MBA SEM I (2019 pattern)

106 Digital Business

Unit 1

Electronic Commerce

The Digital Revolution and Society:

The final, and perhaps most important, element of the ***digital world*** is people and the way they work and live. Clearly, the digital revolution has changed almost any activity one can

think of—work, play, shopping, entertainment, travel, medical care, education, and much more. Just think about your digital phone, camera, TV, car, home, and almost anything else. It is only natural that people are utilizing technology and EC at an increasing rate.

Examples:

- Google has developed cars that drive themselves automatically in traffic (autonomous vehicles). The cars are being tested in several states, including California, and were approved in the state of Nevada in the summer of 2012. For an overview and potential benefits, including safety. As of 2014, self-driving cars are running in several cities.
- AeroMobile is planning a flying car for 2017 that will have a full complement of e-business features.
- As of 2008, high school girls are able to solicit feedback from their friends regarding dozens of different prom dresses that have been displayed by Sears on Facebook.
- Washers and dryers in some college dorms are controlled via the Internet. Students can sign in at **esuds.net** or use their smartphone to check the availability of laundry machines. Furthermore, they can receive e-mail or SMS alerts when their wash and dry cycles are complete. Some systems can even inject premeasured amounts of detergent and fabric softener at the right cycle time.
- Hailing a taxi in South Florida and other major cities is much easier today. As of August 2012, you can e-hail taxi if you have a smartphone with an application by ZABCAB (**zabcab.com**). All you have to do is to push one button. Your exact location (on a map) will appear automatically on the portable device screen of all subscribing taxi drivers. There is no cost for the user.

- Ford Company is using “My Ford Touch” system to calculate the fastest, shortest, and most fuel-efficient way to get from a given place to a destination. The system charts a route that avoids congestion (based on historical and real-time traffic data). Results are shown on a dashboard. Initial deployment was in the 2012 model of the Ford Focus.

- A new Japanese hotel is staffed entirely by robots
- As of 2014, guests in several Starwood Hotels & Resorts can enter their rooms by using a smartphone as a room key.
- An international research project is developing a computerized system that enables monitoring patients at home in real time, conducting a diagnosis, and providing medical advice. The objective is to reduce traffic to medical facilities while increasing the quality of care. The project is managed in Israel with collaboration of experts from several European countries.

- Union Pacific, the largest U.S. railroad company, is using a large number of sensors on their trains and other equipment to collect data that is transmitted via wireless and wireline networks to a data center There an analysis is performed to determine optimal preventive maintenance by using *predictive analytics*. Over 10 billion data items were collected in 2011 alone. The analysis increased the annual revenue by $35 million.
- Water loss involving many influencing variables in the Valley of the Moon Water District in California has been considerably reduced by using smart analytical computing from IBM.
- Supermarket shoppers in Finland are using camera-equipped smartphones that can scan the bar code of an item to find its ingredients, nutrient value, and exercise time needed to burn the consumed calories.

Bicycle computers (by Bridgestone Cycle Co.) can automatically keep track of your travel distance, speed, time, and calorie consumption.

- Champions of the World Series of Poker used to be people in their 50s and 60s who spent years playing the game to gain the experience needed to win. But in 2009, Joe Cada from the USA won the main event at the World Series of Poker, at the age of 21. To gain experience quickly, Cada plays extensively online. Joe McKeehen won in 2015, at the age of 24.

The Digital and Social Worlds

The Digital Economy:

The **digital economy**, also known as the ***Internet economy***, is an economy based on online transactions, mostly e-commerce. It includes digital wireline or wireless communication networks (e.g., the Internet, intranets, extranets, and VANs), computers, software, and other related information technologies.

This digital economy displays the following characteristics:

• Many digitizable products—books, databases, magazines, information, electronic games, and software—are delivered over a digital infrastructure anytime, anywhere in the world, interconnected by a global grid. We are moving from analog to digital, even the media is going digital

• Information is transformed into a commodity.

• Financial transactions are now digitized, and chips are embedded in many products (e.g., cameras, cars). Knowledge is codified.

• Work and business processes are organized in new and innovative ways.

• Disruptive innovation is occurring in many industries

Table summarizes the major characteristics of the **digital economy.**

Sharing economy refers to an economic system constructed around the concept of sharing goods and services among the participating people. Also known as “collaborative consumption” and “collaborative economy” such systems appear in different forms and frequently use information technologies in their operations. A well-known example is car sharing. The major benefits for participants are cost reduction for buyers and the ability to sell more for sellers. Societal benefits include reduction of carbon footprint (e.g., in ride sharing), increase recycling, and increase social interactions.

Sharing Economy and E-Commerce

Several EC models and companies are based on the concept of the sharing economy. Examples include Uber (for ride sharing), Yerdle (a sharing economy free marketplace),

Kickstarter (for crowdfunding), Krrb (a P2P marketplace), and Knok and Love Home Swap for home swapping. Money lending is growing rapidly (lending clubs). Vacation rentals

are a large area where home and condo owners provide short-term rentals possibly for an exchange or renting (e.g., see Airbnb, HomeAway, and VRBO).

Area	Description
Globalization	Global communication and collaboration; global electronic marketplaces and competition
Digitization	Music, books, pictures, software, videos, and more are digitized for fast and inexpensive storage and distribution
Speed	A move to real-time transactions, thanks to digitized documents, products, and services. Many business processes are expedited by 90% or more
Information overload and intelligent search	Although the amount of information generated is accelerating, intelligent search tools can help users find what people need
Markets	Markets are moving online. Physical marketplaces are being replaced or supplemented by electronic markets; new markets are being created, increasing competition
Business models and processes	New and improved business models and processes provide opportunities to new companies and industries
Innovation	Digital and Internet-based innovations continue at a rapid pace. More patents are being granted than ever before
Obsolescence	The fast pace of innovation creates a high rate of obsolescence
Opportunities	Opportunities abound in almost all aspects of life and operations
Fraud	Criminals employ a slew of innovative schemes on the Internet. Cybercons are everywhere
Wars	Conventional wars are changing to cyberwars or are complemented by them
Organizations	Organizations are moving to digital enterprises and social businesses

The Digital Enterprise:

The term ***digital enterprise*** has several definitions. It usually refers to an enterprise, such as Amazon.com, Google, Facebook, or Ticketmaster, which uses computers and information systems to automate most of its business processes. The **digital enterprise** is a new business model that uses IT to gain competitive advantage by increasing employee productivity, improving efficiency and effectiveness of business processes, and better interactivity between vendors and customers.

Note that the term *enterprise* refers to any kind of organization, public or private, small or large. An enterprise can be a manufacturing plant, a hospital, a university, a TV network,

or even an entire city. They are all moving toward being digitized.

A digital enterprise uses networks of computers in EC to facilitate the following:

• All business partners are reached via the Internet, or a group of secured intranets, called an extranet, or value-added private communication lines.

• All internal communication is done via an intranet, which is the counterpart of the Internet inside the company.

Smart and Intelligent Enterprise Systems

IBM is a leading force in developing smart (or intelligent) computing systems (other companies include SAP, Intel, Oracle, Google, and Microsoft). IBM provides software and

knowledge to digital enterprises (including cities).

Brick-and-mortar organizations	Digital organizations (enterprises)
Selling in physical stores	Selling online
Selling tangible goods	Selling digital goods online as well
Internal inventory/production planning	Online collaborative inventory forecasting
Paper catalogs	Smart electronic catalogs
Physical marketplace	Electronic marketplace
Use of telephone, fax, VANs, and traditional EDI	Use of computers, smartphones, the Internet, and extranets and EDI
Physical auctions, infrequently	Online auctions, everywhere, any time
Broker-based services, transactions	Electronic infomediaries, value-added services
Paper-based billing and payments	Electronic billing and payments
Paper-based tendering	Electronic tendering (reverse auctions)

Push production, starting with demand forecasting	Pull production, starting with an order (build-to-order)
Mass production (standard products)	Mass customization, build-to-order
Physical-based commission marketing	Affiliated, virtual marketing
Word-of-mouth, slow and limited advertisement	Explosive viral marketing, in particular in social networks
Linear supply chains	Hub-based supply chains
Large amount of capital needed for mass production	Less capital needed for build-to-order; payments can be collected before production starts
Large fixed cost required for plant operation	Small fixed cost required for smaller and less complex plant operation
Customers' value proposition is frequently a mismatch (cost > value)	Perfect match of customers' value proposition (cost ≤ value)

Virtual Communities:

A ***community*** is a group of people with common interests who interact with one another. A **virtual community** is one where the interaction takes place over a computer network, mainly the Internet. Virtual communities' parallel typical physical communities, such as neighborhoods, clubs, or associations, but people do not meet face to face. Instead, they meet online. Virtual communities offer several ways for members to interact, collaborate, and trade.

Community type	Description
Transaction and other business activities	Facilitate buying and selling. Combine an information portal with an infrastructure for trading. Members are buyers, sellers, intermediaries, etc., who are focused on a specific commercial area (e.g., fishing)
Purpose or interest	No trading, just exchange of information on a topic of mutual interest. Examples: Investors consult The Motley Fool (**fool.com**) for financial advice; music lovers go to **mp3.com**
Relations or practices	Members are organized around certain life experiences. Example: **seniornet.com** is for senior citizens. Professional communities also belong to this category. Example: **aboutus.org/Isworld.org** is a space for information systems faculty, students, and professionals
Fantasy/role playing	Members share imaginary environments. Examples: sports fantasy teams at **espn.go.com** see **sports.yahoo.com/fantasy**, **horseracegame.com**
Social networks	Members communicate, collaborate, create, share, form groups, entertain, and more. Facebook is the leader
Virtual worlds	Members use avatars to represent themselves in a simulated 3-D environment where they can play games, conduct business, socialize, and fantasize about whatever they like

Characteristics of Traditional Online Communities and Their Classification

Most virtual communities are Internet-based, known also as ***Internet communities*.**

Hundreds of thousands of communities exist on the Internet, and the number is growing rapidly. Pure-play Internet communities may have thousands or even hundreds of millions of members. By early 2016 (its 12th anniversary), Facebook had grown to about one billion active members around the world. This is one major difference from traditional purely physical communities, which usually are much smaller. Another difference is that off-line communities frequently are confined to one geographic location, whereas very a few online communities are geographically confined.

Classifications of Virtual Communities

Virtual communities can be classified in several ways.

Public versus Private Communities

Communities can be designated as *public*, meaning that their membership is open to anyone. The owner of the community may be a privately held corporation (e.g., Twitter), public for profit, or nonprofit organizations. Many of the large social networks, including Facebook, belong to the public for profit category. In contrast, *private* communities belong to a company, an association, or a group of companies and their membership is limited to people who meet certain requirements (e.g., work for a particular employer or work in a particular profession). Private communities may be internal (e.g., only employees can be members) or external (for customers and suppliers).

Classification Categories

Another option is to classify the members as *traders, players, just friends, enthusiasts*, or *friends in need*. A more common classification recognizes six types of Internet communities:

(1) transaction, (2) purpose or interest, (3) relations or practices, (4) fantasy, (5) social networks, and (6) virtual worlds.

Social Network Service Sites

Facebook, Pinterest, Twitter, Instagram, Google+, and other social networks attract the majority of media attention in the United States, they also have many members in other countries. Other country-based social network sites are proliferating and growing in popularity worldwide.

- Users can construct a Web page where they present their profile to the public.
- Users can create a circle of friends who are linked together.
- The site provides discussion forums (by subgroup, by topic).
- Photo, video, and document viewing and sharing (streaming videos, user-supplied videos) are supported.
- Wikis can be used to jointly create documents.
- Blogs can be used for discussion, dissemination of information, and much more.
- These sites offer community e-mail and instant messaging (IM) capabilities.
- Experts can be made available to answer member queries.

- Consumers can rate and comment on products and services.
- Online voting may be available to poll member opinions.
- The site may provide an e-newsletter.
- The site supports conference (group) chatting, combined with document and image sharing.
- Message and bulletin board services are available for posting information to groups and individuals on the website.
- The site provides storage for content, including photos, videos, and music.
- Users can bookmark self-created content.
- Users can find other networks, friends, or topics of interest.

Business-Oriented Public Social Networks

Business-oriented social networks, also known as *professional social networks*, are social networks whose primary objective is to facilitate business. The **prime example** here is

linkedin.com, which provides business connections and enables recruiting and finding jobs Another example is **craigslist.org**, the largest classified ad site, which offers many social-oriented features Another **example** is **The Brain Yard**, a place for executives to find news, knowledge, and contacts. Finally, **doximity.com** is a medical network for U.S. physicians and health care professionals. Businesses are using business social networks to advertise their brands as well as making and enhancing contacts globally.

Some Capabilities of Business-Oriented Networks

Companies can engage users in new innovative ways. More direct communication is achieved by offering additional ways for consumers to engage and interact among themselves and with organizations.

For **example,** a company can:

- Encourage consumers to rate and comment on products and services.
- Allow consumers to create their own topic areas and build communities (forums) around shared interests possibly related to a company's products.
- Hire bloggers or staff editors who can lead discussions about customer feedback.
- Provide incentives such as sweepstakes and contests for customers to get involved in new product (service) design and marketing campaigns.
- Encourage user-made videos about products/services and offer prizes for winning video ads.
- Provide interesting stories in e-newsletters.

Private (or Enterprise) Social Networks

In addition to public-oriented business social networks such as LinkedIn and Craigslist, there are many private social networks (also called enterprise networks) within organizations.

An example **Starbucks** and other companies with notable internal networks for employees only include Northwestern Mutual. According to the company, they have an internal blog ("Mutualblog") and a Yammer account internally, which is used by over 1000 employees to dialog and make connections on nonproprietary topics. Private networks are for employees, business partners, and customers.

Business Models and Services Related to Social Networking

Social network sites provide innovative business models to users who dress up paper dolls that look like celebrities (**stardoll.com**). New revenue models are being created almost daily. Although some generate limited revenue, others succeed. Lately, the Pinterest model has become popular.

For **example**, **vivapets.com** attracts pet lovers with wiki contributions in its attempt to catalog all pet breeds. The site attracts hundreds of thousands of unique visitors per month. Obviously, pet food-related vendors are interested in placing ads there. Some of the popular social-oriented services are:

1. **Xanga.com** hosts blogs, photo blogs, and social networking profiles. Users of Xanga are referred to as "Xangans." Xanga was originally launched as a site for sharing book and music reviews. Today it is one of the most popular blogging and networking services, with an estimated 10,000,000–100,000,000 users worldwide. Xanga has a very popular blogging in Hong Kong, Macao, and Singapore.

2. **Digg.com** is a community-based website that takes short reports from members on podcasts, news articles, and videos, which are then voted on by other participants. Digg is available on a website, iPhone app, and daily e-mail.

Defining Electronic Commerce:

Electronic commerce (EC) refers to using the Internet and other networks (e.g., intranets) to purchase, sell, transport, or trade data, goods, or services.

Defining E-Business: E-business is not just the buying and selling of goods and services, but conducting all kinds of business online such as servicing customers, collaborating with business partners, delivering e-learning, and conducting electronic transactions within organizations. E-commerce can be viewed as a subset of e-business.

Pure Versus Partial EC:

EC can be either pure or partial depending on the nature of its three major activities: ordering and payments, order fulfillment, and delivery to customers. Each activity can be done physically or digitally. Thus, there are eight possible combinations as shown in Table. If all activities are digital, we have pure EC, if none are digital we have no EC, otherwise we have partial EC. If there is at least one digital dimension, we consider the situation EC,

but only partial EC. For **example**, purchasing a computer from Dell's website or a book from Amazon.com is partial EC, because the merchandise is physically delivered. However, buying an e-book from Amazon.com or a software product from Buy.com is pure EC, because ordering, processing, and delivery to the buyer are all digital. Note that many

Companies operate in two or more of the classifications. For **example**, Jaguar has a 3D application for self-configuration of cars online, prior to shopping

Classifications of e-commerce

Activity	1	2	3	4	5	6	7	8
Ordering, payment	P	D	D	D	D	P	P	P
Order fulfillment	P	D	D	P	P	D	P	D
Delivery (shipment)	P	D	P	P	D	D	D	D
Type of EC	Non-EC	Pure EC	Partial EC					

P physical, *D* digital

EC Organizations

Purely physical organizations (companies) are referred to as **brick-and-mortar (**or **old economy) organizations**, whereas companies that are engaged only in EC are considered

virtual (pure-play) organizations. Click-and-mortar organizations are those that conduct some EC activities.

Electronic Markets and Networks

EC can be conducted in an **electronic market (e-marketplace)**, an online location where buyers and sellers conduct commercial transactions such as selling goods, services, or information. Any individual can also open a private market selling products or services online. Electronic markets are connected to sellers and buyers via the **Internet**.

An **intranet** is a corporate or government internal network that uses Internet tools, such as Web browsers and Internet protocols.

An **extranet**, a network that uses Internet technology to link intranets of several organizations in a secure manner

Emerging E-Commerce Platforms:

1) Augmented Reality:

An increasing number of business applications use the technology of *augmented reality* (AR). According to Wikipedia, **augmented reality** is "a live or indirect view of a physical, real-world environment whose elements are *augmented* (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data" Such an arrangement helps people enhance the sensory perception of reality. The computerized layer can be seen through an application on mobile devices such as smartphones, webcams, or 3D glasses Google developed Augmented Reality (AR) glasses called "Google Glass"

Applications in E-Commerce

Google's AR is being used by several companies. For **example**, **Walgreens** is using AR for improving customer loyalty.

Applications in Social Gaming

Social AR gaming is a superb tool for generating marketing leads and brand recognition

because of the huge number of players engaged in games connected with a product.

Virtual Reality (VR)

Virtual reality is a computer-generated simulation of a real-life environment in which users can be immersed. People feel like they are inside the environment and they can manipulate it. To experience VR, user must wear special glasses and handsets. The technology has been around for decades but was used mainly for computer games.

Example is **Facebook's Oculus.**

2) Crowdsourcing

Another platform for e-commerce is crowdsourcing. Crowdsourcing is a platform for collective intelligence in e-commerce and social commerce.

The term ***crowd*** refers to a large group of people such as a group of consumers, employees of a corporation, or members of a social network who offer expertise.

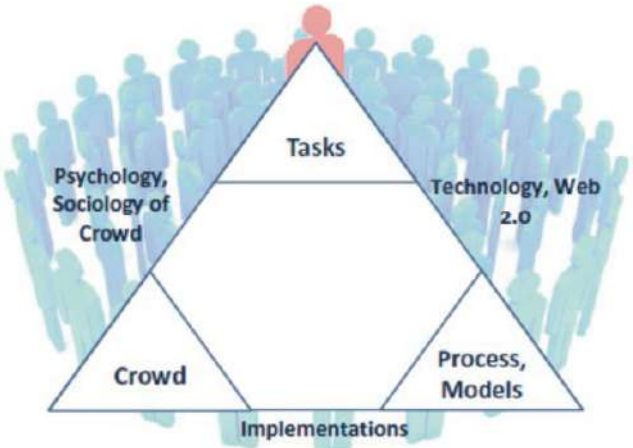
Crowdsourcing utilizes crowds to collectively execute tasks such as solving problems, innovating, or getting large projects completed by dividing the work among many people.

The term was coined by Jeff Howe in June 2006. In the crowdsourcing process, the initiator recruits a crowd (e.g., customers) to create content, a cumbersome task or in research and

development. This is based on the idea that two heads are better than one. The collective intelligence of large groups is assumed to be able to solve complex problems at low cost.

The elements of crowdsourcing

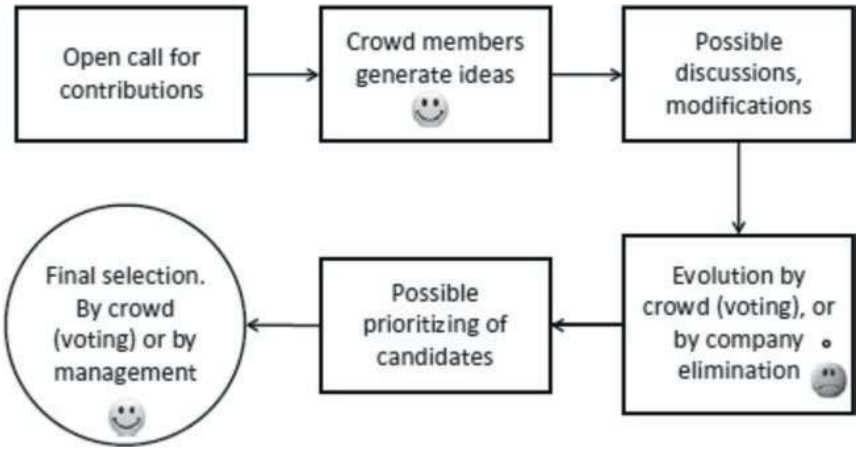
Three elements are involved: the **task(s)** to be carried out, the **crowd,** which is used to work on the task, and the **models** and **processes** used by the crowd to execute the task. These elements are connected by features related to the tasks and the crowd (such as the psychology of the crowd), the technologies used (such as idea generation and voting), and implementation issues such as incentives paid to the participants.



The Process of Crowdsourcing

Crowdsourcing can be viewed as a collective problem-solving or work-sharing process, and usually is conducted as a Web-based activity. In a typical use of crowdsourcing, problems are broadcasted either to a known crowd or to an *unknown* group of participants. The communication usually starts as an open call for solutions or ideas. The members of the crowd are organized as an online community, and the members submit individual work.

The crowd may also discuss the solutions and may vote for a final short list. Alternatively, the short list is then prioritized (e.g., ranked). The final selection can be made by the crowd or by management. The winning individuals in the crowd are well compensated, either monetarily or with special recognition. In other cases, the only rewards may be the satisfaction with a job well done. The use of crowdsourcing can yield results from amateurs or unrecognized professionals.



Example: Starbucks

Starbucks introduced My Starbucks Idea a social media site designed to solicit ideas and Feedback from customers. The site was built around four key themes: (1) ideas are user generated; (2) users can vote to short list ideas, discussing them before and/or after the vote; and (3) company employees act as "idea partners," providing answers to questions and leading discussions. The crowd's idea generation process is visible to the entire Starbucks community. The members can see the status of each proposal.

Benefits of Crowdsourcing

- Problems can be analyzed or solved at comparative little cost. (Payment can be determined by the results; however, sometimes there is no monetary payment, just praise or accolades).
- Solutions can be reached quickly since many people work on the needed research project simultaneously. Also, designs of products may be expedited.
- The contributing crowd may reside within the organization; therefore, talents may be discovered.
- By listening to the crowd, organizations gain first hand insight into the desires of their customers (or employees). There is built-in market research when the crowd is composed of customers.
- Crowdsourcing can tap into the global world of ideas. The crowd may include business partners, customers, academicians, etc., and the members of the crowd can reside in different countries.
- Customers tend to be more loyal if they participate in a company's problem-solving project (see the

The Content and Framework of E-Commerce

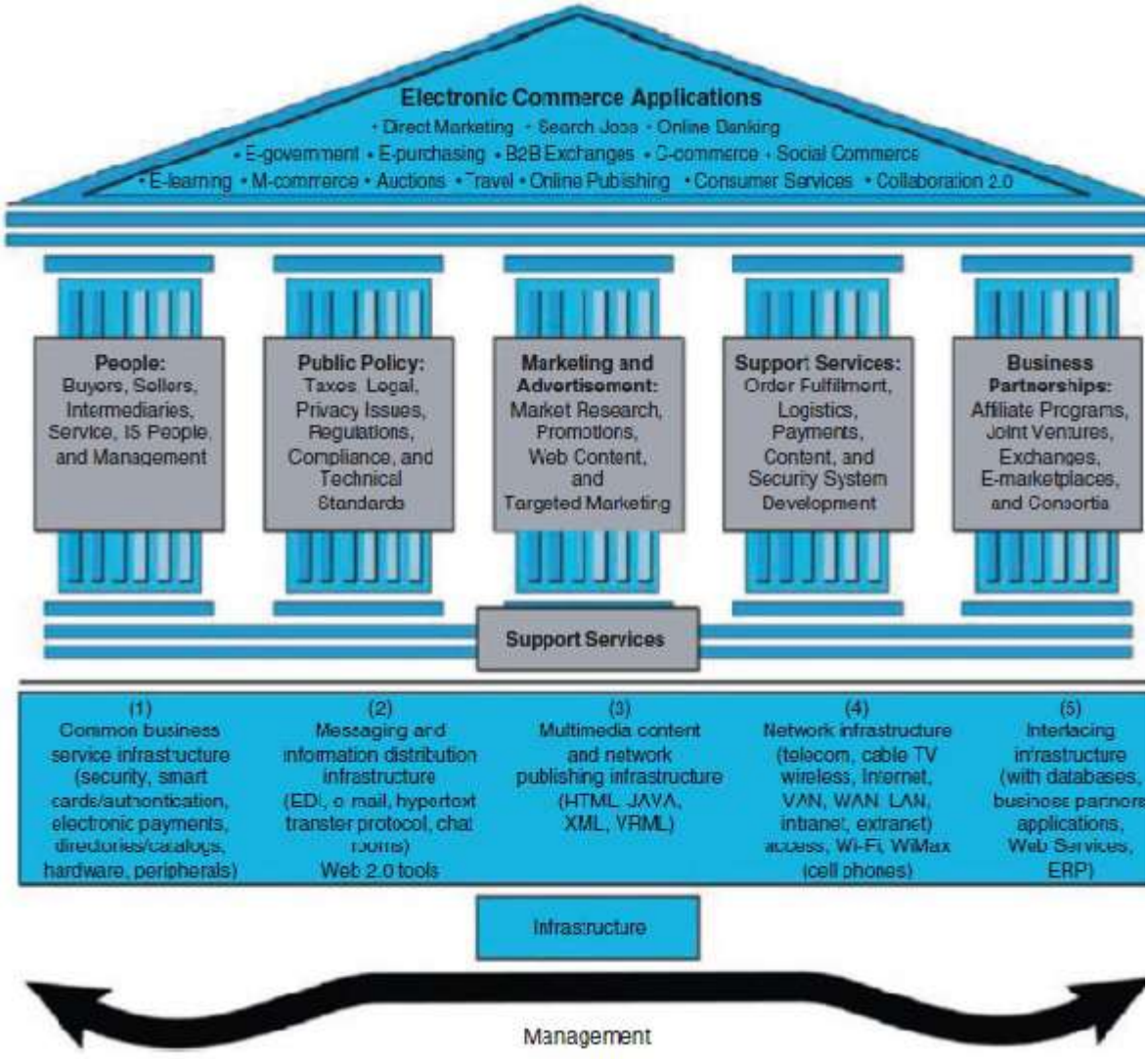
Classifying e-commerce aids understanding of this diversified field. In general, selling and buying electronically can be either business-to-consumer (B2C) or business-to-business

(B2B). Online transactions are made between businesses and individual consumers in B2C, such as when a person purchases a coffee at **starbucks.com** or a computer at **dell.com.** In B2B, business transactions are made online between businesses, such as when Dell electronically buys parts from its suppliers. Dell also collaborates electronically with its partners and provides customer service online e-CRM.

An EC Framework:

The EC field is diverse, involving many activities, organizational units, and technologies. Therefore, a framework that describes its contents can be useful. Figure introduces one such framework. There are many EC applications (**top** of figure). To perform these applications, companies need the right information, infrastructure, and support services. Figure shows that EC applications are supported by infrastructure and by the following five support areas.

The infrastructure for EC is shown at the **bottom** of the figure. *Infrastructure* describes the hardware, software, and networks used in EC. All of these components require good *management practices*. This means that companies need to plan, organize, motivate, devise strategy, and restructure processes, as needed, to optimize the business use of EC models and strategies.



1. **People.** Sellers, buyers, intermediaries, information systems and technology specialists, other employees, and any other participants.
2. **Public policy.** Legal and other policy and regulatory issues, such as privacy protection and taxation, which are determined by governments. Included are technical standards and compliance.
3. **Marketing and advertising.** Like any other business, EC usually requires the support of marketing and advertising. This is especially important in B2C online transactions, in which the buyers and sellers usually do not know each other.
4. **Support services.** Many services are needed to support EC. These range from content creation to payments to order delivery.

5. **Business partnerships.** Joint ventures, exchanges, and business partnerships of various types are common in EC. These occur frequently throughout the *supply chain* (i.e., the interactions between a company and its suppliers, customers, and other partners).

Classification of E-Commerce by the Nature of the Transactions and the Relationships Among Participants

Business-to-Business (B2B)

Business-to-business (B2B) EC refers to transactions between and among organizations. Today, about 85% of EC volume is B2B. For Dell, the entire wholesale transaction is B2B. Dell buys most of its parts through e-commerce and sells its products to businesses (B2B) and individuals (B2C) using e-commerce.

Business-to-Consumer (B2C)

Business-to-consumer (B2C) EC includes retail transactions of products or services from businesses to individual shoppers. The typical shopper at Amazon.com is of this type. Since the sellers are usually retailers, we also call this type **e-tailing**.

Consumer-to-Business (C2B)

In **consumer-to-business (C2B),** people use the Internet to sell products or services to individuals and organizations. Alternatively, individuals use C2B to bid on products or services. Priceline.com is a well-known organizer of C2B travel service transactions.

Business-to-Employees (B2E)

The **business-to-employees (B2E)** category refers to the delivery of services, information, or products from organizations to their employees. A major category of employees is *mobile employees*, such as field representatives or repair employees that go on to customers. EC support to such employees is also called *business-to-mobile employees (B2ME).*

Consumer-to-Consumer (C2C)

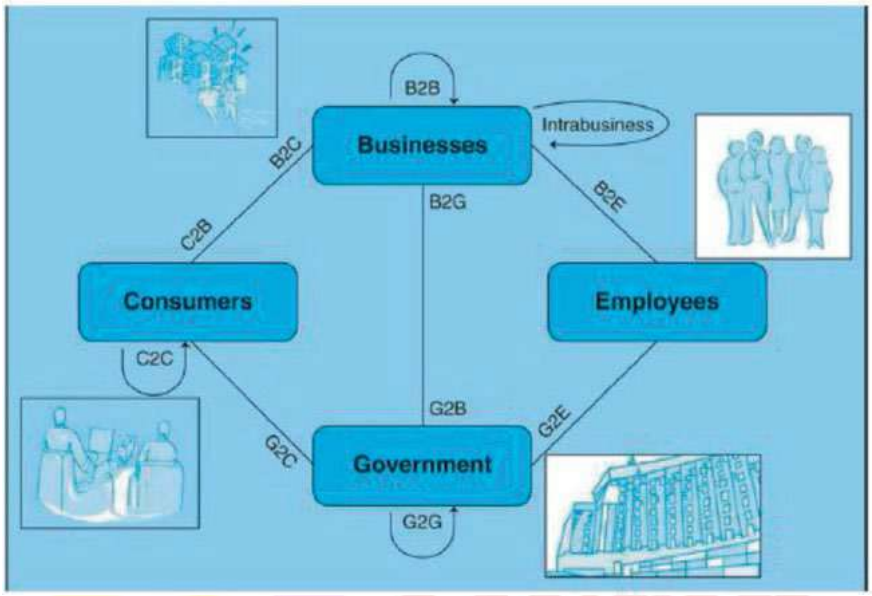
In the **consumer-to-consumer (C2C)** EC category individual consumers sell to or buy from other consumers. Examples of C2C include individuals selling computers, musical instruments, or personal services online. EBay sales and auctions are mostly C2C as are the ads in Craigslist.

Collaborative Commerce

Collaborative commerce (c-commerce) refers to online activities and communications done by parties working to attain the same goal. For **example**, business partners may design a new product together.

E-Government

In **e-government** EC, a government agency buys or provides goods, services, or information from or to businesses (G2B) or from or to individual citizens (G2C). Governments can deal also with other governments (G2G).



E-Commerce Business Models:

1. Brokerage: Market makers that charges fee for their services.

2. Advertising: Websites that provide content and charge advertisers for related ads.

3. Infomediary: Provide information and/or infrastructure that help buyers and/or sellers and charge for their services.

4. Merchant: Retailers (such as Walmart or Amazon): These buy the products and sell them at profit.

5. Direct model: Sell without intermediaries.

6. Affiliate: Paying website owners to place banners. Share fees received from advertisers.

7. Community: A social media-based model that utilizes Web 2.0 tools, social networks.

Integrating the Marketplace with the Market space:

From the point of view of the consumer, as well as of most of the merchants and suppliers, these two entities exist, and will continue to exist, together. Probably the most noticeable integration of the two concepts is in the click-and-mortar organization. In the near future, the click-and-mortar organization will be the most prevalent model (e.g., see Sears.com, Target.com, Costco. com, and Walmart.com), although the model may take different forms. Some organizations will use EC as just another sales channel, as most large retailers, airlines, and banks are doing today. Others will use EC only for some products and services, and sell other products and services the conventional way (e.g., LEGO Group). The consumers prefer to have the choice of where to shop. Consumers love the combination of ordering online and picking up the merchandise in the physical store.

Web 2.0:

The term *Web 2.0* was coined by O'Reilly Media in 2004.**Web 2.0** is the second generation of Internet-based tools and services that enables users to easily generate content, share

media, and communicate and collaborate, in innovative ways. Karakas views Web 2.0 as a new digital ecosystem, which can be described through five C's: creativity, connectivity, collaboration, convergence, and community.

Social Media

Social media involves user-generated online text, image, audio, and video content that are delivered via Web 2.0 platforms and tools. This media is used primarily for social interactions and conversations such as sharing opinions, experiences, insights, and perceptions, and for

online collaboration. A key element is that users produce, control, and manage content. Additional definitions, descriptions, and references, and a framework.

The Difference between Social Media and Web 2.0

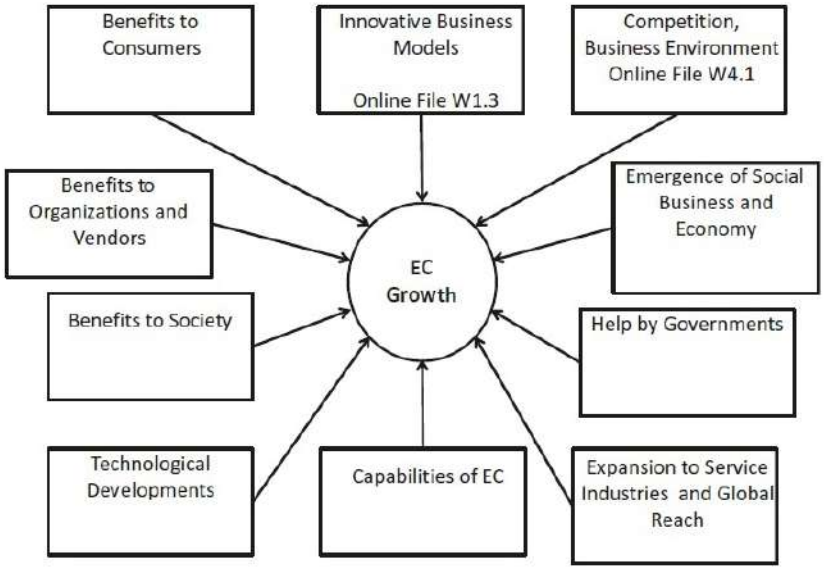
Web 2.0 is related to the concept of social media; while social media uses Web 2.0 and its tools and technologies, the social media concept includes the philosophy of connected people, the interactions among them, the social support provided, the digital content that is created by users, and so forth.

The Drivers of Ecommerce:

It is expected to have non-stoppable growth and it expands consistently into new areas of our life. EC is driven by many factors depending on the industry, company, and application involved. (Fig)

The Benefits of E-Commerce:

There are many benefits of EC and they continue to increase with time. We elected to EC provides benefits to *organizations, individual customers*, and *society*.



Benefit	Description
Benefits to organizations	
Global reach	Quickly locating customers and/or suppliers at reasonable cost worldwide
Cost reduction	Lower cost of information processing, storage, and distribution
Facilitate problem solving	Solve complex problems that have remained unsolved
Supply chain improvements	Reduce delays, inventories, and cost
Business always open	Open 24/7/365; no overtime or other costs
Customization/personalization	Make order for customer preference
Ability to innovate, use new business models	Facilitate innovation and enable unique business models
Lower communication costs	The Internet is cheaper than VAN private lines
Efficient procurement	Saves time and reduces costs by enabling e-procurement
Improved customer service and relationship	Direct interaction with customers, better CRM
Help SMEs to compete	EC may help small companies to compete against large ones by using special business models
Lower inventories	Using customization inventories can be minimized
Lower cost of distributing digitizable product	Delivery online can be 90% cheaper
Provide competitive advantage	Lower prices, better service

Benefits to consumers	
Availability	Huge selection to choose from (vendor, products, styles)
Ubiquity	Can shop any time from any place
Self-configuration	Can self-customize products
Find bargains	Use comparison engine
Real-time delivery	Download digital products
No sales tax	Sometimes; changing
Enable telecommuting	Can work or study at home or any place
Social interaction and engagement	In social networks
Find unique items	Using online auctions, collectible items can be found
Comfortable shopping	Shop at your leisure without pushy sales clerks bothering you

Benefits to society	
Enable telecommuting	Facilitate work at home; less traffic, pollution
More and better public services	Provided by e-government
Improved homeland security	Facilitate domestic security
Increased standard of living	Can buy more and cheaper goods/services
Close the digital divide	Allow people in rural areas and developing countries to use more services and purchase what they really like

Limitations of E-Commerce:

Technological limitations	Non-technological limitations
Need for universal standards for quality, security, and reliability	Security and privacy concerns deter customers from buying
The telecommunications bandwidth is insufficient, especially for m-commerce, videos, and graphics	Lack of trust in sellers, in computers, and paperless faceless transactions hinders buying
Software development tools are still evolving	Resistance to change
It is difficult to integrate Internet and EC software with some existing (especially legacy) applications and databases	Many legal and public policy issues are not resolved or are not clear
Special Web servers are needed in addition to the network servers, which add to the cost of EC	National and international government regulations sometimes get in the way
Internet accessibility is still expensive and/or inconvenient	It is difficult to measure some of the costs and benefits of EC
Large-scale B2C requires special automated warehouses for order fulfillment	Not enough customers. Lack of collaboration along the supply chain

Impact of E-Commerce on business, government, customers, citizens and society:

The major reason to study e-commerce is that it is rapidly growing and impacting many business and marketing operations. The percentage of EC of total commerce is increasing

rapidly and some predict that most future commerce will be online. Thus, any businessperson or a business student should learn about this field. This is why the academic area of e-commerce that started around 1995 with only a few courses and textbooks is growing rapidly. Today, many universities offer EC courses and complete programs in e-commerce or e-business (e.g., majors in e-commerce, minors in e-commerce and certificate

programs. Recently, e-commerce topics have been integrated into all functional fields (e.g., Internet marketing, electronic financial markets). The reason for this proliferation is that e-commerce is penetrating more and more into business areas, services, and governments. Finally, it is fascinating field with its innovative business models. However, there are also some very tangible benefits to increased knowledge of EC. First, your chances of getting a good (or better) job are higher. The demand for both technical and managerial EC skills is growing rapidly, and so are the salaries. (**salary.com**) Hundreds of well-paying open positions are available in areas related to social media, social networking, and social commerce. Second, your chances for a promotion could be higher if you understand EC and know how to seize its opportunities. Finally, it gives you a chance to become a billionaire, like the founders of Google, Facebook, YouTube, Amazon.com, and Alibaba, or to make a great deal of money on eBay. You can make money simply by selling on eBay or your own website. And you can do it even while you are a student. (**jetpens.com**.)

An entrepreneur from Cupertino Monte Vista High School in California, who initiated three Web 2.0 successful start-up companies, making substantial money. In 2016, a 9-year-old sold thousands of boxes of Girl Scout cookies on the Internet instead of going door-to-door. Young people to make money from EC selling on eBay. Experts suggest the following ways to earn extra cash online: (1) sell your craft; (2) make money from your talent; (3) be a nurse on call; (4) write, edit, or proofread; (5) design graphics and websites; (6) tutor kids or adults; (7) give advice; (8) provide customer service; (9) launch a blog; (10) give your opinion (for a fee); (11) search the Internet; and (12) do online tasks. **(shop.com)**

Unit 2

Mobile Commerce, Social Commerce and IoT

Mobile Commerce:

Mobile commerce (m-commerce), also known as *m-business*, refers to conducting e-commerce by using mobile devices and wireless networks. Activities include B2C, B2B, m-government, and m-learning transactions, as well as the transfer of information and money. Like regular EC applications, m-commerce is an electronic transaction conducted by using

mobile devices via the Internet, corporate intranets, private communication lines, or over other wireless networks. For example, paying for an item in a vending machine or pay taxes with an iPhone is considered m-commerce. M-commerce provides an opportunity to deliver new services to existing customers and to attract new customers to EC anytime, anywhere.

Initially, the small screen size and slow bandwidth limited the usefulness to consumers. However, this situation is changing rapidly due to the widespread use of smartphones and tablet computers. In addition, now consumers are more accepting of the handheld culture. Furthermore, the adoption of m-commerce is accelerating due to the spread of 3G and 4G networks, and soon 5G. Finally, free Wi-Fi Internet access in many locations helps.

The Attributes of M-Commerce:

Many of the EC applications for **example**, online shopping, e-travel, e-learning, e-entertainment, and online gaming are all gaining popularity in mobile B2C. Auction sites use m-commerce to send messages to bidders during the auction process, governments encourage m-government and wireless collaborative commerce in B2B EC is on the rise. The major attributes include:

- **Ubiquity.** *Ubiquity* means being everywhere, especially at the same time. It is facilitated by wireless computing. Given that Wi-Fi access is available in more and more places, and that about half of all mobile phones are smartphones, we have easier ubiquity.
- **Convenience and capabilities.** Having a mobile device increases the convenience of communication. The functionality and usability of mobile devices is increasing while their physical size remains small and the cost is affordable. Unlike traditional computers, mobile devices connect to the Internet almost instantly.
- **Interactivity.** Mobile systems allow for fast and easy interactions (e.g., via Twitter, tablets, or smartphones).

- **Personalization.** Mobile devices are personal devices. While several people may share the same PC, a specific mobile device is usually used by one person.
- **Localization.** Knowing where a user is physically located in real time provides an opportunity to offer him or her relevant mobile advertisements, coupons, or other services. Such services are known as location-based m-commerce.

The Benefits of M-Commerce

Benefits for Organizations:

- Increases sales due to ease of ordering by customers from anywhere, anytime.
- Allows location-based commerce for more sales and revenue
- Provides an additional channel for advertising and distribution of coupons (wider reach).
- Increases customers' loyalty.

- Improves customer satisfaction through real-time apps.
- Increases collaboration, advertisement, customer service, and sales by using IoT
- Enables many enterprise applications
- Facilitates CRM and collaboration.
- Reduces employee training time and help desk resources.
- Improves time utilization and productivity of mobile employees.
- Expedites information flow to and from mobile employees.
- Delivers digitized products and services directly to mobile devices.
- Reduces order lead-time and fulfillment cycle.
- Allows for lower, competitive pricing.

Benefits for Individuals and Customers:

- Allows e-commerce from any place, anytime.
- Assists in shopping by providing real-time information and other shopping aids.
- Helps organization of and communication while travelling.
- Expedites banking and financial services.
- Provides rich media entertainment anytime and anywhere.
- Facilitates the finding of new friends and whereabouts of existing ones.
- Provides a choice of mobile devices for transactions.

- Expedites communication (e.g., locate people; get fast answers to queries; compare prices while in physical stores or via shopping comparison sites/ apps).
- Increases affordability over the cost of using desktop computing in some countries.
- Allows "smart" applications.

Benefits to Society:

Self-driving cars can reduce accidents; smart cities can benefit the dwellers and visitors. Contributions are in almost any field, from medical care and education to law enforcement. Significant reductions in energy expenses are achieved by using smart grids. Traffic jams can be reduced by using wireless sensors and much more.

Mobile Marketing: Shopping and Advertising

Mobile marketing is frequently defined as the use of mobile devices and wireless infrastructure as a means of marketing and advertising. The marketer intends to access potential customers through wireless information channels. The Mobile Marketing Association (**mmaglobal.com**) provides definitions of advertising, apps, messaging, m-commerce, and CRM on all mobile devices, including smartphones and tablets. Mobile marketing includes sales, market research, customer service, and advertising, all supported by mobile computing. Companies can devise contests where customers describe the quality of a new product, and the sellers can post coupons and promotions. You can make ads interactive since mobile computing

Mobile Shopping:

Online shopping can be easier when done from your smartphone or tablet. For shopping, one needs a mobile shopping platform such as the one provided by or by adMobile Corp. (**admobile.com**). Many apps for iPhones facilitate advertising and shopping. For example, you can download the Costco Mobile App for easy coupon redemption (see costco.com/costco-app.html). A popular app in Facebook is its "stores." There are tens of thousands of stores on Facebook.

Example: Delta Airlines

Delta offers in-flight Wi-Fi connection on many of its flights (called *Delta Connect*). With Delta Connect, there is free access to many shopping and entertainment sites, including eBay. For a nominal fee, you can purchase a Wi-Fi Mobile Pass and be able to connect to the Internet via your smartphone, and send and receive mobile messages, check your e-mail, and browse the Web. Consumers use mobile devices to locate stores, compare prices, and place orders.

For **example**, Chinese consumers can make purchases from inside We Chat. China's largest e-tailers, Taobao and T.mall offered special discounts in order to encourage shoppers to buy from their smartphones. To see how mobile shopping is done, visit Amazon. com, JCPenney, Target, REI, and Crate & Barrel to download their shopping apps.

Example: METRO Group (AG)

METRO Group (AG) is offering an application for high capacity mobile phones to use in its Future Store in Rheinberg, Germany. According to their site, the Mobile Shopping Assistant (MSA) "is a software package which allows customers to scan items independently, receive current pricing information and a quick overview of the value of their goods." An MSA provides online access to product descriptions and pictures, pricing information, and store maps. It also enables scanning items before they are placed in the cart, calculating the total

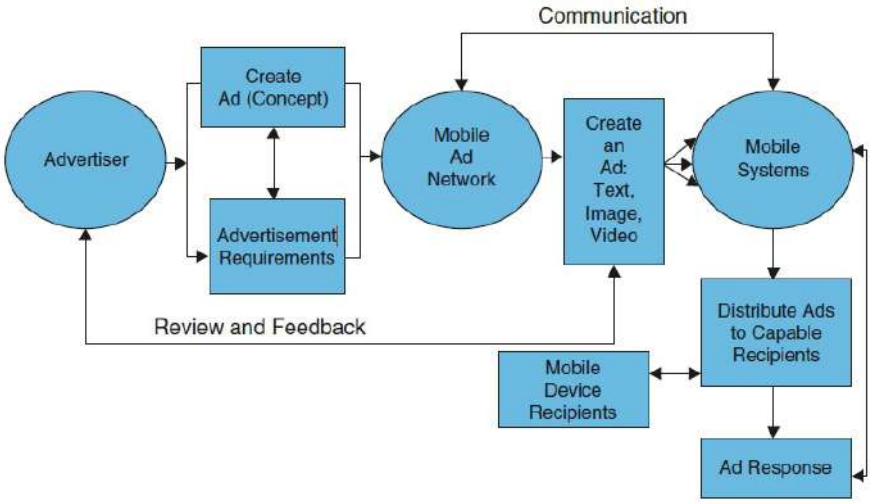
cost of the items. At checkout, the MSA allows a shopper to “pay in passing” by using the MSA to pass scanned data to a payment terminal.

Mobile Advertising

Mobile advertising (m-advertising) is defined by the IAB as “Advertising tailored to and delivered through wireless mobile devices such as smartphones (e.g. Blackberry, iPhone, Android, etc.), feature phones (e.g. lower-end mobile phones capable of accessing mobile content), and media tablets (e.g. iPad, Samsung Galaxy Tablet, etc.).” Mobile advertising ranges from simple text messaging to intelligent interactive messaging on mobile devices. It involves several key players, such as the advertisers, mobile ad networks,

mobile apps, and mobile devices.

Figure shows how mobile ads work. A company hires a mobile advertiser to create a mobile ad and specifies the promotional criteria. The mobile ad is then sent to a mobile advertising network. The original network forwards these ads to multiple mobile networks and keeps track of the distribution and responses to these ads. The ad will reach the mobile user through proper mobile devices and apps. The user’s response is then transmitted to the advertiser and the company through mobile networks.



Interactive Mobile Advertising

Interactive mobile advertising refers to the delivery of interactive marketing contents via mobile devices, mostly tablets and smartphones. The inclusion of the word “interactive” points to the fact that this is a two-way communication that may include a customer response.

Types of Mobile Ads

Mobile ads may appear in different forms. The most popular one is short text messages. Other forms include rich media Advertising, averaging, and ads appearing during TV shows and movies on mobile devices.

Short Message Ads

SMS ads are commercial messages sent in the form of short text messages. They are quite popular and SMS mobile banner ads are growing rapidly due to the increased popularity of smartphones and 4G networks. Several major advertising portals have been launched by both private mobile advertisers and portals One advantage of SMS is that users can send them quickly and privately from any place and almost any time. A major drawback, however, is that short messages may interrupt and annoy the recipients.

Location-Based Ads

Location-sensitive businesses can take advantage of this feature to deliver location-based ads. A good example is a Google Map that can show nearby convenience stores, gas stations, hotels, and restaurants when a location is searched. Some of these are paid ads.

Viral Mobile Marketing

Viral marketing can also be deployed to the mobile platforms. This is called viral mobile marketing. A typical approach is to develop and distribute apps for mobile devices.

Mobile Marketing and Advertising Campaigns

There are basically **four classes** of online campaigns:

Information, Entertainment, raffles, and coupons.

These classes focus on one or more of the following **six objectives**

1. **Building brand awareness**. Increase customers' ability to recognize and recall a brand.
2. **Changing brand image**. Change the customers' perception of the brand.
3. **Promoting sales**. Stimulate quicker or greater purchase of products or services.
4. **Enhancing brand loyalty**. Increase consumers' commitment to repurchase the brand.
5. **Building customer databases**. Collect data about the mobile device, data network, or profiles of customers.
6. **Stimulating mobile word of mouth**. Encourage customers to share ads with other customers via their mobile devices.

Currently, SMS and e-mails are the principal technologies used to deliver advertisements to mobile devices.

Tools to Support Mobile Advertisement

A large number of applications, tools, and methods are available to support advertising in m-commerce. There are millions of applications (apps) that have been developed for iPhone and Android-based mobile devices that can be downloaded from app stores (e.g., Google Play and Apple store).

Mobile Ad Trends

1. Content marketing will improve the mobile marketing experience

2. Instead of BIG data, it's about accurate data on mobile and this data will be coveted

3. Video on mobile is growing, and targeting by location is key

4. Virtual reality will create new ad formats

5. Beyond cross-screen, mobile marketers will align unified screens with in-store touch points

Example: Innovative Sticker Advertising

In addition to these five trends, we also see the increasing importance of mobile social media, such as **whatsapp.com**, **wechat.com, line.me/en/** Creative advertising methods such as stickers offer new ways of advertising. A funny sticker is a small image (like an "emoticon") that can be used to show certain emotions such as great, love, hate, and so forth. It is very popular for Line users. Line allows a business to develop a set of eight sponsored fun stickers (with company logo or advertising messages) at a fixed cost. Line users can download free chat stickers from Google Play and iTunes.

For example

In the case of Tatung Electronics (of Taiwan), its *Boy character stickers and emoticons* generated more than one million active users within 24 h of being introduced online.

Social Commerce:

Social Commerce: Social commerce (SC), also known as ***social business***, refers to e-commerce transactions delivered via social media. Social commerce is considered a subset of e-commerce by some. More specifically, it is a combination of e-commerce, e-marketing, the supporting technologies, and social media content.

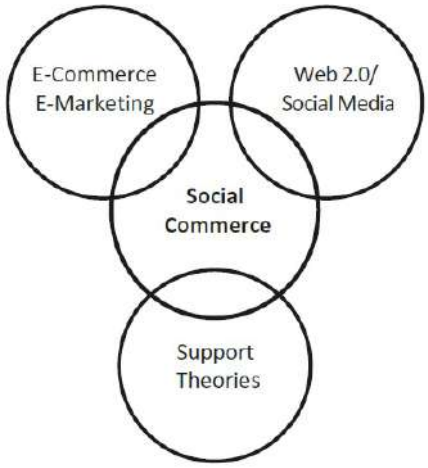


Fig. shows that social commerce is created from the integration of e-commerce and e-marketing using Web 2.0/social media applications. The integration is supported by theories such as social capital, social psychology, consumer behavior, and online collaboration, resulting in a set of useful applications that drive social commerce. Overall, the vast majority of U.S. companies have a presence on Facebook.

The Major Tools of Web 2.0

Web 2.0 uses dozens of tools such as wikis, RSS feeds, blogs, and microblogs (e.g., Twitter). With microblogging, you can transmit short messages (up to 140 characters) to a list of recipients via the Internet and wireless or wireline devices. Twitter became a major Web 2.0 tool with diversified business applications.

Social Business Networks and Social Enterprise:

A **social business** is a name for a commercial for-profit or nonprofit organization that is designed to achieve some social goal(s), such as improving human well-being, rather than just make a profit.

The Social Enterprise (Enterprise 2.0)

Social enterprise refers to the use of social media tools and platforms and conducting social networking activities in organizations, while its major objectives are either commercial

or nonprofit activities **(socialenterprise.us/about/social-enterprise.)** Social enterprise applications are growing rapidly. They appear under different names, mostly as social enterprises and Enterprise 2.0. Enterprise applications are conducted inside enterprises, on companies' private social networks or portals. They also are conducted on public social networks, both pure business-oriented (e.g., LinkedIn), and other networks, mostly **Facebook** and **Twitter**. Major applications are recruitment, collaboration, and problem-solving. Enterprise social capabilities facilitate a new type of collaboration, encourage business upgrades, and enable more vendor applications. Most workers used social media for business purposes at least once a week

Business Networks

Business networks are a core component in the social enterprise. A *business network* refers to a group of people with a professional business relationship; for example, the relationships

between sellers and buyers, buyers and suppliers, and professionals and their colleagues, such as the twenty-first Century Community at CEMEX. *Buyers* to refer to agents buying something for a business (e.g., a purchasing agent). Such a network of people can form

business social networks, which are business-oriented networks that are built on social relationships and can exist off-line or online.

For example, public places, such as airports or golf courses, provide opportunities to make new face-to face business contacts if an individual has good social skills. Similarly, the Internet is proving to be a good place to network and connect. The most well known network is LinkedIn (**linkedin.com**).

Types of Business Social Networks

There are **three** major types of business social networks: (a) ***public networks***, such as **LinkedIn**, which are owned and operated by independent companies, and are open to anyone for business networking. The networks connect, for example, sellers and buyers or employers and potential employees; (b) ***enterprise private networks***, which operate inside companies, like in **CEMEX** in the opening case. These usually restrict membership to employees and sometimes to business partners. An example is USAA that has an internal social network for employees who can ask for help from their peers; and (c) ***company-owned*** *and hosted networks* that are controlled by a company but open to the public, usually for brand-related networking (e.g., Starbucks, Dell Computer).

Benefits of Enterprise Social Networking

- Improve collaboration inside the enterprise and with business partners
- Facilitate knowledge distribution (increase access to specialized knowledge)
- Build better customer and employee relationships
- Facilitate recruiting and employee retention
- Increase business and marketing opportunities (e.g., meet new potential business partners and/or customers)
- Reduce operation, communication, and travel costs
- Increase sales and revenue (e.g., more sales leads)
- Improve customer satisfaction
- Reduce marketing and advertising costs
- Improve employee and organizational performance
- Foster internal and external relationships
- Collect feedback from employees
- Build an effective workforce
- Improve decision-making capabilities including fore-casting
- "Spy" on competitors (intelligence gathering)
- Find experts and advice (internally and externally)
- Improve customer service and CRM

Social Media

Social media involves user-generated online text, image, audio, and video content that are delivered via Web 2.0 platforms and tools. This media is used primarily for social interactions and conversations such as sharing opinions, experiences, insights, and perceptions, and for

online collaboration. Therefore, it is a powerful force for socialization. A key element is that users produce, control, and manage content.

The Difference Between social media and Web 2.0

Social media uses Web 2.0 and its tools and technologies, the social media concept includes the philosophy of connected people, the interactions among them, the social support provided, the digital content that is created by users.

Platforms for Social Networking

- **Snapchat.com**—A mobile photo messaging service for "chatting" with friends through photos, videos, and captions "like 'texting' with pictures or videos"
- **WhatsApp.com**—According to its website, WhatsApp is a cross-platform free mobile messaging app for smartphones. Users can form groups, send each other unlimited images, video and audio media messages. The company was acquired by Facebook in 2014 for around $19 billion. WhatsApp was used by over one billion people each month in January 2016

- **Tranzactive.com**—Enabler of real-time conversational translation mainly in social media.
- **Droid Translator (tiwinnovations.com)**—Translates phone calls, video chats (e.g., Skype), and text conversations into 29 different languages.

- **Viber.com, line.me/en**, etc.—Companies that provide free voice and video calling, etc. for mobile devices and desktops (e.g., Viber for Desktop).
- **Instagram.com**—A free platform for sharing photos and videos. As a social network, it allows for creation of reviews, etc.

- **Hshtags.com**; ("A social media search engine dedicated to hashtags")—Enables users to see in real time, all public content related to any keyword and join any related public conversation in real time

Social Media Marketing: It is the application of marketing communication and other marketing tools using social media. Social media marketing facilitates social commerce,

builds brands, repairs brand reputation damage in social media, and fosters long-term customer relationships, among other things. For a free toolkit, see **act-on.com/resources/**

social-media-marketing-toolkit.

Enterprise 2.0: The second major type of social commerce is *Enterprise 2.0*, also known as *Social Media-based Enterprise*, which is used by an increasing number of companies to conduct several social media and social commerce activities inside the enterprises (e.g., idea generation, problem-solving, joint design, and recruiting). Defined as "the use of social software platforms within companies, or between companies and their partners or customers"

The following are the major characteristics of Enterprise 2.0: ease of information flow, agility, flexibility, user-driven content, bottom-up communication, global teams, fuzzy boundaries, transparency, folksonomies (rather than taxonomies), open standards, and on-demand (rather than scheduled) activities. Also important are flat organizations (rather than hierarchical) and short time-to-market cycles.

Improved Business Models:

- Shopping business models include widgets on social media sites to "buy now."
- Online software agents that put buyers and sellers together, such as when TripAdvisor refers users to online travel sites to purchase hotel rooms.
- Content sponsorship–selling advertising on a site that supports content development (YouTube).
- Crowdsourcing models that allow companies to design their products or logos by involving their customers.
- Sales promotions conducted in social networks that drive traffic to the company's site, such as contests, discounts, and downloading free music and software.
- Recruiting in social networks, as exemplified by LinkedIn.
- Collaboration models that are facilitated by blogs, wikis, and crowdsourcing

Many start-ups have invented these and other business models. For example, Webkinz (**webkinz.com**) created a huge business around virtual pets world for kids, and IZEA Inc. (**izea.com**; a pioneer of social sponsorship) created a marketplace for connecting advertisers with social media creators of content (e.g., bloggers).

Entrepreneur Networks:

- **Startup Nation** (**startupnation.com**). Participants in this community of startup owners and experts are helping people start and operate new businesses. Sharing knowledge and ideas is the main objective.
- **Inspiration Station** (**inspiration.entrepreneur.com**). Inspiration Station is one of the best portals for small businesses and start-ups. It not only has a lot of useful information for business owners, it has a great community for you to take advantage of, and to connect with fellow business owners from around the globe.

Enterprise Social Networks:

An increasing number of companies have created their own in-house, enterprise social networks. Some of these networks can be private, developed for use only by their employees, former employees, and business partners. Others are open to the public, although these are mostly used by their customers. Private networks are considered to be secured ("behind the firewall"), and are often referred to as *corporate social networks*. Such networks come in several formats, depending on their purpose, the industry, the country, and so forth.

Characteristics of Enterprise Social Networks

Enterprise social networks, like any social network, enable employees to create profiles and interact with one another. By encouraging interactions among members, a company can foster collaboration and teamwork, and increase employee satisfaction. For more benefits, see **zdnet.com/blog/hinchcliffe**.

Example: IBM'S Business and Professional Community

The Greater IBM Connection (**ibm.com/IBM/greateribm**) is an internal social networking site that gives IBM employees and former IBMers a rich connection to the people with whom

they work, on both a personal and a professional level. The network helps employees make new connections, track current friends and co-workers, and renew contacts with people they have worked with in the past, including retirees. When employees join the network, they get a profile page. They can use the status message field and the free form "My IBM" section on their profile page to let other people at IBM know where they are, what they are doing, and even what they are thinking. By 2016, about 460,000 IBMers were connected to one another using IBM Connections platform.

The Benefits and Limitations of Social Commerce:

Benefits to Customers:

- It is easy to get recommendations from friends and other customers (e.g., via Twitter, in social networks discussion groups, and on product review sites). Recommendations result in more confidence and trust helping customers decide about purchasing products and services.
- Customers are exposed to special deals (e.g., via Groupon) for large savings.
- Purchases are better matched with specific needs, wants, tastes, and wishes of customers; this increases satisfaction and reduces product choice decision time.
- It is easy for customers to use the SC technology.
- Social commerce fits the mobile device lifestyle well.
- Increased trust in vendors is developed (via closer relationships).
- Social commerce allows customers to help other customers (social support).
- Customers can get better customer service from vendors.
- Customers can meet new friends (e.g., for travel) and socialize online.
- Customers can get rich social context and relevancy during their purchase decisions.
- Customers can connect with individuals and businesses who otherwise are inaccessible to them.

Benefits to Retailers:

Retailers are major benefactors of social commerce. For example, about 50% of businesses globally find new customers via social networks. In addition, about 30% of companies invest in social networking to acquire and retain customers. Retailers may benefit from social commerce in the following ways:

- Consumers can provide feedback on market communication strategy and on product (service) design.
- Vendors get free word-of-mouth marketing
- Increased website traffic (recall the Sony opening case), which increases revenue and sales.
- Increased sales as collaborative filtering and other social influence methods are used

Benefits to Other Types of Enterprises (Employees):

- Conduct faster and less costly recruitment with a larger reach to large number of candidates.
- Reduce costs via innovative methods such as using the collective intelligence of employees and business partners (see Crowdsourcing in Chapter 8).
- Foster better external relationships; for example, with partners and channel distribution members.
- Increase collaboration and improve communication within the enterprise and with business partners (e.g., by using blogs, microblogs, and wikis).

- Foster better internal relationships (e.g., by increasing employee productivity and satisfaction).
- Provide free advice to small enterprises by other enterprises and experts (e.g., via LinkedIn groups).
- Understand that it is usually not expensive to install and operate SC systems.
- Locate experts quickly, both internally and externally, whenever needed (e.g., see guru.com).
- Conduct market research quickly and inexpensively and get feedback from customers, employees, and business partners.
- Increase market share and margins.
- Build brands through conversations and social media promotions.

- Micro segment for reaching very small markets with brand offerings at a low cost.
- Manage company and brand reputations online.
- Build brand communities for positive word of mouth online.
- Enhance customer service and support.
- Increase traffic and sales at the company website and at physical retailers.
- Facilitate market research by monitoring conversations online.
- Increase company and brand rankings on search engine results pages.

Players in the ecosystem:

An organization that has put in place the strategies, technologies and processes to systematically engage all the individuals of its **ecosystem** (employees, customers, partners, suppliers) to maximize the co-created value.

Essentials of Social Collaboration:

Collaboration in business can be defined as *people working with other people toward a common outcome or goal*. For many images of social collaboration, search Google for:

"Images of social collaboration."

Social collaboration refers to people's collaboration within

and between communities enabled by social media tools and platforms. The processes help people interact and share information to achieve a common goal. It is also known as *Collaboration 2.0*. Collaboration 2.0 is recognized as a major element in social enterprise that can provide considerable benefits.

Social Collaboration (Collaboration 2.0)

Collaboration drives business value up by enabling people to work together more efficiently. Wikis and other social software tools can be used effectively by all types and sizes of enterprises for a wide range of tasks and activities. Collaboration helps with solving business problems and uncovering new opportunities, especially with the help of social media tools. Collaboration in social networking is done both internally, among employees from different units working in virtual teams, and externally, when working with suppliers, customers, and other business partners.

Example: Collaboration occurs in forums and other types of groups and by using wikis and blogs.

Social collaboration is supported mainly by:

- Wikis, blogs, and microblogging (e.g., Twitter)
- Collaborative communities (forums and discussion groups)
- Early vintage Web 2.0 technologies
- Crowdsourcing
- Other tools (e.g. Yammer)

Example 1: IBM Connections

IBM Connections provides tools such as forums, wikis, and blogs, and new capabilities like advanced social analytics, which enable users to expand their network of connections and engagement.

Example 2: Cisco WebEx Meeting Centre

Cisco WebEx, according to Cisco's website, is an enterprise collaboration platform, which is designed for today's workforce. It is characterized by social, mobile, visual, and virtual features. WebEx connects people to the information and expertise they need when they need it. Knowledge and ideas are easily shared across the enterprise, and teams collaborate across geographical and organizational boundaries. **WebEx Meetings** is a universal app available for all major smartphones and tablets.

CONSUMER-TO-CONSUMER ELECTRONIC COMMERCE (C2C): (olx.com)

Consumer-to-consumer (C2C) EC, which is sometimes called *person-to-person* (P2P) e-commerce, refers to electronic transactions conducted between and among individuals.

These transactions can also include intermediaries, such as eBay (**ebay.com**) or social network sites that organize, manage, and facilitate the C2C transactions. C2C activities

may include transactions resulting from classified ads, music and file sharing, career and job matching (e.g., at **linkedin. com** and **careerone.com.au**), money lending **lendingclub.**

com, and personal matchmaking services (e.g., **match.com**). People are sharing or selling music, bartering, selling virtual properties, and providing personal services.

E-Commerce: C2C Applications

C2C Auctions

In dozens of countries, selling and buying on auction sites is growing rapidly. Consumers can visit auctions at general sites such as **ebay.com** or **auctionanything.com.** Large numbers of bloggers provide their opinions on legal, medical, political, financial, and other related topics.

Person-to-Person models:

People use the Internet for direct person-to-person money lending. A prime example is the Lending Club Corp.

Classified Ads

Internet-based classified ads have several advantages over newspaper classified ads. They cover a national, rather than a local, audience, and can be updated quickly and easily. Most of them are free or charge very little. This greatly increases the supply of goods and services available and the number of potential buyers. Classified ads also include apartments for rent and corporate housing across the USA (powered by **forrent.com**).

Personal Services

Numerous personal services are available on the Internet (lawyers, handy helpers, tax preparers, investment clubs, dating services). Some are in the classified ad section,

but others are listed on specialized websites (e.g., **hireahelper.com**) and directories. Some are offered free; others charge a fee.

Internet of Things: Concept of IoT:

Definitions

The Internet of Things (IoT) is the network of physical objects-devices, vehicles, buildings and other items embedded with electronics, software, sensors, and network connectivity

that enables these objects to collect and exchange data. The Internet of Things allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy, and economic benefit.

Characteristics of the Internet: IoT is a connected ecosystem in which:

• Large numbers of objects (things) can be connected

• Each thing has a unique definition (IP address)

• Ability to receive, send and store data, automatically

• Delivered over the wireless Internet

• Built upon machine-to-machine (M2M) communication

The Major Benefits of IoT

- Create new revenue stream
- Optimize asset utilization
- Improve sustainability
- Improve workers' productivity
- The Internet of Things is changing and improving everything
- Systems will anticipate our needs
- People will make smarter decisions/purchases
- Greater accuracy
- Identify problems quickly
- Reduce cost by automating processes
- Instant information availability
- Quick and inexpensive tracking
- Expedite problem resolution and recovery
- Support facility integration

The Drivers of IoT

- Connected autonomous “things”/systems (e.g., cars)
- Broadband Internet is more widely available
- Cost of connecting devices is decreasing
- More devices are created (via innovation) and they are connected
- More sensors are built into devices
- Smartphones’ penetration is sky-rocketing
- Wearable devices are all over
- Speed of moving data is increasing; 60 HTz
- Protocols are developing for IoT (e.g., WiGig)
- Customer expectations are on the rise

Existing Application of IoT

- **Hilton Hotel**. Guests can check-in directly to their rooms with their smartphones (no check-in lobby is needed; no keys are needed).
- **Ford**. Users can connect to apps by voice. Coming up: autopay for gas and pre order at Starbucks.
- **Tesla**. Tesla’s software autonomously schedules a valet to pick up a car and drives it to Tesla’s facility when a need for repair arises.

- **Johnnie Walker**. The Whiskey company connected 100,000 whiskey bottles to the Internet for Brazil’s Father’s day. Using smart labeling, buyers can create a personalized video. Fathers can share the videos on social networks. Fathers get promotions to buy the whiskey if they like it.
- **Apple**. Enable users of iPhone, Apple watch, and Homekit with Apple Pay to streamline shopping.
- **Starbucks Clover Net in the Cloud**. This system connects coffee brewers to customers’ preferences. The system also monitors employee’s performance, improves recipes, tracks consumption patterns, and more.

Example: Nest-a Google Company

A leading manufacturer of IoT applications is Google’s Nest. The company is a producer of programmable self-learning, sensor-driven, Wi-Fi-enabled products.

Smart Homes and Appliances:

In a smart home, the home appliances such as computers, refrigerators, washers, dryers, televisions, and security systems are interconnected and can be controlled remotely by smartphone or via the Internet. In the United States, thousands of homes are connected already to such systems and other countries are warming to the idea. Currently, smart home systems support a number of different tasks:

Lighting. Users can manage their home lighting from wherever they are.

Energy management. A remote home heating and cooling system can be controlled via remote to adjust the thermostat in the house (e.g., Nest-a).

Water control. WaterCop is a system that reduces water damage by monitoring leaking water via a sensor, which sends a signal to the valve, causing the valve to close.

Home and senior communities security and safety.

Home security and safety systems can be programmed to alert you to a security-related event on your property. Home security can also be supported by cameras, so you can remotely view your property in real time. Sensors can be used at home to detect intruders, keep an eye on working appliances, and much more.

Home entertainment. Audio and video equipment can be programmed to respond to a remote-control device. For instance, the remote control for a stereo system located in the family room can command the system to play on speakers installed anywhere else in the house. Home automation performs for the user all from one remote and all from one button.

Smart appliances. "An appliance that includes the intelligence and communications to be automatic or remote-controlled based on user preferences or external signals from a utility or third-party energy service provider. A *smart appliance* may utilize a *Home Area Network* to communicate with other devices in the customer's premise, or other channels to communicate with utility systems."

Smart Cities:

The idea of smart cities took off around 2007 when IBM launched their Smart Planet project and Cisco began its Smart Cities and Communities program. The idea is that in smart cities, digital technologies (mostly mobile-based) facilitate better public services for citizens, better utilization of resources, and less negative environmental impact.
Examples: "In Zaragosa, Spain, a 'citizen card' can get you on the free city-wide Wi-Fi network, unlock a bike share, check a book out of the library, and pay for your bus ride home. In New York, a guerrilla group of citizen-scientists installed sensors in local sewers

to alert you when storm water runoff overwhelms the system, dumping waste into local waterways." In many countries, governments, and others (e.g., Google) are developing smart city applications. For example, India is planning to develop 100 smart cities.

Smart Cars:

Smart cars, also known as driverless cars, robot-driven cars, and autonomous cars are already on the roads in several places. The concept was initiated by Google (named Google Chauffeur), and it is becoming a reality, with several states in the USA getting ready to allow it on the road. These cars are electric, and they can create a revolution by their ability to reduce emissions, accidents, and traffic jams. Thus far these cars are being tested in several cities worldwide. The cars possess sensor systems that may prevent collision and they can be completely autonomous. Ready to sell such cars soon (e.g., BMW, Mercedes, GM, Tesla, and of course—Google).

Wearable Computing and Smart Gadgets:

Wearable computing and devices received a major boost in 2015/2016 due to the expansion of the Internet of Things. Wearable computing devices have been used in industry since the mid-1990s. Typical devices were wireless computers tied to people's wrists, digital cameras mounted on the head, mobile devices attached to a belt, and much more. These became popular in the consumer market when Samsung came out with a computer mounted on a watch smartwatch), and Apple released its Apple Watch in April 2015. Google has released a Nexus-like platform for wearables, called Android Wear. Wearables are getting popular
For example, medical tracking of patients with chronic diseases is on the increase, and for $130 you can place a device on your dog's collar to track its movements. "Wearable computers, like fitness bands, digital glasses, medical devices, and smartphones promise to radically transform the manner in which information is collected, delivered, and used by, and about, people. Many of the emerging technologies promise significant, and potentially revolutionary, user benefits. But as with most Internet-connected devices, the growing proliferation of wearables has spawned both privacy and security concerns." Vijayan presents seven devices and their hidden dangers. These devices are: digital glasses (e.g., eyewear like Google Glass), wearable/embedded medical devices, police cameras smartwatches, smart clothing, and fitness bands/activity monitors. A wearable headband that can read the brain's activity. The Canadian company Interaxon developed the device, called Muse. In 2014, Amazon opened a special store for wearable devices.

Enterprise Wearables

The wearables described earlier are mostly used as consumer products. Some companies are using enterprise applications. There are a large number of wearables, which already have been used for a long time in enterprises.

Smartwatches

A **smartwatch** is a computerized wristwatch with functionality that is enhanced beyond timekeeping. Today, smartwatches are wearable computers. Many run mobile apps, using a mobile operating system. They can function as portable media players; others also feature full smartphone capabilities. a smartwatch may collect information from internal or external sensors. It may control or retrieve data from other instrument or computers. It may support wireless technologies like Bluetooth, Wi-Fi, GPS, and communication technologies.

Fitness (Activity) Trackers

An activity tracker is a device or application for monitoring and tracking health and fitness-related metrics such as distance walked or run, calorie consumption, heartbeats, and even the quality of sleep. Today, many of these devices are wearable, which may be connected to a computer. Note that some trackers and regular smartwatches look very fashionable (e.g., Fibit Blaze). These are becoming more stylish with time.

Digital (Smart) Glasses

A digital glasses is an optical, head-mounted device that looks like regular eyeglasses. The device displays Internet information, and it responds to voice commands. Smart glasses are closely related to virtual reality and augmented reality The most well-known glasses are Google glass.

Unit 3

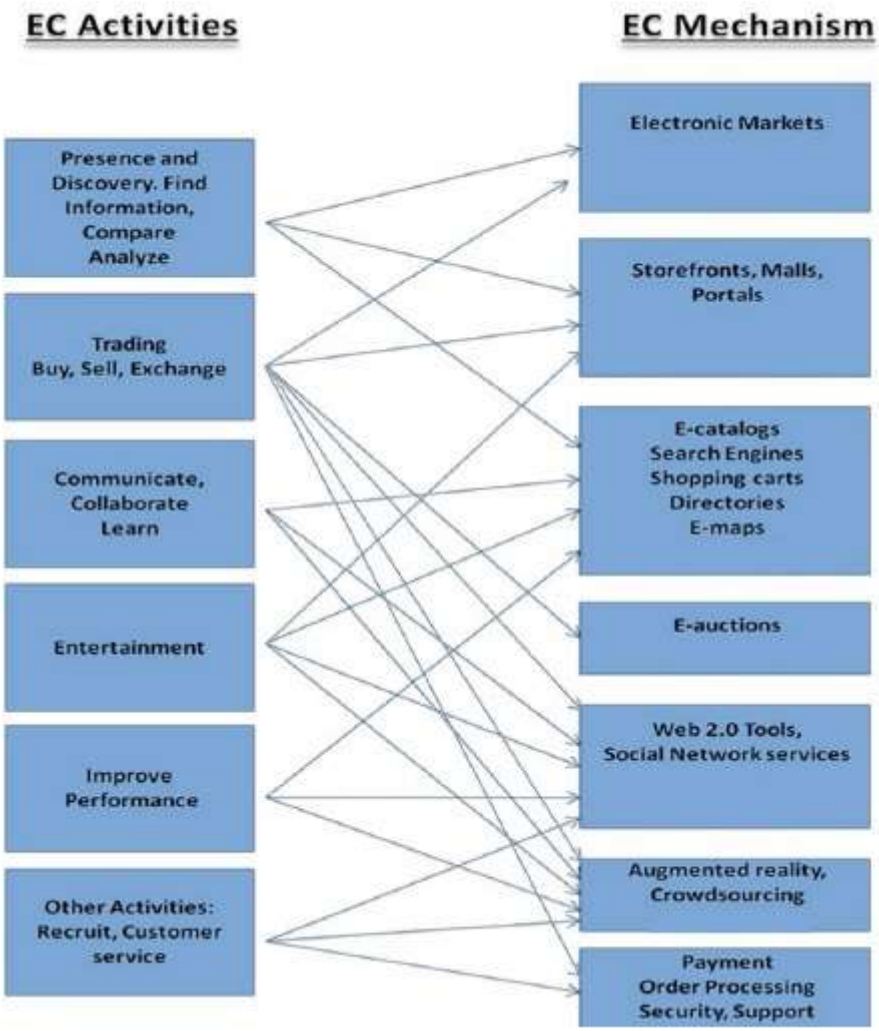
Digital Business Ecosystem

Electronic Commerce Mechanisms:

Most applications are conducted on the Internet with databases, networks, security, software and server software, operating systems, hardware (Web servers), and hosting services need to be established. Added to the above are the specific EC mechanisms presented in this chapter, such as electronic markets, shopping carts, e-catalogs, and support services. In addition to all of the above, there are different methods for executing EC, such as buying at a fixed price or at an auction, and each method has a different support mechanism. Finally, there are the Web 2.0-based collaboration and communication mechanisms (e.g., twitter) and special platforms such as the one used by Pinterest.

EC Activities and Support Mechanisms:

EC activities are divided here into six categories, which are listed on the left side of Fig. Each activity is supported by one or more EC mechanisms, which are shown on the right side of Fig., mechanisms exist for special activities, such as payment and order fulfilment Also, standard IT technologies such as RFID, EDI, and extranets.



Online Purchasing Process:

The process starts with a buyer logging on to a seller's website, registering (if needed), and entering an online catalog or the buyer's "My Account." E-catalogs can be very large, so using a search engine may be useful. Buyers usually like to compare prices; therefore, an online price comparison service can be useful (now available on smartphones). Some sellers (e.g., American Airlines, Amazon.com) provide price comparisons showing competitors. If not satisfied, the buyer may abandon the seller's site. If satisfied, the buyer will place the chosen item in a virtual *shopping cart* (or bag). The buyer may return to the seller's catalog to choose more items. Each selected item is placed in the shopping cart. When the item selection is completed, the buyer goes to a checkout page, where a shipment option is selected from a menu (e.g., standard, next day). Finally, a payment option is selected. For example, **newegg.com** allows you to pay by credit card, PayPal, check after billing, in installments, and so on. After checking all the details for accuracy, the buyer *submits* the order.

E-Marketplaces:

E-marketplace (also called *e-market, virtual market,* or *marketspace*) is an electronic space where sellers and buyers meet and conduct different types of transactions. Customers receive goods and services for money. The functions of an e-market are the same as those of a physical marketplace; however, computerized systems tend to make electronic markets much more efficient by providing more updated information and various support services, such as rapid and smooth executions of transactions. The emergence of *electronic marketplaces*, especially Web-based ones, has changed several of the processes used in trading and supply chains. In many cases, these changes, driven by technology, have frequently resulted in:

- Lowering the search time for information and cost to buyers
- Reduced information misunderstanding between sellers and buyers
- Possible reduction in the time gap between purchase and possession of physical products purchased online
- The ability of market participants to be in different locations while trading online
- The ability to conduct transactions at any time (24/7) from any place

The Components and Participants in E-Marketplaces:

Customers. Several billions of Internet users worldwide are potential buyers of goods and services offered on the Internet. These consumers are looking for bargains, customized items, collectors' items, entertainment, socialization, and more. The social customers have more power than regular customers. They can search for detailed information, compare prices, bid, and sometimes negotiate. Buying organizations are also customers, accounting for more than 85% of EC volume and value activities.

Sellers. Millions of web stores are advertising and offering a huge variety of items. These stores are owned by companies, government agencies, or individuals. Every day it is possible to find new offerings of products and services. Sellers can sell directly from their websites or from public e-marketplaces.

Products and services. One of the major differences between the *marketplace* and the *marketspace* is the possible digitization of products and services in a marketspace. Although both types of markets can sell physical products, they can also sell **digital products**, which are goods that can be transformed into a digital format. However, in marketspaces, buyers can buy digitized products online, anytime and from any place in seconds, and receive the purchased goods instantly. In addition to the digitization of software, music, and airline tickets, it is possible to digitize dozens of other products and services

Infrastructure. The marketspace infrastructure includes electronic networks, databases, hardware, software, and more.

Front end. Customers interact with a marketspace via a **front end**. The major components of the front end can include the seller's portal, electronic catalogs, a shopping cart, a search engine, an auction engine, a payment gateway, and all other activities related to placing orders.

Back end. All the activities that are related to order aggregation and fulfilment, inventory management, purchasing from suppliers, accounting and finance, insurance, payment processing, packaging, and delivery are done in what is termed the **back end** of the business.

Intermediaries. In marketing, an **intermediary** is typically a third party that operates between sellers and buyers. The role of electronic intermediaries is frequently different from that of regular intermediaries (such as wholesalers or retailers), as will be seen throughout the text. For example, online intermediaries create and manage the online markets. They help match buyers and sellers, provide escrow services, and help customers and/or sellers complete transactions. Physical intermediaries may be eliminated and their jobs be computerized (fully or partially)

Disintermediation and Reintermediation:

Intermediaries usually provide three types of services: (1) they provide relevant information about demand: supply, prices, and trading requirements, (2) they help match sellers and buyers, and/or (3) they offer value-added services such as transfer of products, escrow, payment arrangements, consulting, or assistance in finding a business partner. In general,

the first and second types of service s can be fully automated, and thus it is likely to be assumed by e-marketplaces, infomediaries, and portals that provide free or low fee services. The third type requires expertise, such as knowledge of the industry, the market, the products, and the technological trends, and therefore can only be partially automated.

Intermediaries that provide only (or mainly) the first two types of services may be eliminated; this phenomenon is called **disintermediation**. An Intermediaries usually provide three types of services: (1) they provide relevant information about demand: supply, prices, and trading requirements, (2) they help match sellers and buyers, and/or (3) they offer value-added services such as transfer of products, escrow, payment arrangements, consulting, or assistance in finding a business partner. In general, the first and second types of services can be fully automated, and thus it is likely to be assumed by e-marketplaces, infomediaries, and portals that provide free or low fee services. The third type requires expertise, such as

Knowledge of the industry, the market, the products, and the technological trends, and therefore can only be partially automated. Intermediaries that provide only (or mainly) the first two types of services may be eliminated; this phenomenon is called **disintermediation**. An **example** is the airline industry and its push for selling electronic tickets directly by the airlines. Most airlines require customers to pay $25 or more per ticket processed by an employee via telephone. This results in the *disintermediation* of many travel agents from the purchasing process. In another example, discount stockbrokers that only execute trades manually are disappearing. However, brokers who manage electronic intermediation are not only surviving but may also be prospering (e.g., **priceline.com** and **expedia.com** in the travel industry and **tdameritrade. com** in stock trading). This phenomenon, in which disintermediated entities or newcomers take on new intermediary roles, is called *reintermediation.*

Customer Shopping Mechanisms: Web stores, Malls and Portals:

Web stores:

A **webstore** (or **storefront**) refers to a single company's (or individual seller's) website where products and services are sold. Webstores may target an industry, a location, or a niche market. The webstore may belong to a manufacturer (e.g.,**geappliances.com** and **dell.com**), to a retailer (e.g.,**amazon.com**), to individuals selling from home, or to other types of business. Note that some companies refer to their webstores as *portals*.

A webstore includes tools known as *merchant software* that are necessary for conducting online sales. The most common tools are an *electronic catalog*; a *search engine* that helps the consumer find products in the catalog; an *electronic shopping cart* for holding items until checkout; *e-auction facilities* where auctions take place; a *payment gateway* where payment arrangements can be made; a *shipment center* where shipping arrangements are made; and *customer services*, which include product and warranty information and CRM.

Electronic Malls

Similar to malls in the physical world, an **e-mall** (**online mall**) is an online shopping location where many stores present their catalogs. volume. For **example**, the E-mall of Maine (**emallsofamerica.com/emallofmaine.htm**) is an e-mall that aggregates products, services, and providers in the state of Maine. It contains a directory of vacation services and product categories and the vendors in each category. When a consumer indicates the category he or she is interested in, the consumer is transferred to the appropriate independent *webstore*. This kind of mall does not provide any shared services; it is merely a directory. Other malls, such as **choicemall.com** or **etsy.com** (see Chapter 4), do provide some shared services.

Both **yahoo.com** and **ebay.com** operate electronic malls. The mall charges commission from the sellers based on their sale

Web (information) Portals

A *portal* is an information gateway that is used in e-marketplaces, webstores, and other types of EC (e.g., in e-collaboration, intrabusiness, and e-learning). A **Web portal** is a single point of access, through a Web browser, to critical business information located inside and outside of organizations. This information is aggregated and is accessed and presented in a consistent way. Many Web portals personalize for users. Note that wireless devices are becoming portals for both enterprise and Internet access. Web portals offer some useful services such as e-mail, news, stock prices, entertainment, shopping capabilities, and so forth.

Intermediaries: Roles of Intermediaries in E-Marketplaces:

Brokers

A *broker* in EC is a person or a company that facilitates transactions between buyers and sellers. The following are different types of brokers:

Trading. A company that aids online trading (e.g., E*TRADE or eBay).

Organization of online malls. A company that organizes many online stores in one place (e.g., Yahoo! Shopping and Alibaba.com).

Comparison agent. A company that helps consumers compare prices, encourages user comments, and provides customer service at different stores (e.g., Bizrate for a great diversity of products and Hotwire, Inc. for travel-related products and services).

Shopping aids provider. A company that helps online shopping by providing escrow, payments, shipping, and security (e.g., PuntoMio, Inc.) for global shoppers.

Matching services. These services match entities such as jobs to applicants, and buyers to sellers.

Distributors in B2B

A special type of intermediary in e-commerce is the B2B *e-distributor*. These intermediaries connect manufacturers with business buyers (customers), such as retailers (or resellers in the computer industry). **E-distributors** aggregate product information from many manufacturers, sometimes thousands of them, in the e-distributor's catalog. An example is W.W. Grainger (**grainger.com**). The distributor buys the products and then sells them, as supermarkets do.

Merchant Solutions: Electronic Catalogs, Search Engines and Shopping Carts:

Electronic Catalogs:

Catalogs have been printed on paper for generations. Recently, electronic catalogs on a DVD (or CD-ROM) and on the Internet have gained popularity. **Electronic catalogs** (**e-catalogs**) consist of a product database, directory, and a presentation function. They are the backbone of most e-commerce sales sites. For merchants, the objective of e-catalogs is to advertise and promote products and services. For the customer, the purpose of such catalogs is to locate information on products and services. E-catalogs can be searched quickly with the help of search engines. Some offer tools for interactions. Most early online catalogs were static presentations of text and messages from paper catalogs. However, online catalogs have evolved to become more dynamic, customizable,

Search Engines

Customers look for information (e.g., requests for product information or pricing) in similar ways. This type of request is repetitive, and answering such requests manually is costly. *Search engines* deliver answers economically and efficiently by matching questions with frequently asked question (FAQ) templates, which respond with "canned" answers. In general, a **search engine** is a computer program that can access databases of Internet or intranet resources, search for specific information or keywords, and report the results. Google's Internet Explorer and Chrome, and Bing are the most popular search engines in the USA. Baidu is the primary search engine in China. Portals such as Yahoo! and MSN have their own search engines. Special search engines organized to answer certain questions or search in specified areas include **ask.com**, **mamma.com**, and **looksmart.com**. In addition, many companies have their own enterprise search engines.

Voice-Powered Search

To ease searching, especially when using a smartphone, Google introduced a voice-powered tool (Google Voice Search) ; allows you to skip the keyboard altogether. The first product was included as part of iPhone's mobile search application. It allows you to talk into your phone, ask any question, and the results of your query re provided on your iPhone. In addition to asking questions by talking into your iPhone, you can also listen to search engine results. For an **example** of Apple's intelligent personal assistant, "Siri," see **apple.com/ios/siri**

Video and Mobile Search

There are dozens of dedicated search tools and sites that will search for videos and other images. Some of them, such as **bing.com/videos**, will search across multiple sites; others,

such as YouTube, will search only for their own content. The search engine Bing has a search feature that allows you to listen to more than 5 million full length songs.

Shopping Carts

An **electronic shopping cart** (also known as *shopping bag* or *shopping basket*) is software that allows customers to accumulate items they wish to buy before they arrange payment and check out, much like a shopping cart in a supermarket. The electronic shopping cart software program automatically calculates the total cost and adds tax and shipping charges when applicable. Customers can review and revise their shopping list before finalizing their purchase by clicking on the "submit" button. Shopping carts for B2C are simple (visit **amazon.com** to see an example), but for B2B, a shopping cart may be more complex. Shopping cart software is sold or provided free to store builders as an independent component outside a merchant suite.

Auctions:

An *online auction* is an electronic space where sellers and buyers meet and conduct different types of transactions. This market mechanism uses a competitive process where a seller solicits consecutive bids from buyers (forward e-auctions) or a buyer solicits bids from sellers (reverse e-auctions).

For example

e-auctions can expedite the clearance of items that need to be liquidated or sold quickly. Rare coins, stamps, and other collectibles are frequently sold at e-auctions.

Traditional Auctions Versus E-Auctions

Traditional, physical auctions are still very popular. However, the volume traded on e-auctions is significantly larger and continues to increase. In addition, person-to-person auctions are done mostly online.

Limitations of Traditional Off-Line Auctions

Traditional off-line auctions, regardless of their type, have several limitations. They usually last only a few minutes, or even seconds, for each item sold. This rapid process may give potential buyers little time to decide, so they may decide not to bid. Therefore, sellers may not get the highest possible price; bidders may not get what they really want, or they may pay too much for the items. Additionally, in many cases, the bidders do not have much time to examine the goods before placing a bid. Bidders have difficulty learning about specific auctions and cannot compare what is being offered at each location. Bidders must usually be physically present at auctions; thus, many potential bidders are excluded. Similarly, it may be difficult for sellers to move goods to an auction site. Commissions are high because a physical location must be rented, the auction needs to be advertised, and an auctioneer and other employees need to be paid. Electronic auctioning removes or lessens these drawbacks.

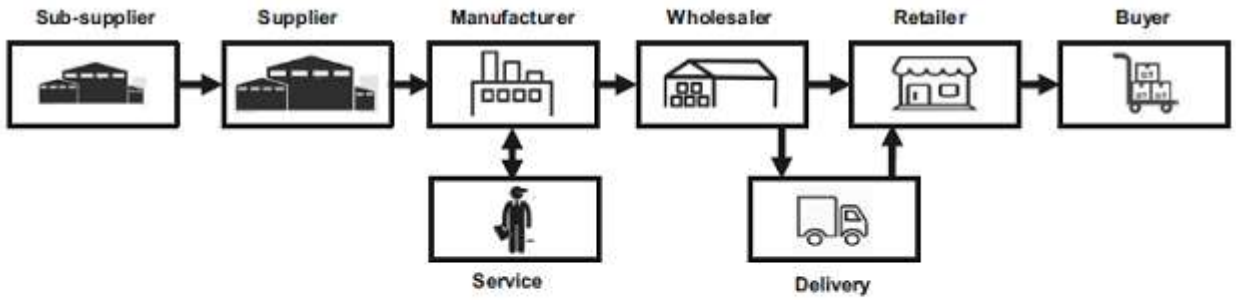
Dynamic Pricing:

One major characteristic of auctions is that they are based on dynamic pricing. **Dynamic pricing** refers to prices that are not fixed, but are allowed to fluctuate, and are determined by supply and demand. In contrast, catalog prices are fixed, as are prices in department stores, supermarkets, and most webstores. Dynamic pricing appears in several forms. Perhaps the oldest forms are negotiation and bargaining, which have been practiced for many generations in open-air markets. The most popular today are the online auctions.

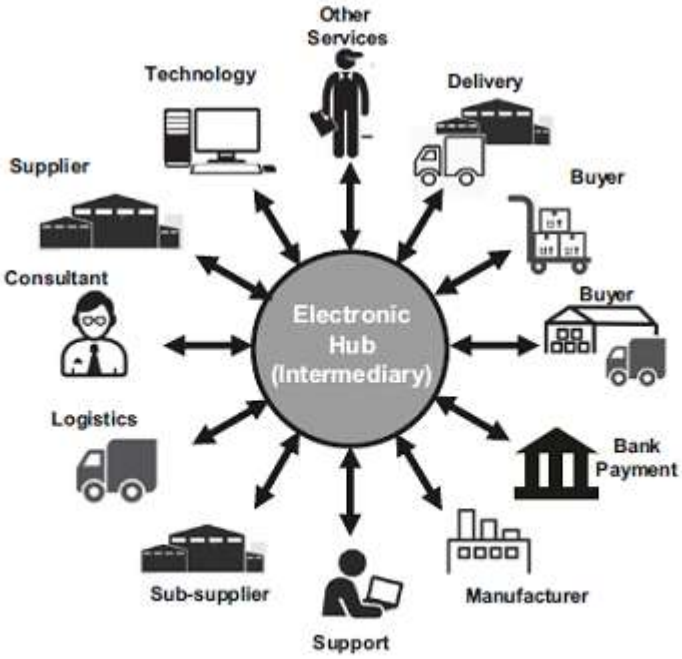
Changing the Structure and Process of the Supply Chain:

An efficient solution to many supply chain problems is to change the supply chain structure from a linear to a hub structure as illustrated in **Fig.** Notice that in a hub structure connection between supply chain partners and elements is much shorter. Also, coordination and control is done at the center of the hub, making the management more efficient, and the structure increases visibility. Long supply chains are usually more susceptible to problems. Also, the

hub structure management is usually fully digital, making order fulfilment faster, less expensive, and less problematic.



Traditional Linear Supply Chain



EC Order Fulfillment Process:

In order to understand why there are problems in order fulfillment, it is beneficial to look at a typical EC fulfillment process, as shown in **Fig.** The process starts on the left, when an order is received, and after verification that it is a real order, several activities take place, some of which can be done simultaneously; others must be done in sequence. These activities include the following steps:

1. Order and pay

2. Payment authorization

3. Check for in-stock availability. Notify if and when available

4. Determine whether inventory should be replenished (and whether additional production is required)

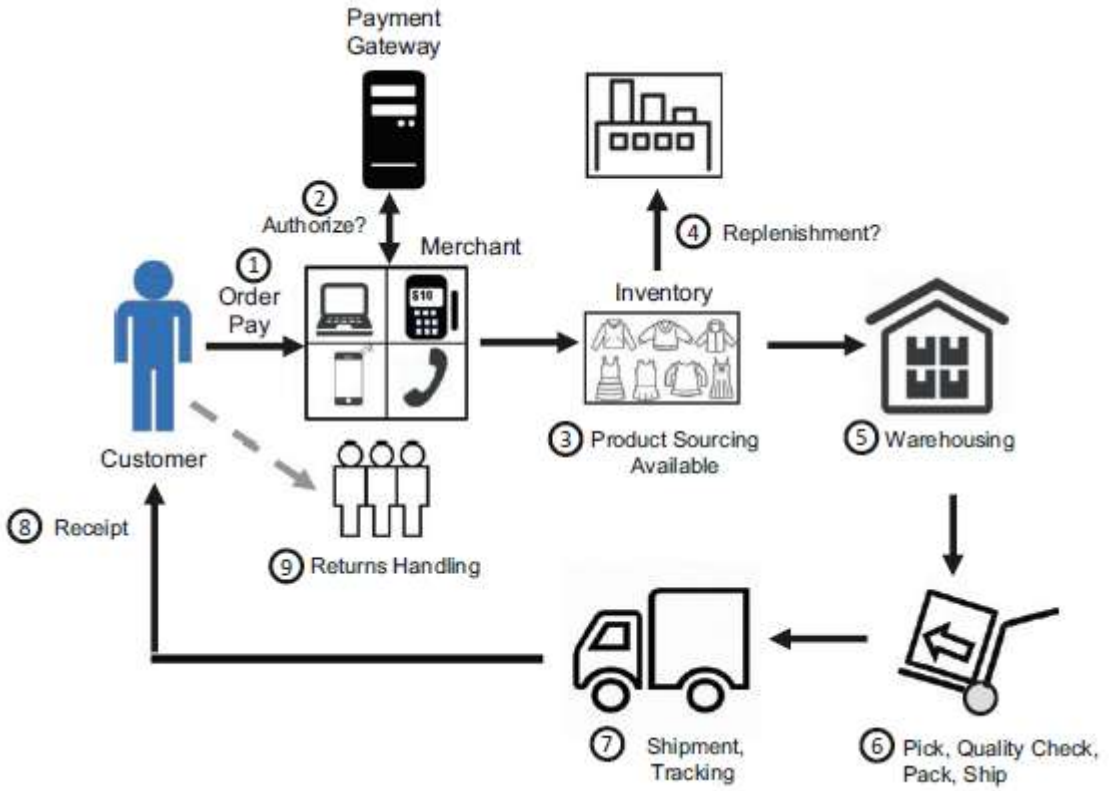
5. Locate warehouse where order can be handled. Transmit order to warehouse

6. Pick and pack order for shipment

7. Dispatch order

8. Receipt of goods

9. Manage returns



Order fulfilment processes may vary, depending on the type's product (e.g., by size, perishability), whether third parties are involved in warehousing and shipping, whether the

business is primarily B2C or B2B, and on the company's strategies and operations models. Often retailers and the manufacturing partners are differentiated by these strategies and models. The basic operations models, which predate EC by 20 years, are well known to supply chain experts and practitioners and include:

Engineer-to-Order (ETO). Here, the product is designed and built to customer specifications; this approach is most common with one-off products (e.g., customized jewelry).

• **Make-to-Order (MTO)**. Aka *Build-to-Order* (BTO) is used with low demand products that are manufactured to customer specifications. They are only built after the order is actually in hand.

• **Assemble-to-Order (ATO).** Aka *Assemble-to-request*, these are products built to customer specifications from a stock of existing components. This requires a modular product architecture for the finished products. The best-known example of this approach is the way in which Dell manufactures their computers.

• **Make-to-Stock (MTS).** For standardized products that sell in high volumes. The product is built against a sales forecast and sold to the customer from finished goods. This means that demand can be quickly met. For example, many of the CPG in the goods in grocery stores are of this sort.

• **Digital Copy (DC)**. Where products are digital assets and inventory is created from a digital master. Copies are created on-demand, downloaded to a customer's storage device.

Because clothing and apparel, (packaged) food, and electronics equipment are the largest selling B2C categories, the most frequently used models are MTS and ATO. While managing and fulfilling orders for these types of products would seem straightforward, they too can suffer from the vagaries of the supply chain because of spikes in demand (e.g., Black Friday), or disruptions caused by a shortage of source component parts or materials, or the sudden comings and goings of popular styles.

Speeding Up Deliveries: From Same Day to a Few Minutes

FedEx initiated the concept of "next day" delivery in 1973. It was a revolution in door-to-door logistics. A few years later, FedEx, introduced its "next-morning delivery" service. In the digital age, however, even the next morning may not be fast enough. Today, we talk about same-day delivery and even delivery within an hour. Deliveries of urgent materials to and from hospitals, shipping auto parts to car service shops, and delivering medicine to patients are additional examples of such a service.

eFulfillment Service (**efulfillmentservice.com**) and OneWorld Direct (**owd.com** have created networks for the rapid distribution of products, in collaboration with shipping companies, such as FedEx and UPS.

Delivering groceries is another area where speed is important. Quick pizza deliveries have been available for a long time (e.g., Domino's Pizza). Today, many pizza orders can be

placed online. Also, many restaurants deliver food to customers who order online. Example : **grubhub.com** company.

Supermarket deliveries are often done same day. Arranging and coordinating such deliveries may be difficult, especially when fresh or perishable food is to be transported. Buyers may need to be home at certain times to accept the deliveries.

Partnering Efforts and Outsourcing Logistics:

An effective way to solve order fulfillment problems is for an organization to partner with other companies. For **example**, several EC companies have partnered with UPS or FedEx;

others with Fulfillment by Amazon and Alibaba's Tmall Logistics-related partnerships can take many forms. For example, marketplaces may be managed by one of many freight forwarders such as A & A Contract Customs Brokers, a company that helps other companies find "forwarders." Forwarders help prepare goods for shipping and work with carriers to determine the optimal way to ship. Forwarders can also find the least expensive prices on air carriers, and the carriers bid to fill the space with forwarders' goods that need to be shipped.

Using Robots for Order Fulfillment

In 2012, Amazon bought a robot company called Kiva Systems for $775 million. Today, 30,000 Kiva robots have been deployed to about 15 of Amazon's larger fulfillment centers. The robots are used to assist workers with picking and packing activities.

Order Fulfillment in Make-to- Order (MTO) and Mass Customization:

Although taking customized orders is easily done online, the fulfillment of such orders may not be simple. Mass production enabled companies to reduce the price per unit. Customization is usually expensive, since each item must be handled separately. Customization also requires time, especially for large products like cars. However, consumers usually want customized products to be delivered in a timely fashion at price points that are not much higher than those of a similar product that is mass produced. So, the question is: how does a supplier, manufacturer or retailer do this at a reasonable cost to themselves and in a reasonable time for their customers?

Dell was a pioneer in providing customized products to end consumers in a timely and cost-effective fashion. They were able to do this using mass produced components that were

assembled to meet the customized orders of their customers. This approach has been adopted by many other manufacturers. Most customized cars, shoes, toys, textbooks, and wedding rings are made this way. Of course, when you talk about millions of computers at Dell, the supply chain, the logistics, and the delivery of components were critical to its success and survival. You need to have flexible production lines where changes are made quickly and inexpensively (e.g., painting cars at Toyota), and you need tools that enable quick and not-so-expensive changes (usually driven by computerized systems). This is usually a part of an *intelligent factory* or production line like those at Siemans AG, IBM, and General Electric. It's also like the distributed mass customization approach used at Etsy (**etsy.com**). Etsy is an online market for goods that are custom made by small producers

Digital Payments:

Smart Cards: A **smart card** is a plastic payment card that contains data in an embedded microchip. The embedded chip can be a microprocessor combined with a memory chip or just a memory chip with nonprogrammable logic. Information on a microprocessor card can be added, deleted, or otherwise manipulated; a memory-chip card is usually a "read-only"

card, similar to a magnetic stripe card. The card's programs and data must be downloaded from, and activated by, some other device (such as an ATM). Smart cards are used for a

wide variety of purposes including:

- Telecom—SIM cards
- Financial—cards issued by banks, retailers, and service providers for payment services (debit, credit, prepaid), loyalty, and social cards with payment apps
- Government and healthcare—cards issued by governments for citizen identification and online services and cards issued by private health insurance companies
- Device manufactures—mobile phones, tablets, navigation devices, and other connected devices including secure element without SIM application
- Other—cards issued by operators of transport, toll, car park, pay TV, and other services, as well as cards providing physical and logical access.

A little over 9.2 billion smart cards were shipped in 2015, a 12% increase over the previous year. In 2016, the number is expected to only grow about 6% to 9.8 billion units. The majority of smart cards are currently found in telephones (5.4 billion out of the 9.2 billion) cards used for payments (which is 2.6 billion). The growth that has been experienced is being driven primarily by the migration of payment cards from swipe to (EVM) chips, the rise in mobile devices (excluding SIM cards), and increasing e-government services.

Types of Smart Cards

There are two distinct types of smart cards. The first type is a **contact card**, which is activated when it is inserted into a smart card reader. The second type of card is a **contactless (proximity) card**, meaning that the card only has to be within a certain proximity of a smart card reader to process a transaction. On the front or back of the contact smart cards there is a small gold (or silver) plate about one-half inch in diameter that contains a chip. When the card is inserted into the card reader, the plate makes electronic contact and data are transferred to and from the chip. A contactless card has an embedded antenna that facilitates data transfer to another antenna (e.g., attached to another device). Contactless cards are especially useful where data must be processed (e.g., paying toll road fees, bus or train fares) or when contact may be difficult. Most proximity cards work at short range (just a few inches). For some applications, such as payments at highway tollbooths, longer range proximity cards are available.

In 2015, over 50% of the smart cards shipped to the USA. and Europe were contactless. For Asia Pacific, the figure was close to 75%.

With both types of cards, *smart card readers* are crucial to the operation of the system. Technically speaking, a smart card reader is actually a read/write device. The primary purpose of the **smart card reader** is to act as a mediator between the card and the host system that stores application data and processes transactions. Just as there are two basic types of cards, there are two types of smart card readers—*contact* and *proximity*—that match the particular type of card. Smart card readers can be transparent, requiring a host device to operate, or stand alone, functioning independently. Smart card readers are a key element in determining the overall cost of a smart card application. Although the cost of a single reader is usually low, the cost can be quite high when they are used with a large population of users (e.g., passengers traveling on a metropolitan mass transit system).

Hybrid cards and ***combi cards*** combine the properties of contact and proximity cards into one card. A hybrid smart card has two separate chips embedded in a card: contact and contactless. In contrast, a combi card (dual-interface) smart card has a single chip that supports both types of interfaces. The benefit of either card is that it eliminates the need of carrying both contact and contactless cards to use with different applications. In addition, you need only one card reader.

Stored-Value Cards:

The **stored-value card** is a card where a monetary value is prepaid and can be loaded on the card once or several times. From a physical and technical standpoint, a stored-value card is indistinguishable from a regular credit or debit card. In the past, the money value was stored on the magnetic strip, but recently, most stored-value cards use the technology of smart cards. With stored-value cards, the chip stores the prepaid value. Consumers can use stored-value cards to make purchases, off-line or online, in the same way that they use credit and debit cards—relying on the same networks, encrypted communications, and electronic banking protocols. What is different about a stored-value card is there is no need for authorization, but there is a limit set by how much money is stored on the card. The most popular applications of stored-value cards are the transportation cards that are very popular in the large cities in Asia. It is a necessity for the citizens in Seoul, Hong Kong, and Singapore to hold smart cards that pay for subways, buses, taxis, and other applications.

The transportation cards do not require any fees, but the bank that initiates prepaid cards may require fixed monthly fees or a registration fee. Stored-value cards are also popular to pay for telephone calls and texting.

Stored-value cards come in two varieties: *closed-loop* (single purpose) and *open-loop* (multiple purposes). Closed-loop cards are issued by a specific merchant or merchant

group (e.g., a shopping mall) and can be used to make purchases only from the card issuer. Mall cards, refund cards, some toll-pay cards, prepaid telephone cards, and Internet

use cards are all examples of closed-loop cards. Among closed-loop cards, gift cards have traditionally represented a strong growth area, especially in the United States (CardCash 2015). Over 90% of U.S. consumers purchase or receive a gift card annually. In the USA over $100 billion is spent annually on gift cards. The figure has been averaging about a 6% annual increase over the last 5 years.

An open-loop card is a multipurpose card that can be used for transactions at several retailers or service providers. Open-loop cards also can be used for other purposes, such as

a prepaid debit card or for withdrawing cash from an ATM. Financial institution with card-association branding, such as Visa or MasterCard®, issue some open-loop cards. They

can be used anywhere that the branded cards are accepted. *Full open-loop cards* (e.g., the MasterCard Mondex® card) allow the transfer of money between cards without the bank's

intervention.

Stored-value cards may be acquired in a variety of ways. Employers or government agencies may issue them as payroll cards or benefit cards in lieu of checks or direct deposits. Merchants or merchant groups sell and load gift cards. Various financial institutions and nonfinancial outlets sell prepaid cards by telephone, online, or in person. Cash, bank wire transfers, money orders, cashier's checks, other credit cards, or direct payroll or government deposits fund prepaid cards.

Applications of Smart Cards

In many parts of the world, smart cards with magnetic stripes are used as credit cards for retail purchases and paying for transportation. They also are used to support nonretail and nonfinancial applications. A general discussion of all types of smart card applications can be found at **globalplatform.org**.

Retail Purchases

Transit Fares

EC Micropayments:

Micropayments or **e-micropayments** are small payments made online, usually under $10. From the viewpoint of many vendors, credit cards are too expensive for processing small payments. The same is true for debit cards, where the fixed transaction fees are greater, even though there are no percentage charges. These fees are relatively small (in percentage) only for card purchases over $10. Regardless of the vendor's point of view, there is substantial evidence, at least in the offline world, that consumers are willing to use their credit or debit cards for small-value purchases. In the online world, the evidence suggests that consumers are interested in making small-value purchases, but not with credit or debit card payments. A good example is Apple's iTunes music store and their App Store. There have been more than 35 billion songs downloaded from iTunes and over 100 billion apps downloaded from their App store. A substantial percentage of the songs that were downloaded cost $1.29 a piece, while many of the apps cost somewhere between $.99 and $5. Although most of Apple's customers paid for these downloads with a credit or debit card, the payments were not on a per-transaction basis. Instead, their customers created accounts with Apple, and Apple then aggregated multiple purchases before charging a user's credit or debit card.

Other areas where consumers have shown a willingness to purchase items under $5 using a credit card are cell phone ringtones, ring-back tones, and online games. The annual market for ringtones and ring-back tones is in the billions of dollars. The download of both types of tones is charged to the consumer's cell phone bill. Similarly, the annual market for

online games is in the billions of dollars. Like songs and tones, downloading a game is usually charged to the consumer's account, which is paid by a credit or debit card. Currently, there are five basic micropayment models that do not depend solely or directly on credit or debit cards, and that have enjoyed some amount of success. Some of these are better suited for off-line payments than online payments, although there is nothing that precludes the application of any of the models to the online world. The models include:

Aggregation. Payments from a single consumer are accumulated and processed periodically (e.g., once a month), or as a certain level is reached (e.g., $100). This model fits vendors with a high volume of repeat business. Both Apple's iTunes and App stores use this model. The transportation card used in Seoul, Korea, and many other places is of this nature.

Direct payment. In this case, an aggregation is used but the micropayments are processed with an existing monthly bill (e.g., a mobile phone bill).

Stored-value. Funds are loaded into a debit account from which the money value of purchases is deducted when purchases are made. Off-line vendors (e.g., Starbucks) use this model, and music-download services use variants of this model. This system is being used by several online gaming companies and social media sites.

Subscriptions. A single payment (e.g., monthly) provides access to content. Online gaming companies and a number of online newspapers and journals have used this model.

À la carte. Payments are made for transactions as they occur; volume discounts may be negotiated. This model is used in stock trading, such as at E-Trade.

The world of micropayments has been billed as $13 billion opportunity being driven by the rapid growth in digital content (news, music, videos, etc.), mobile apps, and the social network and online gaming communities. In spite of this opportunity, the micropayment arena continues to be a graveyard filled with the remains of companies who expired in their infancy. Some companies and payments options that support micropayments and seem to have some staying powers are: Amazon Payments, PayPal Micropayments, and the mobile payment companies Boku (**boku.com**) and Fortumo (**fortumo.com**). Prior to their acquisition by PayPal, Zong was a relatively successful mobile payment company that specialized in micropayments for online gaming and social networking. Except for a handful of situations, all of these options still cost the merchants and consumers money depending on nature of the purchases and on how the customer backs the payment (by credit cards, bank accounts, mobile accounts, etc.). So, the long-term answer to the issues with micropayments may ultimately rest with the credit card associations. In some cases, the solution might be for the card associations to adjust their fees, which Visa and MasterCard have done for some vendors with high transaction volumes. In other cases, it may require changes in the way that the cards are traditionally processed by the vendors.

Payment Gateways:

While credit and debit cards dominate e-commerce payments, one alternative that has succeeded is **PayPal** (and its clones). PayPal was formed in the late 1990s from the **merger** of two small start-up companies, **Confinity** and **X.com**. Their initial success came from providing a payment system that was used for eBay transactions (PayPal is now an eBay company). How did the system work? Essentially, eBay sellers and buyers opened up PayPal accounts that were secured by a bank or credit card account. At the completion of an auction, the payment transactions were conducted via the seller's and buyer's PayPal accounts. In this way, the bank or credit card accounts remained confidential. It is important to remember that in those days, buyers were often wary of revealing their credit card numbers online. For the seller, it also eliminated the transaction fees charged by the credit card companies, although PayPal eventually began charging similar, though somewhat lower, transaction fees.

Even though eBay had a payment system called **Billpoint**, PayPal became so successful that eBay eventually decided to close Billpoint and acquired PayPal in October 2002. Why did eBay select PayPal over Billpoint? This is a tough question that has generated a multitude of answers. PayPal had a better user interface, better marketing, and a better mix of services. Regardless, neither Billpoint nor PayPal had to find the market of potential buyers and sellers; eBay had already done this. What Billpoint and PayPal had to do was convince eBay consumers and merchants to use their systems. PayPal was simply more successful at it than Billpoint. Because of their ongoing success and the percentage of their non-eBay business, PayPal was spun off from eBay in July 2015. According to their 2015 annual report, PayPal operates in 203 global markets and has 184 million active user accounts. PayPal supports payments in 26 currencies. As a standalone company, their 2015 revenue was about $9.2 billion up 15% from the prior year. Part of this growth comes from the acquisition of a number of key payment companies focused on the future of digital payments including:

Braintree—payment gateway with key customers in the sharing economy space (e.g., Airbnb and Uber)

Venmo—mobile P2P company that was part of Braintree

Xoom—international remittance

Padiant—technology for creating branded (private-label) mobile e-wallets for retail chains

While PayPal provides a number of services, at their core they are a full-service third-party payment gateway. Basically, they eliminate the need for a merchant to deal with the intricacies and complexities of authorization and settlement in online payment. They also eliminate the need for merchants to handle card information and for customers to provide

their financial information with every transaction. The way it works is that in a given purchase transaction the customer is presented with a payment webpage containing PayPal as an option. If the customer selects this option, they are directed to a Web page on PayPal's site. If the customer has a PayPal account, they simply confirm the purchase and payment instrument (e.g., card). If not, they provide information about their card, and PayPal takes it from there. In both cases, the customer is returned to the merchant site along with approval of the payment. At this point, PayPal transfers the settlement payment to the merchant's bank.

Domestically, PayPal is the leading third-party payment gateway. In recent years, Amazon, the leading online retailer, has started to make forays into this third-party payment arena with their Amazon Payments system (**payments.amazon.com**). It is a comprehensive set of online payment tools and APIs that enable businesses and developers to offer Amazon's payment capabilities as an alternative to paying with credit or debit cards or Paypal. Like PayPal this alternative is surfaced by incorporating a "Pay with Amazon" button on the merchant's checkout Web page or mobile app. If a customer clicks the button, they are taken to Amazon's familiar "Login and Pay" screen. If he or she already has an account with

Amazon, then the customer will be asked to confirm or select from the cards and shipping addresses that are associated with the account. If he or she doesn't have an account, they

be guided through the enrolment process. While Amazon is not an immediate threat to PayPal, they may be in the future. It is estimated that are over 50 million U.S. Amazon Prime

members, which represents close to 50% of U.S. households. Amazon already has their payment information on hand and these customers are all familiar with the simplicity of their

patented "By now with 1-Click" button. Globally, PayPal is also the market-leading gateway.

PayPal is used extensively throughout the world. In a number of countries PayPal is one of the preferred payment methods behind cards, often handling between 10 and 15% of all payments. This is the case, for **example**, in France, Germany, the UK, and Australia. However, in select countries there are other gateways that are used more often. Included in this group are:

Sofort (**sofort.com**) in Germany. Gateway that relies on direct bank transfers rather than cards.

• Wirecard AG (**wirecard.com**) in Germany. Offers cashless payment and other payment services both within Germany and worldwide.

• Yandex.Money (**wirecard.com**) in Russia. Partnership between Srebank and the search company Yandex. Handles cash, bankcards, and e-money.

• Qiwi (**qiwi.com**) in Russia. Payment service that is publicly traded on NASDAQ and headquartered in Cyprus. It also operates in Kazakhstan, Moldova, Belarus, Romania,

the United States, and the United Arab Emirates.

• Alipay (**global.alipay.com**) in China. Part of the Alibaba group discussed in the opening case of this chapter. Like PayPal it is a full-service payment gateway servicing domestic and cross-border transactions in China.

• Tenpay (**global.tenpay.com**) in China. Second largest payment service. It's owned by Tencent who also owns China's largest social network Weibo.

• iDEAL (**ideal.nl**) in the Netherlands. A payment service in the Netherlands that uses direct bank transfers.

With the exception of China, in each of these countries **PayPal** is still used.

Mobile Payments: Because of the strong growth in mobile usage worldwide there continues to be a strong belief that mobile payments will emerge as a primary way to pay, potentially

eliminating dependence on cash, cards, and other modes of EC payment. While mobile payments are growing rapidly, they will not supplant cash, cards, or even other forms of EC

payments anytime soon. According to eMarketer, mobile payments reached $450 billion in 2015 and will grow to $1 trillion by 2019. To put this in context, in 2015 mobile payments accounted for 24% of all EC retail sales and 1% of total retail sales. By 2019, they will account for 30% and 4%, respectively. These shifts reflect a substantial amount of growth in mobile payments that sellers cannot ignore, but it's important to remember that in relative terms usage is still low when compared to all other forms of payment.

Types of Mobile Payments

The term **mobile payment** refers to payment transactions initiated or confirmed using a person's mobile device, usually a smartphone although payments can be made with other mobile devices such as tablets and wearables. The term actually covers a number of different types of solutions, as well as different combinations of hardware and software technologies.

Just like online payments, there are many parties involved in any mobile payment system From the standpoint of the various parties, any successful mobile system needs to overcome the following sorts of issues:

For Buyer: Security (fraud protection), privacy, ease of use, choice of mobile device.

For Seller: Security (getting paid on time), low cost of operations, adoption by sufficient number of users, improved speed of transactions.

For Network Operator: Availability of open standards, cost of operation, inter-operability, and flexibility and roaming.

For Financial Institutions: Fraud protection and reduction, security (authentication, integrity, non-repudiation; and reputation.

Most of today's mobile payment solutions are designed to replace existing payment methods including non-digital (cash or credit) and digital (PC-based). As such, they tend to fall into one of four payment types (distinguished by "who pays whom") including

Consumer. Buyer pays a merchant for goods and services. This is the purview of most digital wallets (e.g., Apple Pay).

• **Merchant**. Receiving money from a customer in exchange for goods and services. Often enabled by mobile POS (e.g., Square).

• **Person-to-Person (P2P)**. Money exchange between two or more people, as a gift or payback (e.g., PayPal's Venmo).

• **Institutional**. Managing and paying bills from an institution (like a utility company) for services rendered (e.g., Finovera or Mint).

The fact that these payment types are all designed to supplant or cannibalize existing nonmobile payments systems may be one of the reasons for their slower than expected

uptake. To many potential users, mobile payments applications are simply "credit card surrogates: they're a veneer over what already exists." So, why change especially since they

are all underpinned by substantial technological ecosystems. We won't discuss institutional payments in this chapter, but we will describe the other three types of mobile payments

in this section along with their underlying technologies.

Mobile Consumer Payments: Wallets,

Clouds, and Loops

As a recent Accenture survey of 4000 respondents in North America shows, the average consumer's exposure to mobile payments is through his or her mobile digital wallet. Among the more popular wallets are PayPal, Apple Pay, and the recently morphed Google Wallet.

Digital and Virtual Currencies:

Types of Digital Currencies

Fiat currency (aka real currency, real money, or national currency) is the "coin and paper money of a country that is designated as legal tender; circulates; and is customarily

used and accepted as the medium of exchange in the issuing country."

Electronic money (e-money) is a digital representation of fiat currency used for purposes of electronic transfer (e.g., the digital representation funds used to settle a merchant account after an EC purchase is made).

virtual currency is the "digital representation of value that can be digitally traded and functions as (1) a medium of exchange; and/or (2) a unit of account; and/or (3) a store of value, but does not have legal status in any jurisdiction."

Basically, it only functions as a currency because there is a community of users willing to treat it as such. Finally, **digital currency** is a generic term that refers to the digital representation (0 s and 1 s) of either e-money (fiat) or virtual currency (non-fiat). So, e-money and virtual currency are types of digital currency but not vice versa. Virtual currency covers two sub-types: *non-convertible* (closed) and *convertible* (open). According to the U.S.

Treasury's Financial Crimes Enforcement Network (**fincen.gov**), **convertible virtual currency** is a virtual currency that has "an equivalent value in real currency, or acts as a substitute for real currency." Some examples include the cryptocurrencies like Bitcoin and most retail e-coupons. In contrast, a **nonconvertible virtual currency** is a virtual currency

used in a specific virtual world or domain that cannot (theoretically) be exchanged for fiat currency. Many of the better known examples come from online games. Some examples

of this would include: World of Warcraft Gold, Farm(ville) Cash, and Q Coin from TenCent QQ. In these games success is based on obtaining virtual money, which is earned by completing various tasks or purchased using real money (which is often the primary source of income for the game company). Technically, these currencies cannot be used or exchanged in the outside world. However, it many cases secondary markets (black or not) have arisen that are willing to exchange the nonconvertible currency into a fiat currency or some other virtual currency.

A key feature of nonconvertible, virtualized currencies is that they are *centralized*. This means that there is a single administrative authority in charge of regulating the currency—issuing the currency, establishing rules of use and exchange rates, tracking payments, and controlling the amount in circulation. In contrast, convertible virtual currencies can be either centralized or decentralized. A *decentralized* virtual currency is distributed, open-sourced, and peer-to-peer. There is no single administrate authority who oversees and monitors the currency. This is the nature of many of the *cryptocurrencies* like Bitcoin which we'll discuss momentarily.

Size of the Virtual Currency Market

A couple of years back, the Yankee Group accessed the size of the virtual currency market. Their analysis included both the mature virtual currencies like loyalty points, credit card points, air miles and physical coupons, as well as the up-and-coming (digital) virtual currencies including app-based coins and tokens, personal information and time (exchanged) for apps and tokens, and Bitcoins. At that time, the total value of all the virtual currency markets was close to $48 billion with the mature currencies making up close to 97% of the total. They estimated that by 2017, the mature markets would grow steadily, while the up-and- comers would experience rapid growth (in the 130–200% range). Yet, the mature markets would still garner the lion's share.

However, the problem with the estimates is that, then and now, it is very difficult to assess the exact values associated with the game-based and Bitcoin currencies, although for different reasons. For game-based you not only have to calculate an exchange rate but many of the game companies don't provide the necessary data to do a reasonable assessment. For Bitcoin the number of coins in circulation is known, however their exact value is dependent on exchange rates that can fluctuate substantially at any given time. The value is subjective and based on market volatility and the going rates paid by the

Bitcoin exchanges. For example, in the spring of 2016 the total number of Bitcoins in circulation was around 15.5 billion and the price was fluctuating between $400 and $450. That's a difference of around $6.2 billion to $6.7 billion which is fairly substantial.

Ethical Issues: Ethics is a set of moral principles or rules of how people are expected to conduct themselves. It specifies what is considered by society to be right or wrong.

Example: Who Owns User-Generated Content?

In August 2009, five Facebook users filed a class action **lawsuit against Facebook**, claiming that Facebook violated privacy laws by gathering online users' activity and providing their personal information to third parties without the users' permission. They also alleged that Facebook engages in data mining, without informing the users. The objective of the data collection was to enable Facebook to sell their users' data to advertisers because Facebook needed more revenue sources. The Electronic Privacy Information Center filed a complaint with the FCC, alleging that Facebook's changes in privacy settings made users' information publicly available without giving the users the option to opt out. Facebook was found to be liable for violating the privacy of their users and amended their rules. Facebook has continuously been modifying and changing its privacy settings, letting its users decide how much they want to share with the public.

Business ethics (also known as *corporate* or *enterprise ethics*) is a code of values, behaviors, and rules, written or unwritten, for how people should behave in the business world. These ethics dictate the operations of organizations.

The Issues of Internet Abuse in the Workplace

The actual time wasted and productivity losses due to employees spending time on the Web during working hours is very high. In general, employees spent more than 1 h per week on

social media alone, followed by online games and e-mails. Many companies have banned access to social networks such as Facebook, Twitter, and LinkedIn.

Managing Internet Abuse

Employees are encouraged to check their social networks only once or twice a day, consolidate their social networking streams, develop a clear social networking policy, and utilize technology made for consolidation. A social networking policy should communicate clear guidelines from employers to employees. For example, employees should not spend more than 20 minutes per day of company time browsing social networks.

Monitoring Employees: Is It Ethical?

Google and several other software application providers have incorporated new spyware on company smartphones given to employees, which enables employers to monitor the whereabouts of their employees using the smartphones' built-in GPS tracking systems. Google's Latitude enables companies to know their employees' location at all times. The ethical question is, whether this new power will be used by governments to invade the privacy of an individual's real-time whereabouts.

Legal Issues:

• **Intellectual property rights.** Ownership and value of information and intellectual property. Intellectual property is difficult to protect on the Web. Owners are losing a substantial amount of money due to piracy.

Copyright is an exclusive legal right of an author or creator of intellectual property to publish, sell, license, distribute, or use such work in any desired way. A copyright does not last forever; it is good for a set number of years after the death of the author or creator. After the copyright expires, the work reverts to the public domain (or becomes publicly available).

Example: An artist made $90,000 by selling someone's Instagram photo without permission.

Patent is "an exclusive right to a particular invention. Patents are granted by states or governments to the creator of an invention, or to someone who has been designated by them to accept the rights over the invention. The holder of the patent has sole rights over the invention for a specified period of time" (20 years) Patents serve to protect the idea or design of the invention, rather than any tangible form of the invention.

Example: Oracle Versus Google

In following its legal right of enforcement, Oracle has been mining its newly acquired patent portfolio and actively seeking and suing infringers. In 2012, Oracle sued Google over its Android product for using Oracle's Java technology (copying Java code) without a license. While the trial court ruled that APIs are not subject to copyright, the appeals court disagreed, holding that Java's API packages were copyrightable, although it sent back the case to the trial court to determine whether or not Google's copying was a violation of the Fair Use Doctrine. In 2014, Oracle won the case.

Trademarks is "a word, phrase, symbol, and/or design that identifies and distinguishes the source of the goods of one party from those of others." A trademark is used by individuals, business organizations, or other legal entities to notify consumers of a unique source, and to tell the difference between a company's products or services and those of others.

Example: In 2008, eBay won a landmark trademark case against Tiffany, a leading jewelry retailer, who had sued eBay alleging that many of the items being advertised on eBay as Tiffany merchandise were actually fakes.

Privacy. Because it is so difficult to protect the privacy of individuals on the Web, there are some countries that do not regulate privacy issues while others have strict anti-invasion rules.

Privacy in E-Commerce

The reason for privacy concerns stems from the fact that in using the Internet, users are asked to provide some personal data in exchange for access to information (such as getting

coupons and allowing downloads). Data and Web mining companies receive and gather the collected data. Privacy may be violated.

Example: Google Glass

In May 2013, eight lawmakers, concerned about Google Glass (and other smart glasses), wrote a letter to Google asking what the company planned do to protect people's privacy.

Free speech versus censorship. Free speech on the Web may result in offensive and harmful attacks on individuals and organizations. Therefore, some countries have decided to censor material on the Internet.

Defamation laws (including privacy violations), child pornography, fighting words, and terrorist threats are some of the traditional restrictions on what may be said freely. For

example, it is illegal to scream "fire" in a crowded theater or make bomb threats in an airport, but there is no law against taking pictures in public places. Free speech often conflicts with privacy, protection of children, indecency.

• **Consumer and merchant protection against fraud.**

For e-commerce to succeed, it is necessary to protect all transactions and participants against fraud.

Internet Use that Is Not Work-Related

Majority of employees use e-mail and surf the Web for purposes not related to work. The use of company property (i.e., computers, networks) for e-mail and Internet use may create risk and waste time.

For example: companies may be held liable for their employees' use of e-mail to harass other employees, participate in illegal gambling, or distribute child pornography.

Unit 4

Digital Business Applications – I

Electronic Retailing:

B2C Electronic Retailing:

A retailer is a sales *intermediary* between manufacturers and customers. Even though many manufacturers sell directly to consumers, they usually do so to supplement their major sales

through wholesalers and retailers. In the physical world, retailing is done in stores (or factory outlets) that customers must visit physically in order to make a purchase, although sometimes customers may order by phone. Companies that produce a large number of products for millions of customers, such as Procter and Gamble, must use retailers for efficient product distribution. However, even if a company sells relatively few different types of products (e.g., Apple Computers), it still might need retailers to reach a large number of customers who are scattered in many locations.

Catalog (mail-order) sales offer companies the opportunity to reach more customers and give customers a chance to buy from home. Catalog retailers do not need a physical store with staff; online shopping has created the need for electronic catalogs. Retailing conducted over the Internet is called **electronic retailing (e-tailing)**, and sellers who conduct retail business online are called **e-tailers**, as illustrated in the opening case. E-tailing can be conducted through catalogs that have fixed prices as well as online via auctions. E-tailing helps manufacturers (e.g., Dell) sell directly to customers.

Developments in B2C E-Commerce

The first generation of B2C e-commerce sold books, software, and music—simple to understand small items (known as commodity items) that were easily shipped to consumers.

The second wave of online growth started in 2000, as consumers started researching and buying complex products such as furniture, large appliances, and expensive clothing. Today consumers research product information and purchase online from categories such as bedding, spas, expensive jewellery, designer clothes, appliances, cars, flooring, big-screen TVs, and building supplies. Consumers are also buying many services such as college educations and insurance policies.

Characteristics E-Tailing

1. **Brand name** recognition (e.g., Apple, Dell, Sony). A service guarantee provided by well-known vendors (e.g., Amazon.com, BlueNile.com). For example, return policies and expedited delivery; free shipping.
2. **Digitized format** (e.g., software, music, e-books, or videos).
3. Relatively inexpensive items (e.g., office supplies, vitamins).
4. Frequently purchased items (e.g., books, cosmetics, office supplies, prescription drugs).
5. Commodities for which physical inspection is not necessary (e.g., books, CDs, airline tickets).
6. Well-known packaged items that you normally do not open in a physical store (e.g., canned or sealed foods, chocolates, vitamins).

Characteristics

Advantages of Successful E-Tailing

• Lower product cost, thus increasing competitive advantage.
Reach more customers, many outside the vendor's region, including going global.

For example, some Chinese and Taiwanese e-tailers operate sites that sell electronic products all over the world

• Change prices and catalogs quickly, including the visual presentation. Such flexibility increases competitive advantage.

• Lower supply chain costs.

• Provide customers with a wealth of information online as a self-service option, thus saving customer

service costs.

• React quickly to customer needs, complaints, tastes, and so forth.

• Provide customization of products and services, self-configuration, and personalization of customer care.

• Enable small companies to compete with larger companies.

• Better understand customers and interact with them.

• Sell specialized items countrywide, or even worldwide (e.g., surfing-related merchandise by the Australian company **surfstitch.com**).

• Engage customers in interesting search, comparison, and discussion activities.

• Contact customers who are not reachable by traditional methods of communication.

Retailing versus e-tailing

Factor	Retailers	E-Tailers
Increase of sales volume	• Expansion of locations, stores, and space	• Going out of their regular area and even globally to find customers
More visitors, but less revenue	• Expand marketing efforts to turn "window shoppers" into active shoppers	• Expand marketing communications to turn viewers into shoppers
Use of technology	• Automation store technologies such as POS, self-check, and information kiosks	• Ordering, payments, and fulfillment systems
		• Comparisons and customer testimonials
		• Instant delivery of digital products
Customer relations and handling of complaints	• Face-to-face, stable contacts	• Anonymous contacts, less stability
	• More tolerance of disputes due to face-to-face contacts	• More responsiveness to complaints due to potential negative publicity via social media platforms (e.g., Facebook, Twitter)
Competition	• Local competition	• More competitors
	• Fewer competitors	• Intense due to comparisons and price reductions
		• Global competition
Customer base	• Local area customers	• Wide area (possibly global) customers
	• Lack of anonymity	• Anonymity most of the time
	• High increase of customer loyalty	• Easy to switch brands (less loyalty)
Supply chain cost	• High cost, interruptions	• Lower cost, more efficient
Customization and personalization	• Expensive and slow	• Fast, more efficient
	• Not very popular	• Popular
Price changing	• Expensive and slow, not done often	• Inexpensive, can be done anytime
Adaptability to market trends	• Slow	• Rapid

limitations E-Tailing:

Lack of Physical Experience

Difficulty Building Customer Relationships

Development and Maintenance Costs

Website and app maintenance is an ongoing process and expense

Shipping and Delivery Costs

More Difficult for Customers to Make Returns

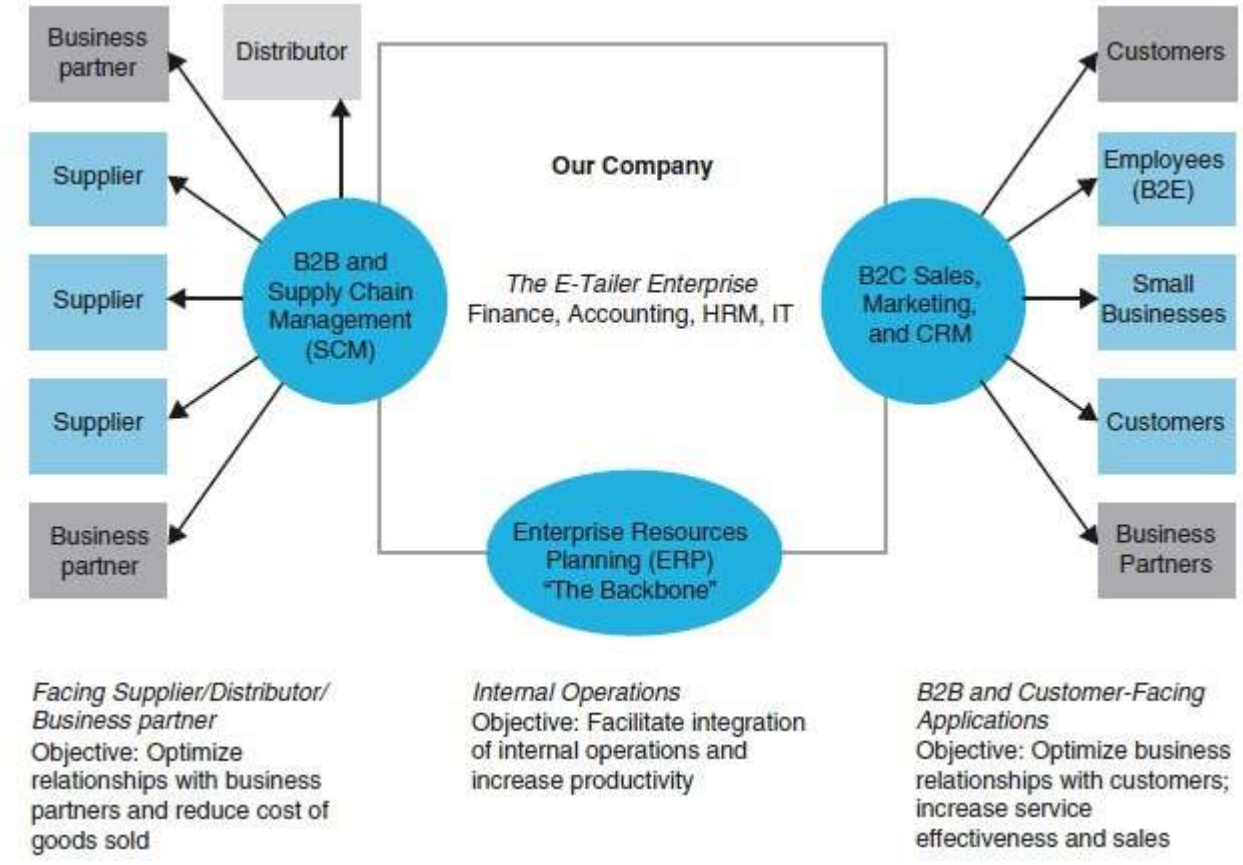
eTailers are hurt by the difficulty of returning items

Consumer Trust and Security

E-Tailing Business Models:

From the point of view of a retailer or a manufacturer that sells to individual consumers (Fig). The seller has its own organization and must also buy materials, goods, and services from others, usually

businesses (B2B in Fig). E-tailing, which is basically B2C is done between the seller and an individual buyer.



Classification of Models by Distribution Channel:

1. **Traditional mail-order retailers that also sell online.**

For example, QVC and Lands' End also sell on the Internet.

2. **Direct marketing by manufacturers.** Manufacturers such as Dell, LEGO, and Godiva market directly online from their webstore to customers, in addition to selling via retailers.

3. **Pure-play e-tailers.** These e-tailers sell only online. Amazon.com is an example of a pure-play e-tailer

4. **Click-and-mortar ("brick-and-click") retailers.** These are retailers that open webstores to supplement their regular business activities (e.g., **walmart.com**). Some pure-play e-tailers are creating physical storefronts. For example, Apple opened physical

stores and Dell sells its products at partner store locations, such as Best Buy and Staples. The idea of selling both online and off-line is part of a model or strategy known as a **multichannel business model**.

5. **Internet (online) malls.** These malls include many stores on one website.

Note that, in direct marketing of any type, sellers and buyers have a chance to interact directly and better understand each other.

6. **Flash sales.** Sellers can offer steep discounts via an intermediary or directly to the consumers.

Referring Directories: This type of virtual mall contains a directory organized by product type. Banner ads at the mall site advertise the products or vendors. When users click on the product and/or a specific store, they are transferred to the webstore of the seller, where they can complete the transaction. **Examples** of referring directories can be found at **bedandbreakfast.com**. The stores listed in a directory either own the directory collectively,

or they pay a subscription fee or a commission to the organizing third party for maintaining the site and advertising their products. This type of e-tailing is a kind of affiliate marketing.

Malls with Shared Services: In online malls with shared services, a consumer can find a

product, order and pay for it, and arrange for shipment. The hosting mall provides these services. Ideally, the customer would like to go to different stores in the same mall, use one shopping cart, and pay only once. This arrangement is possible, for example, in Yahoo! Small Business and **bing-shop.com**. With the availability of e-commerce software and outsourced logistics services, the popularity of online malls is shrinking.

SOCIAL SHOPPING: CONCEPTS, BENEFITS, AND MODELS:

Definitions:

Social shopping (also known as *sales 2.0*) is online shopping with social media tools and platforms including five social networks. It is about sharing shopping experiences with friends. Social shopping blends e-commerce and social media. (e.g., discussion groups, blogs, recommendations, reviews) and uses them before, during, and after shopping.

Drivers of Social Shopping:

- The following are the major drivers of social shopping:

A large number of people visiting social networks attracts advertisers

- The increasing number of recommendations/suggestions made by friends and the ease and speed of accessing them
- The need to compete (e.g., by differentiation) and to satisfy the social customer
- The emergence of social customers with knowledge and competence in using the Internet (e.g., in finding reviews and comparing prices)
- The need to collaborate with business partners
- The huge discounts provided by some of the new business models (e.g., flash sales)
- The socially oriented shopping models (e.g., group buying)
- The ease of shopping while you are inside some social networks (e.g., from Facebook's "Buy" button)
- The ease of communicating with friends in real time using Twitter and smartphones

Concepts and Content of Social Shopping

Social shopping is done in social networks (e.g., Polyvore, Wanelo), in vendors' socially oriented stores, in stores of special intermediaries (such as Groupon.com), and on social networks. The buyers are *social customers* that trust and/or enjoy social shopping. For example, popular brands are sold by e-tailers such as Gap (**gap.com**), Shopbop (**shopbop. com**), and InStyle (**instyle.com**). In addition, fashion communities such as Stylehive (**stylehive.com**) and Polyvore (**polyvore.com**) help promote the season's latest fashion collections. Social shoppers are logging on to sites like Net-A-Porter (**net-a-porter.com**) to buy designer clothes online.

They can also log on to sites such as ThisNext (**thisnext.com**), create profiles, and blog about their favorite brands.

There are two basic practices for deployment of social shopping:

1. Add social software, apps, and features (e.g., polling) to existing e-commerce sites.

2. Add e-commerce functionalities (e.g., e-catalogs, payment gateways, shopping carts) to social media and network sites, where many vendors offer their stores.

The Roles in Social Commerce

Connector: These are the people with contacts that introduce people to each other. Connectors try to influence people to buy. Consultants and connected people play this role.

Salespeople: Like their off-line counterparts, salespeople's major effort is to influence shoppers to buy. They are well connected, so they can impress buyers.

Seekers: These consumers seek advice and information about shopping and services from experts, friends, and mavens.

Mavens: Mavens are recognized, but are unofficial experts in certain domains that can provide positive or negative recommendations to advice seekers.

Self-sufficient: These people work on their own and do not like to be influenced.

Unclassifieds: Most people do not belong to any one of the above categories.

Benefits of Social Shopping

You can socialize while shopping.

You can discover products/services you never knew existed (e.g., see thisnext.com).

You can interact with vendor (brand) representatives easily and quickly (e.g., feature available at the blog on stylehive.com).

Your confidence and trust in online shopping may increase due to engagement and interactions with friends.

You can get super deals via group buying, daily specials, and more. Join Groupon just to see the super daily deals.

You can exchange shopping tips with your friends, fans, and others. Thus, you can learn from experiences of others.

You can build and share wish lists.

You can shop together with people like you.

The Major Types and Models of Social Shopping:

- Group buying
- Deal purchases (flash sales), such as daily special offers
- Shopping together in real time
- Communities and clubs
- Marketplaces
- Innovative models
- Shopping for virtual products and services
- Location-based shopping
- Shopping presentation sites (e.g., on YouTube) and gaming sites
- Peer-to-peer models (e.g., money lending)
- Private online clubs
- B2B shopping

Example: polyvore.com is a community site for online fashion and style where users are empowered to discover and develop their style and possibly set fashion trends. Users do this by creating “sets” that are shared across the Web.

Social Shopping Aids – Recommendations, Reviews, Ratings, and Marketplaces:

Recommendations in Social Commerce:

Online customers use shopping aids (e.g., price comparison sites like **nextag.com**), looking at product review sites such as **epinions.com**, and researching other sources. Examining and participating in social networking forums is another way to compare prices and read product and service reviews. A variety of SC models and tools is available for this purpose. We present two major categories here.

Ratings and Reviews

Ratings and reviews by friends, even by people that you do not know (e.g., experts or independent third-party evaluators), are usually available for social shoppers. In addition,

any user has the opportunity to contribute reviews and participate in relevant discussions.

Examples:

Customer ratings and reviews. Customer ratings are popular. They can be found on vendors' product (or service) sites such as Buzzillions, or on independent reviews sites (e.g., TripAdvisor), and/or in customer news feeds (e.g., Amazon.com, Epinions). Customer ratings can be summarized by votes or polls.

• **Customer testimonials.** Customer experiences are typically published on vendors' sites, and third-party sites such as **tripadvisor.com**.

• **Expert ratings and reviews.** Ratings or reviews can also be generated by domain experts and appear in different online publications.

• **Sponsored reviews.** These are written by paid bloggers or domain experts. Advertisers and bloggers find each other by searching through websites **sponsoredreviews.com**, which connects bloggers with marketers and advertisers.

• **Conversational marketing.** People communicate via e-mail, blog, live chat, discussion groups, and tweets. Monitoring conversations may yield rich data for market research and customer service (e.g., as practiced by Dell; see their social media command center).

• **Video product review.** Reviews can be generated by using videos. YouTube offers reviews that are uploaded, viewed, commented on, and shared.

• **Bloggers reviews.** This is a questionable method since some bloggers are paid and may use a biased approach. However, many bloggers have the reputation to be unbiased.

Example: mauijim.com is a designer of high-quality polarized sunglasses. The company is using Bazaarvoice Ratings & Reviews to enable customers to rate the company's sunglasses and accessories.

Social Recommendations and Referrals

Recommendation engines allow shoppers to receive advice from other shoppers and to give advice to others. *Social shopping* may combine recommendations in a social network platform with actual sales. Social recommendations and referrals are closely related to ratings and reviews and are sometimes integrated with them.

Example: ThisNext

ThisNext (**thisnext.com**) is a social commerce site where community members *recommend* their favorite products so others can discover desirable or unique items and decide what to buy.

Social Marketplaces refers to a marketplace that uses social media tools and platforms and acts as an online intermediary between buyers and sellers. Ideally, a social marketplace should enable the marketing of members' own creations as Polyvore does. Some examples of social marketplaces include:

craigslist.org : provides online classified ads in addition to supporting social activities (meetings, dating, events)

fotolia.com: is a social marketplace for royalty free photos, images, and video clips.

storenvy.com marketplace for unique businesses and photos. At no cost to sellers, a simple way is made available to create personalized webstores.

shopsocially.com is a consumer-to-consumer marketing communication and experience-sharing platform for shopping.

Direct Sales from Within Social Networks

Example: How Musicians Sell Online via Social Networks

Many musicians and other artists used to invest money to make their own CDs, T-shirts, and other items before they sold them. **Audiolife** provides artists with webstores, where

artists can directly interact with potential buyers. This arrangement also allows artists to "make-to-order" and sell merchandise.

Real-Time Online Shopping:

In real-time online shopping, shoppers can log onto a site and then either connect with Facebook or with another social network instantly from a smartphone or computer, or invite

their friends and family via Twitter or e-mail. Friends shop online together *at the same time*, exchanging ideas and comparing experiences. Some real-time shopping platforms are Facebook's social graph-based shopping platforms. Another player in this area is BevyUP.

Social Shopping in the Near Future

Imagine this scenario: A retailer will ask you to log in with Facebook on your mobile device as soon as you step into a physical store. Many of Facebook's partners have custom Facebook applications (Partner Apps) that users can download through their app stores, including Blackberry and Windows Phone (see **facebook.com/mobile**).

In this way users can receive *customized recommendations* on their mobile phones. You can expect that your friends who have been in that store will indicate electronically, which clothes ay be the best fit for you (e.g., using "likes"), then walk in and find what to buy. What about the risks? Privacy is a concern to many, but less important to "Millennials" who frequently share their experiences with others. In addition, sometimes people do not need to reveal their full identity on an in-store screen.

The Online Versus Off-Line Competition:

Customers' search cost. With today's shopping search and comparison engines and the use of mobile devices, the search cost to customers is very low and its importance in the competition is probably declining.

Delivery time. Order fulfilment in physical stores is usually immediate for physical goods. However, online companies are constantly reducing the time between purchase and

consumption. E-tailers are developing efficient same-day delivery services, at least in the large metropolitan areas.

Distribution costs. Traditional retailers need to spend money to build (or rent) stores, have inventory, advertise, etc. On the other hand, e-tailers need to pay for packing and shipments, but their advertising costs and inventory costs are lower. These costs vary, depending on the products, the geographical location, and more.

• **Tax differences.** The advantage of online shopping is diminishing as the trend is to levy a tax on out of state online products.

• **Price.** Not only do online vendors offer lower prices on the same goods, but they also may create a price conflict within click-and-mortar companies

• **Information available to buyers.** While buyers cannot physically examine goods they buy online, they can use the Internet to obtain considerable information on what they plan to purchase.

Product and Service Customization and Personalization:

The Internet also allows for easy self-configuration ("design it your way"). This creates a large demand for customized products and services. Manufacturers can meet that demand

by using a *mass customization* strategy. Many companies offer customized products on their websites. E-tailing is growing rapidly as an additional marketing channel. The *click-and-brick model is* a successful one regardless of the conflicts cited.

E-Banking:

E-banking saves users time and money. For banks, it offers a rapid and inexpensive strategy to acquire out-of-the-area customers. In addition, the banks may need fewer branches or employees. Many physical banks now offer online banking services, and some use EC as a major competitive strategy.

Online banking in general has been embraced worldwide, including developing countries. For example, online banking in China is increasing rapidly in popularity, especially among

China's new educated middle class who live in the more developed cities. It is facilitated by the use of smartphones and other mobile devices.

Pure Virtual Banks:

Virtual banks have no physical location and conduct only online transactions. Security First Network Bank (SFNB) was the first such bank to offer secure banking transactions on the Web. Amid the consolidation that has taken place in the banking industry, SFNB has since been purchased and now is a part of RBC Bank (**rbcbank.com**). Other representative virtual

banks in the United States are First Internet Bank (**firstib. com**) and Bank of Internet USA (**bankofinternet.com**). However, more than 97% of the hundreds of pure-play virtual banks failed by 2003 due to a lack of financial viability. Many more failed during 2007–2012. The most successful banks seem to be of the click-and-mortar type (e.g., Wells Fargo, City Corp, HSBC).

P2P Lending

The introduction of online banking enables the move of personal loans to the Web in what is called *online person-to-person money lending*, or in short *P2P lending*. This model allows people to lend money and to borrow from each other via the Internet.

Mobile Banking:

Mobile banking (**m-banking**) describes the conducting of banking activities via a mobile device (mostly via smartphones, tablets, texting, or mobile website). The influx of smartphones and tablets, especially iPhones and iPads, has led to an increased utilization of mobile banking. A popular service is a mobile deposit of checks. You sign the front and back of the check, snap pictures of both sides, including the endorsement on the back, and submit it. Throughout the world, more and more banks are offering mobile-based financial and accounting information and transaction capabilities.

Examples

Most banks deploy mobile services through a variety of channels, although the Internet and SMS are the most widely used. A blog written by Brandon McGee (**bmcgee.com**) provides links to several banking websites throughout the world that provide comprehensive wireless

financial services. The Chase Mobile app and other mobile banking services offered by J.P. Morgan Chase Bank at **chase.com** enable customers to access their accounts via smartphones and send text messages to request and receive account information.

Insurance Online:

An increasing number of companies use the Internet to offer standard insurance policies, such as auto, home, life, or health, at a substantial discount, mostly to individuals. Furthermore, third-party aggregators offer free comparisons of available policies. Several large insurance and risk-management companies offer comprehensive insurance contracts online. Although many people do not trust the faceless insurance agent, others are eager to take advantage of the reduced premiums. Many insurance companies use a dual strategy, using sales agents in the field but also selling online (e.g., advertising on e-mails and Google searches). Like real estate brokers, insurance brokers send unsolicited e-mails to millions of people. The stiff competition will probably reduce the commission for the surviving agents.

Example

The insurance industry has seen that over 86% of potential insurance customers are researching and gathering information on the Internet. Thus, insurance companies are trying to capitalize on this trend.

Stock Trading:

The commission for an online trade is between $1 and $15 (“dirt cheap brokers”) to $15–$30 (“mid-priced discount brokers”), compared with an average fee of $100–$200 per trade from a full-service broker. With online trading, there are no busy telephone lines, and the chance to err is small, because there is no oral communication in a frequently noisy environment. Orders can be placed from anywhere, at any time, and there is no biased broker to push a sale. Furthermore, investors can find a considerable amount of free research information about specific companies or mutual funds. Many services provided to online traders include online statements, tax-related calculations, extensive research on industries, real-time news, and even tutoring on how to trade (e.g., check **etrade.com**)

The investor accesses Schwab’s website (**schwab.com**), enters an account number and password, and clicks on “stock trading.” Using a menu, the investor enters the details of the order (buy, sell, margin or cash, price limit, or market order). The computer tells the investor the current (real-time) “ask” and “bid” prices, just as a broker would do over the telephone, and the investor can approve or reject the transaction.

Some companies, including Schwab, are now also licensed as exchanges. This allows them to match the selling and buying orders of their own customers for many securities in one to two seconds.

Other Mobile Finance Applications:

Mobile Stock Trading

Several brokerage companies offer extensive mobile services and stock trading mobile tools.

Real Estate Mobile Transactions

The real estate market can be an ideal place for mobile commerce since real estate brokers and buyers and sellers are constantly on the move. Most realtors offer a photo gallery for each property on your desktop or mobile device; but m-commerce can do more than that. Let us look at two examples.

Example: Using Augmented Realty

Using augmented reality some companies in Europe and the USA allow you to point your smartphone at certain buildings in a city (e.g., Paris) and then see the property value superimposed on the image of the building. This technology is combined with a GPS to let the system know your location. California-based ZipRealty.com that allows prospective real estate customers to find, see, and download properties in a mobile environment.

Digital Government:

Government-to-Citizens: The **government-to-citizens (G2C)** category includes all the interactions between a government and its citizens that take place electronically. G2C can involve dozens of different initiatives. The basic idea is to enable citizens to interact electronically with the government from anywhere and at any time. G2C applications enable citizens to ask questions of government agencies and receive answers, pay taxes, receive payments and documents, and schedule services, such as employment interviews and medical appointments. For example, in many U.S. states, residents can renew driver's licenses, pay traffic tickets, and make appointments for vehicle emission inspections and driving tests all online.

The major features of government websites are information on how to contact the government, public notices to citizens, links to other sites, educational material, publications,

statistics, legal notes, and databases. The major areas of such G2C activities are social services, tourism and recreation, public safety, research and education, downloadable forms, discovery of government services, tax filing, information about public policy, and advice about health and safety issues. G2C is now available on mobile/wireless devices in

many countries and local governments. Another area of G2C activity takes place by solving citizens' problems. The government (or a politician) can use CRM-type software to assign inquiries and problem cases to appropriate staff members Subsequently, workflow CRM software can be used to track the progress of the problems' resolution.

Note that over 20 countries block some websites for political, social, or other reasons (e.g., China, North Korea, Iran, Syria).

Two popular examples of G2C are **Electronic Voting, Electronic Benefits Transfer**

Government-to-Business:

Governments seek to automate their interactions with businesses. The relationship works two ways: government to business and business-to-government. Thus, G2B refers to activities where the government sells products to businesses or provides businesses with services and vice versa. Two key G2B activities are e-procurement and the auctioning of government surpluses.

Government-to-Government:

Governments buy large amounts of MROs (maintenance, repair, and operations, and other materials directly from suppliers. In many cases, RFQ (or tendering) systems are mandated by law. For years, these RFQs were done manually; the systems are now moving online. These systems utilize reverse (buy-side) auction systems. Governments provide all the support for such tendering systems. For additional information about such reverse auctions, see GSA Auctions (**gsaauctions.gov**). In the United States, for example, the local housing agencies of HUD (Housing and Urban Development), which provides housing to low-income residents, are moving to e-procurement.

Example 1: Procurement at GSA

The U.S. General Services Administration (**gsa.gov**) uses technologies such as demand aggregation and reverse auctions to buy items for various units of the federal government

Example 2: The U.S. SBA

The Procurement Marketing and Access Network of the Small Business Administration (**sba.gov**) has developed a service called PRO-Net (**pro-net.sba.gov**). It is searchable database that contracting officers in various U.S. government units can use to find products and services sold by small, disadvantaged businesses, or businesses owned by women.

Government-to-Employees Models & Internal Efficiency and Effectiveness:

Government-to-Employees (G2E)

Governments are just as interested, as private sector organizations are, in providing services and information electronically to their employees. **Government-to-employees (G2E)** applications refer to e-commerce activities between the government and its employees. Such activities may be especially useful in enabling efficient e-training of new employees, e-learning for upgrading skills and communication and collaboration activities. Other typical services are: e-payroll, e-human resources management, and e-recruiting.

Examples

Internal Efficiency and Effectiveness (IEE)

Governments have to improve the efficiency and effectiveness of their operations in order to stay within their budgets and avoid criticism. Unfortunately, not all governments (or units within governments) are efficient or effective. Automation, including e-commerce, provides an opportunity to significantly improve operations.

E-Government 2.0 and Social Networking:

By employing social media tools, new business models, and embracing social networks and user participation, government agencies can raise the effectiveness of their online activities to meet users' needs at a reasonable cost. Government agencies around the world are now experimenting with social media tools as well as with their own pages and presence on public social network sites. Governments are using Web 2.0 tools mainly for collaboration, dissemination of information, e-learning, and citizen engagement.

Example

The U.S. Coast Guard uses YouTube, Twitter, and Flickr to disseminate information and discuss their rescue operations. Notable is FEMA's Twitter feed (previously "FEMA in Focus"), a channel that provides dissemination of FEMA related information Law enforcement agencies use social media (such as Facebook and Twitter) to hunt for criminals.

7

M-Government

Mobile government (m-government) is the implementation of e-government applications using wireless platforms and mobile devices, especially smartphones. It is done mostly in G2C (e.g., see Government of Canada Wireless Portal; **mgovworld.org**). M-government uses wireless Internet infrastructure and devices. It is a value-added service, because it enables governments to reach a larger number of citizens (e.g., via smartphone or Twitter)

and it can be more cost-effective than wireline-based EC platforms. It is very useful in disasters (e.g., emergency notifications), is fast (e.g., in conducting surveys and polls), and it is convenient for citizens as well. In addition, governments employ large numbers of mobile workers who are supported by wireless devices.

Example: Public Buses in Honolulu

An example of a mobile government project is the city government run bus location system (an app) in Honolulu, Hawaii called "DaBus" (**honolulu.gov/mobile**). Using your cell phone, you can find the estimated arrival time of any of the buses at more than 4000 bus stops. Buses are equipped with GPS devices that transmit the bus's location in real time. The system then calculates the estimated arrival time for each stop.

M-government can help make public information and government services available anytime and anywhere. A specific example of m-government would be texting a mass alert to the public in the event of a major disaster.

E-Learning, E-Training and E-Books:

Basics of E-Learning:

There are several definitions of e-learning. A working definition of **e-learning** is the use of online delivery of educational materials and methods, using information technologies, for the purposes of learning, teaching, training, or gaining knowledge at any time, and at many different locations.

E-learning is broader than the term *online learning*, which generally refers exclusively to Web-based learning. E-learning includes *m-learning* (or *mobile learning*) that is used when the material is delivered wirelessly to smartphones, tablets, or other mobile devices. E-learning is synonymous with *computer-based instruction*, *computer-based training*, *online education*, and other terms.

It appears in a variety of electronically supported learning and teaching activities, ranging from virtual classrooms to mobile conferences. E-learning includes a variety of methods of computer-facilitated learning ranging from self-study with DVDs to online degrees offered by universities. E-learning may also include the use of Web-based teaching materials and hypermedia, multimedia CD-ROMs, learning and teaching portals, discussion boards, collaborative software, e-mail, blogs, wikis, chat rooms, computer-aided assessments, educational animation, simulations, games, learning management software, and more.

An interesting school without classrooms is the Hellerup School in Denmark. Students there "learn by doing" and even determine the best way they can learn.

Advantages:

- **Education.** Students can learn at home and keep their regular jobs while in school. Busy homemakers can earn degrees.

• **Learning and training time reduction.** E-learning can expedite training time by up to 50%.

• **Cost reduction.** The cost of providing a learning experience can be reduced by 50–70% when classroom lectures are replaced by e-learning sessions. This includes reduced faculty cost, no classrooms, and less or no travel time.

Large number and diversity of learners. E-learning can provide training to a large number of people from diverse cultural backgrounds and educational levels, even though they are at different locations in different time zones. Large companies such as Cisco Systems, Inc. (**cisco.com**) provide online training courses to many employees, customers, and business partners.

• **Innovative teaching.** Ability to provide innovative teaching methods such as special engagements, interaction with experts, interaction with learners in other countries, and so forth.

• **Measurement and assessment of progress.** Ability to assess progress in real time, find areas of difficulties, and design remedial work.

• **Self-paced and motivation learning.** E-learning students usually are self-paced and self-motivated. These characteristics may result in higher content retention (25–60% higher than with traditional lecture-based training).

• **Richness and quality.** E-learning enables the use of top instructors as well as employing rich multimedia support. This may make learning more enjoyable. Difficult content can be made interesting and easy to understand. Overall, the quality of learning may increase.

• **Flexibility.** E-learners are able to adjust the time, location, content, and speed of learning according to their own personal schedules.

• **Updated and consistent teaching material.** It is almost impossible to economically update the information in textbooks more frequently than every 2 or 3 years; e-learning can offer real-time access to the most updated knowledge. Delivery of e-learning may be

more consistent than that of material presented in traditional classroom learning because variations among teachers and teaching materials are minimized.

• **Ability to learn from mobile devices.** This helps learning in any place and at anytime as well as providing support to learners by teachers and peers.

• **Expert knowledge.** In contrast with the knowledge of a single instructor in the classroom, e-learning may include the knowledge of several experts, each of whom prepares a teaching module in his or her area of expertise.

• **Fear-free environment.** E-learning can facilitate learning for students who may not wish to join a face-to-face group discussion to interact with peers or teachers.

Limitations:

• **Need for instructor retraining.** Some instructors do not have the knowledge to teach by electronic means and may require training, which costs money.

• **Equipment needs and support services.** Additional funds are needed (by the teaching institute) to purchase e-learning systems that supplement traditional ones. These are needed for e-learning creation, use, and maintenance.

• **Lack of face-to-face interaction and campus lifestyle.**

Many feel that the intellectual stimulation that takes place through interaction in a classroom

with “live” instructors and peers cannot fully be replicated with e-learning.

• **Assessments and examinations.** In the higher education environment, one criticism is that professors may not be able to adequately assess student work completed through e-learning. There is no way of knowing, for example, who actually completed the assignments or exams. (Nevertheless, the same is true for any homework done outside the classroom).

• **Maintenance and updating.** Although e-learning materials are easier to update than traditionally published materials, there are practical difficulties (e.g., cost, instructors’ time) in keeping e-learning materials current. The content of e-learning material can be difficult to maintain due to the lack of ownership of, and accountability for, website material. The developers of online content might not be those who update it.

• **Need for reliable wireline and wireless communication networks and devices.** Privacy needs to be protected as well as systems need to be secured.

• **Protection of intellectual property.** It is difficult and expensive to control the transmission of copyrighted works downloaded from the e-learning platform.

• **Student retention.** Without some human feedback and intervention, it may be difficult to keep certain students engaged and energetic.

Distance Learning and Online Universities:

The term **distance learning**, also known as *distance education*, refers to education where the teacher and students are in different locations. In such a case, the student is separated

from a classroom by distance and possibly time. Sometimes students meet once or twice at a physical location in order to get to know each other, meet the instructor or coordinator, or

take examinations. Distance learning is becoming widely used in universities and learning institutions around the globe. Major universities offer courses and degrees via this mode, which is becoming more recognized and acceptable.

Virtual Universities—Real Degrees

The concept of **virtual universities**, online universities where students take classes from home via the Internet, is expanding rapidly. Hundreds of thousands of students in many countries, from the United Kingdom to Israel to Thailand, are taking online classes. A large number of existing universities, including Stanford University and other top-tier universities, offer online education of some form; for example, MIT offers thousands of their courses online Millions of independent learners from all over the world (students, professors, self-learners) log on to the MIT Open Course Ware site each year. Some universities, such as University of Phoenix (**phoenix.edu**), National University (**nu.edu**), and the University of Maryland (**umuc.edu**), offer hundreds of courses and dozens of degrees online to students worldwide. Virtual Campus(**cvc.edu**) provides a directory and links to thousands of courses and online degree programs offered by colleges and universities in California

Online Corporate Training:

Like educational institutions, a large number of business organizations are using e-learning on a large scale. Many companies, such as Cisco Systems (**cisco.com**), offer online training. A study by the American Society for Training and Development found that nearly one-third of corporate training content was delivered electronically. Corporate training is driven by multiple factors and is often done via intranets and corporate portals. However,

the students use the Internet as well. It has several variations, one of which is *on-demand online training*, which is offered by software companies such as Citrix Systems (**citrix.com**).

Social Networks and E-Learning:

A new term, **social learning**, also known as *e-learning 2.0*, has been coined to describe the learning, training, and knowledge sharing in social networks and/or facilitated with social software tools. Social environments facilitate high-tech-based training, making it possible for learners to share their experiences with others. Thus, several companies already are using social media for training and development purposes

Some students use Facebook, LinkedIn, Pinterest, Twitter, and so forth to connect with other pupils. For example, learners can study together, discuss topics or brainstorm online.

Unfortunately, the distractions found on some networks can make it difficult to focus on learning. Some companies use social media to engage employees in group learning via

knowledge sharing.

Several social networks (or communities) are dedicated to learning and training (e.g., see **elearning.co.uk**). An example of a social network for learning is LearnHub (**learnhub.com**),

which is dedicated to international education. Some scholars believe that the future of e-learning is social learning.

Many universities combine e-learning and social networking; also, numerous professors have blogs and wikis for their classes and encourage communication and collaboration via Facebook.

E-Learning Management Systems:

A **learning management system** (**LMS**) (also known as a course management system) consists of software applications for managing e-training and e-learning programs including content, scheduling, delivery tips, and so forth.

*Provide effective student–instructor interactions.

• Centralize and automate program administration.

• Enable the use of self-service and self-guided e-learning services.

• Create and rapidly deliver learning content modules.

• Provide a single point of access to all e-learning online materials.

• Help manage compliance requirements.

• Consolidate training initiatives on a scalable Web-based platform.

• Support the portability of systems.

• Increase the efficiency and effectiveness of e-learning.

• Personalize content and enable knowledge reuse.

Many companies Saba Software, SumTotal Systems; provide methodologies, software, hardware, and consultation about e-learning and its management.

Electronic Books:

An **electronic book** (**e-book)** is a book in digital format that can be read on a computer screen, mobile device, or on a dedicated device known as an *e-reader*. A major event in

electronic publishing occurred in 2000, when Stephen King's book *Riding the Bullet* was published exclusively online. For $2.50, readers were able to purchase the e-book on Amazon.com and other e-book providers. Several hundred thousand copies were sold in a few days. However, hackers broke the security protection, copied the book and distributed free copies of the book online. Publishers of e-books have since become more sophisticated, and online publishing has become more secure. Today there are several types of e-books that can be delivered and read in various ways:

Via a dedicated reader. The book must be downloaded to an e-reader such as Amazon's Kindle.

• **Via Web access.** Readers can locate a book on the publisher's website and read it there. The book cannot be downloaded.

• **Via Web download and smart phones.** Readers can download the book to a PC.

• **Via a general-purpose reader.** The book can be downloaded to a mobile device such as an iPad or iPhone.

• **Via a Web server.** The contents of a book are stored on a Web server and downloaded for print-on-demand

Most e-books require some type of payment. Readers either pay before they download a book from a website, such as buying a Kindle copy on Amazon.com, or they pay when

they order the special CD-ROM edition of a book. Today, Amazon.com offers hundreds of thousands of e-books e-newspapers (including international ones), and other digital products. All are cheaper than the hard-copy version (e.g., new release books may cost $10 or less). There are many free e-books as well (e.g., **free-ebooks.net** and **onlinebooks.library.upenn.edu**).

Devices for Reading E-Books

The major device used to read an e-book is an e-reader. Most e-readers are lightweight (about 10 ounces) and are convenient to carry. The major e-readers and tablets are listed and compared at **the-ebook-reader.com**. Several other aids are available to help readers who want to read a large amount of material online. For example, Microsoft ClearType (**microsoft.com/typography/ClearTypeInfo.mspx**) and CoolType from Adobe (**adobe.com**) can be used to improve screen display, colors, and font sizes. Glowing screens can help you read in the dark (e.g., Kindle Touch and the Kindle Fire have a built-in light).

Unit 5

Digital Business Applications - II:

Online Travel and Tourism Services:

Online services are provided by many travel vendors. All major airlines sell their tickets online. Other services are vacation packages, train schedules and reservations, car rental agencies, hotels, commercial portals, and tour companies. Publishers of travel guides such as **tripadvisor.com** provide considerable amounts of travel-related information on their

websites, as well as selling travel services. TripAdvisor helped New Orleans hotels to attract more guests.

Example: TripAdvisor

TripAdvisor (**tripadvisor.com**) is the world's largest travel site. The company provides trip advice generated from actual travellers. This is a global site with more than 350 million visitors a month.

Characteristics of Online Travel: Online travel services generate income from commissions, advertising fees, lead-generation payments, subscription fees, site membership fees, etc. With rapid growth and increasing success, the online travel industry is very popular, although online travel companies cite revenue loss due to fraud as their biggest concern. Consumers themselves can fall prey to online travel fraud. However, competition among online travel e-tailers is intense and has low margins. In addition, customer loyalty and difference in prices make it more difficult to survive. Thus, guaranteed best rates and the provision of loyalty programs are becoming a necessity. Three important trends will drive further changes in the online travel industry. First, online travel agents may try to differentiate themselves by providing superior customer service. Second, they provide easy search capabilities (e.g., for best prices). Third, online travel companies are likely to use social media tools to provide content to travellers and would-be travellers

Benefits:

The benefits of online travel services to travellers and travel providers are extensive. The amount of free information is voluminous and is accessible at any time from any place. Shoppers can find the lowest prices. Travel providers also benefit by eliminating commissions and selling otherwise-empty spaces. Finally, processing fees are reduced.

Limitations: First, complex trips are difficult to arrange and may not be available on some sites because they require complicated arrangements. Therefore, the need for travel agents as intermediaries remains, at least for the time being.

Competition in Online Travel Services:

The competition in online travel is intense. In addition to well-known pure players such as Expedia (**expedia.com**), Priceline (**priceline.com**), and Hotels.com (**hotels.com**), there are thousands of travel-related sites online. Many service providers have their own sites, related websites advertise travel sites, and tourist guides sell services or direct users to them. In such a competitive environment, online businesses may fail.

Corporate Travel:

The corporate travel market is huge, and its online portion has been growing rapidly in recent years. Corporations can use all the online travel services mentioned earlier where they may receive special services. Companies can enable employees to plan and book their own trips to save time and money. Using online optimization tools provided by travel companies, such as those offered by American Express (**amexglobalbusinesstravel.com**), companies can try to reduce travel costs even further. Expedia via Egencia Trip Navigator (**egencia.com**), Travelocity (**travelocity.com**), and Orbitz (**orbitzforbusiness.com**) also offer software tools for corporate planning and booking. TripAdvisor for Business (**tripadvisor.com/Owners**) provides information to the tourism and hospitality industries. TripAdvisor Trip Connect offers a way for businesses to compete for bookings and generate new business by bringing visitors directly to their online booking pages.

E-Employment: The online job market connects job seekers with potential employers. An online job market is now very popular with both job seekers and employers. In addition to job ads posted online and placement services available through specialized websites (such as **careerbuilder.com**), larger companies are building career portals on their corporate websites as a way of reducing recruitment costs and expediting the time to fill vacancies. Advantages of the online job market over the traditional are:

Traditional versus online job markets

Characteristic	Traditional job market	Online job market
Cost	Expensive, especially in prime space	Can be very inexpensive
Life cycle	Short	Long
Place	Usually local and limited if global	Global
Context updating	Can be complex, expensive	Fast, simple, inexpensive
Space for details	Limited	Large
Ease of search by applicant	Difficult, especially for out-of-town applicants	Quick and easy
Ability of employers to find applicants	May be very difficult, especially for out-of-town applicants	Easy
Matching of supply and demand	Difficult	Easy
Reliability	Low, material can get lost in mail	High
Communication speed between employees and employers	Can be slow	Fast
Ability of employees to compare jobs	Limited	Easy, fast

Online Job Market:

The Internet offers a comprehensive and large environment for job seekers and for recruiters. Nearly all Fortune 500 companies now use the Internet for some of their recruitment activities. Online resources are the most popular recruitment option for many companies. Since 2000, online job recruitment revenues and volume significantly overtook print ad classifieds. Tens of thousands of job-related sites are active in the United States alone. Note that many sites provide free lists of available positions. The U.S. market is dominated by several major players, especially as Monster acquired Yahoo! HotJobs and

CareerBuilder. However, socially oriented sites such as Craigslist, LinkedIn, Twitter, and Facebook are becoming very important online recruitment sites

Social Networks Based Job Markets:

58% of recruiters agree that social networking is the "next big thing" in recruiting. Specifically, 86% already use LinkedIn, 51% use Facebook, and 27% use Google+. over 31% of job seekers had found jobs using social media. Facebook has many features that help people find jobs and help employers find candidates. One such feature is Jobcast (**jobcast.net**), which is an app for companies to place on their Facebook page to recruit candidates. The app, which has different types of plans (free and paid), offers social sharing to LinkedIn and Twitter, as well as to Facebook. Their app on Facebook is for job seekers and employers to connect, and they also have interesting articles regarding the job market. Another way for employers and job seeke rs to connect via Facebook is through a company called Find Employment which also offers tips and suggestions for job seekers. A similar service is provided by **linkedin.com/jobs**. Craigslist, for example, claims more than one million new job listings every month. The LinkedIn search engine can help employers find appropriate candidates quickly. Job *referral social networking* sites solve the need for finding the right people for the job (e.g., **jobster.com**). These sites provide job seekers opportunities to promote themselves and their areas of expertise, as well as help them be discovered by employers. The site's algorithms enable headhunters to analyze qualified applicants by different criteria. When a job offer is made, the job referral site receives referral fees. Lately, the use of Twitter as an aid for job searches has increased. A strategy for job seekers and for how to use Twitter to access recruiters and increase job seekers' visibility.

Global Online Portals for Job Placement: The Internet is very helpful for anyone looking for a job in another country. An interesting global site for placing/finding jobs in different countries is xing.com. The electronic job market may increase employee turnover and its costs. Finally, recruiting online is more complicated than most people think, mainly because there are so many résumés online. To facilitate recruitment, top recruiters are seeking the benefits of using new tools like video conferencing to interview and connect with candidates from remote locations.

Social Recruiting

Finding qualified employees in certain fields may be a difficult task. To accomplish this task, companies pay considerable fees to executive recruiters or third-party online companies.

If job seekers are online and active in their search and in posting their résumés, there is a good chance that they will be discovered by recruiters. In addition, many so-called passive

job seekers are employed and are not actively looking for a new job. Therefore, it is important that both active and passive job seekers maintain a *profile* online that present them in a positive light, especially on LinkedIn and Facebook.

Both recruiters and job seekers are moving to a new recruiting platform—the online social networks—mostly LinkedIn, Facebook, and Twitter (**twitjobsearch.com**), a job search engine that allows employers to post job ads on Twitter. Enterprise recruiters are scanning online social networks, blogs, and other sources to identify and find information about potential employees.

Clearly, the electronic job market has benefits, but it can also create high turnover costs for employers by facilitating employees' movements to look for better jobs. In addition, finding candidates online is more complicated than most people think, mostly due to the large number of résumés available in social media sites. To facilitate recruitment, top recruiters are using electronic aids, like interviewing candidates by video from remote locations. Recruiters use social media tools and multiple social networking sites to find candidates faster. Some recruiters send Facebook "friend" invitations to candidates whom they have interviewed. However, this can be a controversial practice due to ethical implications.

Facebook has many features that help people find jobs (see **jobcast.net** for jobseekers and employers to connect; Social Jobs Partnership (**facebook.com/socialjobs**, a collaboration

between Facebook and the U.S. Department of Labor.

LinkedIn provides a similar service. LinkedIn's search engine can help employers quickly find an appropriate candidate. For finding employees (jobs) in other countries, one can use LinkedIn or Xing (**xing.com**). An interesting global recruiting community is EURES (**ec.europa.eu/eures**), which specializes in online recruiting in Europe. Lately, there has been an increased use of mobile recruiting tools in general and Twitter in particular, as aids for people who are searching for jobs.

Virtual Job Fairs and Recruiting Events

Virtual job fairs are other new strategies for quickly finding qualified candidates at a reduced cost. These are done using special vendor sites (e.g., **on24.com**, **expos2.com**, and

azencareerist.com), or employers' websites.

Examples:

• IBM needed qualified employees for leadership positions in Africa. To quickly attract qualified employees, it used ON24 to conduct a job fair.

*P&G of Western Europe conducts annual virtual recruiting conferences using INXPO platform. The event is successful, and it is used as a model for other European companies. The state of Michigan periodically conducts virtual career fairs where job seekers and recruiters meet

online.

Benefits of the Electronic Job Market:

Advantages of the electronic job market for job seekers and employers

Advantages for job seekers	Advantages for employers
Can discover a large number of job openings	Can reach a large number of job seekers
Can communicate directly and quickly with potential employers	Can reduce recruitment costs
Can market themselves quickly to appropriate employers (e.g., quintcareers.com)	Can reduce application-processing costs by using electronic application forms
Can post résumés for large-volume distribution (e.g., at careerbuilder.com)	Can provide greater equal opportunity for job seekers
	Opportunity of finding highly skilled employees who match the job requirements
Can search for available positions any time	Can describe positions in great detail
Can obtain several support services at no cost (e.g., careerbuilder.com and monster.com provide free career-planning services)	Can interview candidates online (e.g., using video teleconferencing)
Can determine appropriate salaries in the marketplace (e.g., use salary.com and rileyguide.com; look for salary surveys)	Can arrange for testing online
	Can view salary surveys for recruiting strategies
Can learn how to behave in an interview (greatvoice.com)	
Can access social network groups dedicated to electronic job markets	Can use existing staff to refer applicants

Limitations of the Electronic Job Market:

Posted résumés and employer employee communications are usually not encrypted. Thus, confidentiality and data protection cannot be guaranteed. It is also possible that someone at a job seeker's current place of employment (e.g., his or her boss) could find out that that person is job hunting. LinkedIn, for example, provides privacy protection, enabling job seekers to determine who can see their résumé online.

E-Health:

Definition: The *World Health Organization* (WHO) defines e-health as follows:

E-health is the transfer of health resources and health care by electronic means. It encompasses **three** main areas:

• The delivery of health information, for health professionals and health consumers, through the Internet and telecommunications.

• Using the power of IT and e-commerce to improve public health services, (e.g., through the education and training of health workers).

• The use of e-commerce and e-business practices in health systems management.

Electronic Medical Record Systems (EMR)

One of the earliest applications of e-health was the electronic medical record system. The objective was to enable accessibility to patient medical records from any location, even from other cities and countries. With the spread of the Web, this application is growing rapidly. For example, one of the authors can see the results of all his blood tests and certain medical records from any place at any time, on the Web. In some progressive hospitals, a doctor can pull the medical records whenever he or she needs to see them. One problem is the protection of privacy and assuring the appropriate use of data. In addition, there is an issue of accessibility to the medical records of patients by researchers.

Doctors' System:

Today doctors have immediate access to patient records. They can place orders directly to testing facilities (both internal and external). They can order medications directly from pharmacies, contact specialists, discharge patients in remote locations, and review results of tests from faraway locations.

Patients Services:

Large numbers of patients' services are available today due to advances in electronic medical record applications. Scheduling appointments from home and reading results of

tests from anywhere and anytime are common. Patients enjoy better care due to the availability of Wi-Fi networks that enable fast access to information by providers. Patients can find a vast amount of information on hundreds of websites such as WebMD.com. They enjoy the advancements in medicine due to computerized systems.

Medical Devices and Patients Surveillance:

Large numbers of EC medical devices are used in the health industry. Some of the most well-known ones are robots that help in surgeries, sensors that monitor vital signs of patients

and the location of handicapped patients. Considerable use of telecommunication is evidenced in medical facilities. Known as *telematics*, telemedicine information technologies are used to diagnose and treat diseases from the distance (e.g., in rural areas that has no

doctors). A futuristic area is that of the *Internet of Things*, where many medical devices and sensors will be combined for new medical treatments.

Entertainment, Media & Gaming:

Service Industry Consumer Applications:

A large number of mobile applications are used in different service industries. Here are **two** examples.

Healthcare

Mobile devices are everywhere in the field of healthcare, as illustrated next:

• Using a handheld device, a physician can submit a prescription directly to participating pharmacies from her office or patient bedside. In addition, your physician can order tests, access medical information, scan billable items, and check costs and fees for services.

• Remote devices not only monitor patient vital signs while he/she is at home, but also can adjust operating medical equipment. This is done by using sensors.

• To reduce errors, mobile devices can validate the managing, tracking, and verifying of blood collected for transfusions.

Hospitality Management

Many applications exist from travel reservations to ensuring safety in hotel rooms. Examples are: two-way radio communication, wireless hotspot solutions, food safety checks, parking lot management, asset location and management, guest services, safety and security on the premises, entertainment, inventory management, and much more. One area in hospitality that benefits from a wireless system is restaurant operations.

Example: Dolphin Fast Food

Dolphin Fast Food Inc. operates 19 Burger King franchises in Minnesota. The company uses a wireless system to streamline operations, control costs, increase staff and customer satisfaction, and comply with regulations. The system includes free Wi-Fi access both in the restaurants and in a corporate management wireless network. The company realized that customers can use their mobile devices while waiting and during dining. Managers use

mobile devices to increase effectiveness. The wireless system is also used to improve security on the premises (e.g., video surveillance). The secure Internet access is protected by a VPN and it can block inappropriate content. The wireless system also operates the payment gateways and the POS terminals.

Digital Products:

Certain goods, such as software, music, or news stories, can be distributed in physical format (such as hard copy, CD-ROM, DVD, and newsprint), or they can be digitized and delivered over the Internet. Online delivery is much cheaper and saves sellers storage room, handling, and distribution costs.

Internet TV and Internet Radio:

Internet TV

Internet TV is the delivery of TV content via the Internet by video streaming technologies. The content includes TV shows, sporting events, movies, and other videos. Several video-on-demand and subscription services, such as **netflix.com**, **hulu.com** as well as Amazon Prime Video offer this service. Apple TV (**apple.com/appletv**), Roku (**roku.com**), Google Chromecast (**google.com/intl/en/chrome/devices/chromecast**), and so forth. In order to compete with other channels, traditional channels have developed an online presence, such as HBO (**hbo.com**).

Internet Radio:

Internet radio refers to audio content transmitted live via the Internet. It is a broadcasting broadcasting service that enables users to listen online to thousands of radio stations (e.g., over 4000 in Europe, see **listenlive.eu**). The service can broadcast anything that is on the radio stations plus broadcasts from organizations, governments, and even individuals Internet radio has the same copyright issues as those of Internet TV. Note that, in many cases, there is an agreement between the content creators and the distributors (e.g., Warner Music and Apple reached an iTunes Radio deal in 2013.

Social Television (TV) (84):

Social TV is an emerging social media technology that enables several TV viewers who are in different locations to interactively share experiences such as discussions, reviews, and recommendations while watching the same show simultaneously. The communication can be done via texting in social networks, smartphones, tablets, etc. Social TV combines broadcast television programs and user-generated content with rich social media.

Characteristics of Social TV

Social TV has several unique characteristics:

• The possibility of discovering new video content and sharing this discovery with friends.

• Most social TV activities are done in real time by watching content and commenting on it to others, even if the viewers are in different locations.

• Social TV allows people to connect in a unique way, with other people who share the same

interests. Social TV is attracting an ample number of viewers.

Mobile Entertainment:

Mobile entertainment applications have been around for years, but only recently they have expanded rapidly due to developments in wireless devices and mobile technology. Consumer applications started in the 1990s, but really soared after 2000.

Mobile Marketing:

Mobile Shopping: Online shopping can be easier when done from your smartphone or tablet. Many apps for iPhones facilitate advertising and shopping. For example, you can download the Costco Mobile App for easy coupon redemption (**costco.com/costco-app.html**). A popular app in Facebook is its “stores.” There are tens of thousands of stores on Facebook.

Example: Delta Airlines

Delta offers in-flight Wi-Fi connection on many of its flights (called *Delta Connect*). With Delta Connect, there is free access to many shopping and entertainment sites, including eBay. For a nominal fee, you can purchase a Wi-Fi Mobile Pass and be able to connect to

the Internet via your smartphone, and send and receive mobile messages, check your e-mail, and browse the Web.

In addition, consumers use mobile devices to locate stores, compare prices, and place orders. For example, Chinese consumers can make purchases from inside WeChat. China's largest e-tailers, Taobao and T.mall offered special discounts in order to encourage shoppers to buy from their smartphones.

Mobile Streaming Music and Video Providers:

Since 2001, Apple has offered consumers the ability to download songs and videos from the Apple iTunes store. iTunes customers purchase billions of songs annually. Other major Internet music providers are **spotify.com**, **youtube.com**, and **pandora.com**.

Entertainment in Cars:

Entertainment is coming to cars directly from the Internet. Apple announced that it is teaming up with a major car maker for its *CarPlay* system. The system enables iPhones to plug into cars so drivers can request music with voice commands or with a touch on a vehicle dashboard screen.

Future opportunities include car diagnosis, driver health monitoring, usage-based insurance, and even parental alerts. Some car brands already provide communication, telematics, social networking, and mobile commerce.

Gaming - Mobile Games:

A wide range of mobile games have been developed for different types of players. The vast majority of players use smartphones. Many computer games can be played on mobile devices.

- **Technology.** Embedded, SMS/MMS, Web browsing, J2ME, BREW, native OS
- **Number of players.** Solo play or multiplay
- **Social network-based.** Using smartphones, people can play games available in social networks, such as FarmVille on Facebook.

Example: pocketgamer.biz.

Social Games and Gasification:

A **social game** is a video multiplayer game played on the Internet, mostly in social networks or in virtual worlds. Gamers can play against computers or against each other. Many social

games are "massively" multiplayer online games (known as MMOG or MMO), which are capable of supporting hundreds to many thousands of players simultaneously. MMOG players can compete, collaborate, or just interact with other players around the globe. Many game consoles, including the PSP, PlayStation 8, Xbox 860, Nintendo DSi, and Wii can be played on the Internet. Additionally, mobile devices and smartphones based on such operating systems as Android, iOS, webOS, and Windows Mobile are seeing an increase in the number of MMO available games. Social games are very popular.

Games on Social Networks

A **social network game** is a video game that is played in social networks, and usually involves multiplayers. Social (network) games may have little or nothing to do with how *social* the games are played. However, some games have social elements such as educating the public, gift-giving, and helping other or sharing playing strategies.

Example: Popular Games on Facebook

Players can choose from several thousands of games on Facebook. Some games are played by 50–150 million people each. The most popular games each attract tens of millions of players. Facebook's list of popular games includes Candy Crush Saga FarmVille, FarmVille 2, CityVille, Bejeweled Blitz, Pet Rescue Saga, Criminal Case, Texas HoldEm Poker, Words with Friends, and Bubble Safari.

Representative major Facebook developers for games are King, Zynga, Social Point, and Pretty Simple.

The Business Aspects of Social Games

To understand the variety of games and their properties and commercial possibilities, we suggest you watch the video "Social Media Games: Worldwide Gamification Is the New Paradigm for Life and Business" at **youtube.com/watch?v=xCWsgBHY_VU**. The video presents opportunities for advertising, marketing, and training, among others. Also, visit the site of Zynga (**zynga.com**), a major vendor in the field. Electronic Arts, a Zynga competitor, has some games that generate three to five times more per game. Both companies have gone mobile.

Educational Social Games:

Games can also be educational as the following examples show. Environmental apps for adults and kids (e.g., for tablets) can be found at **ecogamer.org/environmental-games.**

Example 1: Pollution Reduction Game

Example 2: Economic and Finance Game—Empire Avenue

Mobile Gambling:

Mobile gambling requires two-way financial transactions. Online gambling sites face major trust issues. Gamblers and bettors have to believe that the site is trustworthy and fair. Finally, while the legislative and regulatory picture is very restrictive, it is also unclear and keeps changing. Online gambling is booming despite the fact that it is illegal in almost all U.S. states.

Mobility and Sports

There are many sports mobile applications. Some representative examples of unique sports mobile applications:

• Nike and Apple introduced an iPod shoe called Nano (a best seller), which can calculate how many calories are burned during workouts. This is done via wireless sensors. In addition to calories burned, users can get information about the distance they run. The data collected by the sensors are transmitted to the runner's iPod and headphones. In addition, the Nike+iPod system delivers music and voice entertainment, including podcasts on different sports topics.

• Personalized live sport events can be viewed on mobile devices. The user can select the event to watch.

• ESPN's SportsCenter offers WatchESPN, is a system where subscribers can watch ESPN on a desktop or on a mobile device.

• Eventbrite **eventbrite.com** is a company that provides several applications for event management online (e.g., creating tickets, promoting events, managing event entry).

Social Entertainment:

A large number of social networks are fully or partially dedicated to entertainment. Well-known examples in 2016 are Vimeo, Netflix, and MySpace. MySpace has a licensing agreement with Sony BMG and other large media companies that gives its members free access to streaming videos, music, and other entertainment.

Examples:

Mixi

In Japan, Mixi, Inc. (**https://mixi.co.jp/en/**) is a highly visited social networking service even though users must be invited to join. Mixi's goal is to allow users to build friendships with other users who share common interests. The site has about 27 million members and over 1 million small communities of friends and interests. Mixi is going global, while Facebook is overtaking it in Japan.

Last.fm

Last.fm (**last.fm**) is not just an Internet radio station. It is considered an online music catalog with free music streaming, videos, lyrics, etc. It also recommends music to its listeners. Musical profiles are constructed when users listen to a personal music collection with a Last.fm plug-in or when they listen to the Last.fm Internet radio service. Regular membership is free; premium membership is $3 per month. The site, which operates in 12 major languages, won the Digital Music Award for Best Music Community Site.

Web Series and Streaming Movies

Web series are similar to episodic series on TV. The number of Web series is increasing, and some are already available on DVD. Examples include *Hemlock Grove, House of Cards, and Johnny Dynamo*.

Hulu

Hulu (**hulu.com**) offers advertisement-supported streaming on-demand videos of TV shows and movies from NBC, Fox, Disney and other networks and studios. Due to copyright laws, Hulu offers videos only to users in the United States and a few other countries. Hulu provides video in Flash video format. In addition, Hulu offers some TV shows and movies in high definition in a manner like Google Sites, Fox Interactive Media, and Yahoo! Sites. Users can manually share videos they like on their Facebook pages by using the "Facebook" button. It is not necessary to connect their Hulu and Facebook accounts to do this. Hulu is one of the most popular Internet video sites. Hulu offers some of its services free, supported by advertising. It also offers Hulu Plus, which includes premium shows and the ability to watch on more devices for a monthly fee of $8.99.