotiation, auction orbid/ask—while others classify markets based on characteristics of the markets theyserve (vertical versus horizontal, or sell-side versus buy-side), or ownership independentthird-party intermediaries (which is most

common) or industry-owned consortia.Although the primary benefits and biases of Net marketplaces have to be determinedon a case-by-case basis depending on ownership and pricing mechanisms, it is oftenthe case that Net marketplaces are biased against suppliers because they can force suppliers to reveal their prices and terms to other suppliers in the marketplace.

TYPES OF NET MARKETPLACES

Although each of these distinctions helps describe the phenomenon of Net marketplaces,they do not focus on the central business functionality provided, nor are theycapable by themselves of describing the variety of Net marketplaces.

In **Figure 16.6**, we present a classification of Net marketplaces that focuses ontheir business functionality; that is, what these Net marketplaces provide for businessesseeking solutions. We use two dimensions of Net marketplaces to create a four-cellclassification table. We differentiate Net marketplaces as providing either indirectgoods (goods used to support production) or direct goods (goods used in production), and we distinguish markets as providing either contractual purchasing (where purchasestake place over many years according to a contract between the firm and itsvendor) or spot purchasing (where purchases are episodic and anonymous—vendorsand buyers do not have an ongoing relationship and may not know one another). Theintersection of these dimensions produces four main types of Net marketplaces thatare relatively straightforward: e-distributors, e-procurement networks, exchanges, andindustry consortia. Note, however, that in the real world, some Net marketplaces canbe found in multiple parts of this figure as business models change and opportunitiesappear and disappear. Nevertheless, the discussion of "pure types" of Net marketplaces is a useful starting point.Each of these Net marketplaces seeks to provide value to customers in differentways. We discuss each type of Net marketplace in more detail in the following sections.

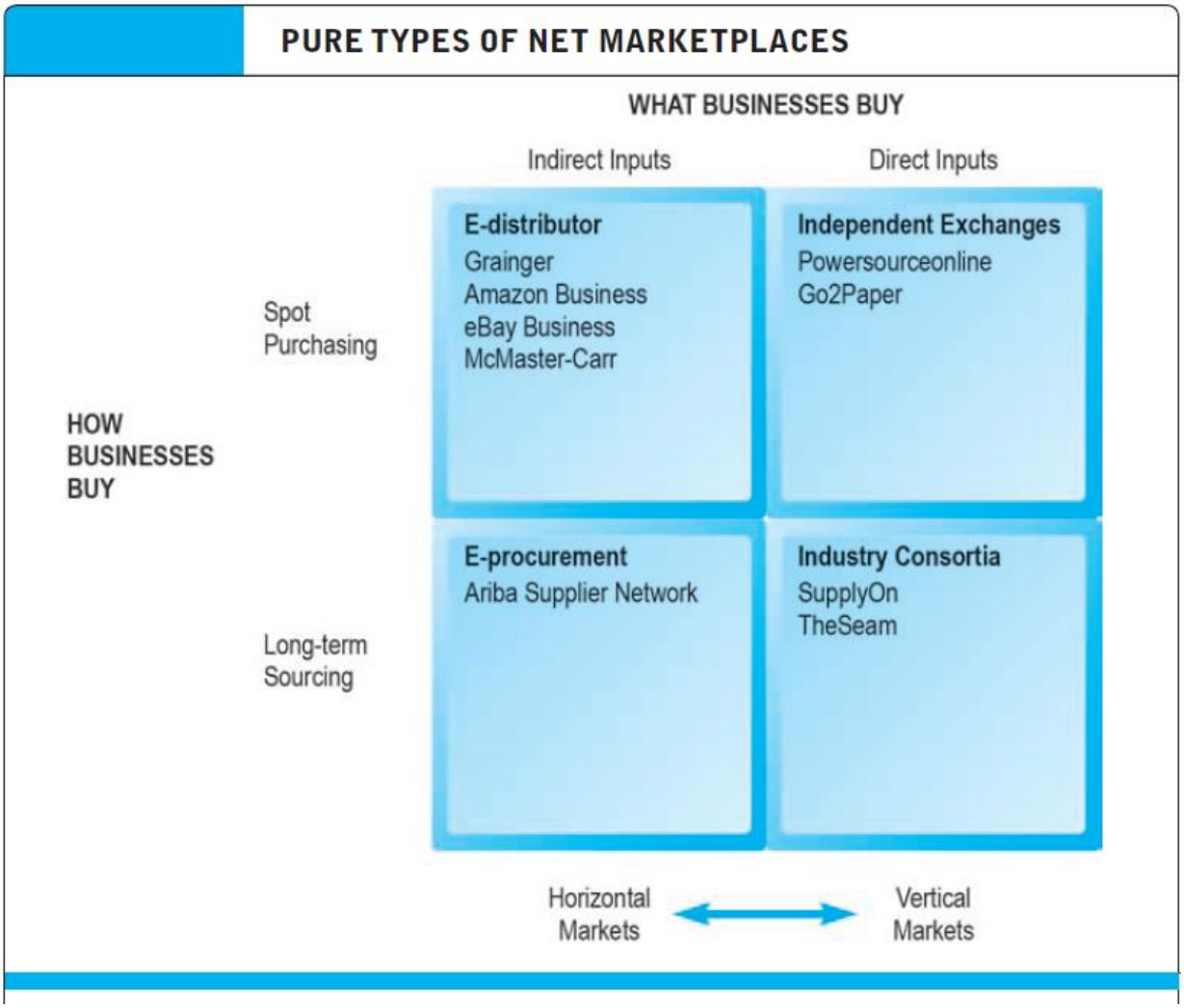

Fig 16.6 Pure types of network market places

E-distributors

E-distributors are the most common and most easily understood type of Net marketplace.An **e-distributor** provides an online catalog that represents the products ofthousands of direct manufacturers. E-distributors are independentlyowned intermediaries that offer industrial customers a single source fromwhich to order indirect goods (often referred to as MRO) on a spot, as-needed basis. Asignificant percentage of corporate purchases cannot be satisfied under a company's existing contracts, and must be purchased on a spot basis. E-distributors make moneyby charging a markup on products they distribute.

Organizations and firms in all industries require MRO supplies. The MRO functionmaintains, repairs, and operates commercial buildings and maintains all themachinery of these buildings

from heating, ventilating, and air conditioning systems to lighting fixtures. E-distributors operate in horizontal markets because they serve many differentindustries with products from many different suppliers. E-distributors usually operatepublic markets in the sense that any firm can order from the catalog, as opposed to private markets, where membership is restricted to selected firms.

E-distributor prices are usually fixed, but large customers receive discounts andother incentives to purchase, such as credit, reporting on account activity, and limitedforms of business purchasing rules (for instance, no purchases greater than $500 fora single item without a purchase order). The primary benefits offered to industrialcustomers are lower search costs, lower transaction costs, wide selection, rapid delivery,and low prices.

W.W. Grainger is one of the most frequently cited examples of an e-distributor.Grainger is involved in long-term systematic sourcing as well as spot sourcing, butits emphasis is on spot sourcing. Grainger's mission is to become the world's leadingsource of MRO suppliers. Its revenue model is that of a typical retailer: it owns theproducts and takes a markup on the products it sells to customers. Grainger's websiteand mobile apps provide users with a digital version of Grainger's famous seven-pound catalog, plus other parts not available in the catalog (adding up to around 1.4 millionparts), as well as a complete ordering and payment system. In 2015, Grainger recorded$3.3 billion in e-commerce revenues (41% of its total sales), up 14% from 2014 (W.W.Grainger Inc., 2016). McMaster-Carr, a New Jersey-based industrial parts mecca formachinists and manufacturers around the world, is a similar e-distributor. As you learned in the opening case, Amazon also entered the B2B distributor market with Amazon Supply, aiming to leverage its global B2C fulfilment infrastructure into theB2B arena, and in 2015, rebranded it as Amazon Business. Amazon Business primarilyengages in spot sales of business products and provides a trading platform for multiplesellers. eBay entered the B2B e-distributors fray by rebranding its eBay Business marketplace in 2016. Other examples of e-distributors include B2Buy and Newegg Business.

16.5 CHECK YOUR PROGRESS

1. What is B2B commerce?
2. What is your understanding of seller-side solutions?
3. What is a hub-and-spoke system?

4. What is a vertical market and a horizontal market
5. Define supply chain management

Answers to Check Your Progress

1. all types of inter-firm trade
2. seller-biased markets that are owned by, and show only goods from, a single seller
3. suppliers connected to a central hub of buyers via private dedicated networks
4. one that provides expertise and products for a specific industry
   market that serves many different industries
5. **supply chain management (SCM) -** refers to a wide variety of activities that firms and industries use to coordinate the key players in their procurement process

16.6 SUMMARY

In this unit, we examined some major B2B e-commerce themes: procurement,supply chain management, and collaborative commerce. Each of these businessprocesses has changed greatly with the evolution of B2B e-commerce systems. we provided an overview of B2B e-commerce. latter we look more closely at the procurement process, and supply chains. Then we place B2B e-commerce in the context of trends in procurement, supply chainmanagement, and collaborative commerce. The final two sections of this unit describe the two fundamental types of B2B e-commerce: Net marketplaces andprivate industrial networks.

16.7 KEYWORDS

- **supply chain competition -** differentiating a firm's products or prices on the basis of superior supply chain management
- **B2B commerce -** all types of inter-firm trade
- **B2B e-commerce (B2B digital commerce) -** that portion of B2B commerce that is enabled by the Internet and mobileApps
- **supply chain -** the links that connect business firms with one another to coordinate production

- **automated order entry systems -** involve the use of telephone modems to send digital orders
- **seller-side solutions -** seller-biased markets that are owned by, and show only goods from, a single seller
- **electronic data interchange (EDI) -** a communications standard for sharing business documents and settlementinformation among a small number of firms
- **buyer-side solutions -** buyer-biased markets that are owned by buyers and that aim to reduce the procurement costs of supplies for buyers

16.8 SELF ASSESSMENT QUESTIONS

1. Discuss the evolution and growth of B2B e-commerce, as well as its potential benefits and challenges.
2. Explain how procurement and supply chains relate to B2B e-commerce.
3. Identify major trends in supply chain management and collaborative commerce.
4. Explain the different characteristics and types of Net marketplaces.
5. Explain the objectives of private industrial networks, their role in supporting collaborative commerce, and the barriers to their implementation.

16.9 REFERENCES

1. Laudon, Kenneth C., and Carol Guercio Traver. *E-Commerce 2017 Business*. Pearson, 2020.