UNIT 1 E-COMMERCE: EVOLUTION, MEANING AND TYPES

Structure

1.1 INTRODUCTION

Electronic commerce is a process, which is happening with the help of Information and Communication Technologies. In order to see its evolution it is important to see how commerce itself evolved over a period of time.

1.2 OBJECTIVES

After studying this unit, you should be able to:

- define the term e-commerce and make a distinction between e-commerce and e-business;
- explain how e-commerce is a commercial transaction;
- make a nexus between e-commerce and the World Trade Organization;
- explain the different models of e-commerce; and
- analyse the future of e-commerce.

1.3 E-COMMERCE EVOLUTION

As the society evolved the commercial practices also evolved. The barriers to trade were broken chiefly by the language and later by transport. The barter trade gave way to acceptance of bullion as the trading currency. With the passage of time nation states emerged as new political units and with new technological developments, like telegraph and telephone further facilitated the trade. For over a century these telecommunication devices became an integral part of the commercial enterprises all over the world.

Later, in the early 1960s, computers were increasingly used to disseminate information across geographical space. Though telegraph, telephones, telex and facsimile were still the relied upon options, nevertheless the big corporations opted for Electronic Data Interchange (EDI). It refers to the process by which goods are ordered, shipped, and tracked computer-to-computer using standardised protocol. EDI[1] permits the "electronic settlement and reconciliation of the flow of goods and services between companies and consumers". EDI saves money because the computer, and not an office staff, submits and processes orders, claims, and other routine tasks.

EDI began in the 1960s as a computer-to-computer means of managing inventory, bill presentment, shipment, orders, product specifications, and payment. EDI is made possible because trading partners enter into master agreements to employ electronic messaging permitting computer-to-computer transfers of information and validating computer-to-computer contracts.[2]

The early adopters of EDI were companies running complex operations in the airlines, shipping, railways and retail sectors. These companies developed their own proprietary format for interchanging data messages. It led to development of proprietary systems. These proprietary systems whether of a retail or automobile company were operation specific. It was felt that a universal standard was impractical and unnecessary. Consequently, the lack of universal standards made it difficult for companies to communicate with many of their trading partners.

In late 1970s, the American National Standards Institute (ANSI) authorized a committee called the Accredited Standards Committee (ASC) X-12 (consisting of government, transportation, and computer manufacturers) to develop a standard between trading partners. The standard was called ANSI X-12. Over a period of time sectors like paper, chemical, warehouse, retail, telecommunications, electronics, auto, metals, textile, and aerospace developed and started using sector specific EDI standards, which are subset of X12 standards.

Under the aegis of United Nations, organizations from different sectors collaborated and developed an internationally approved standard structure for transmitting information between different trading partners, called the United Nations Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) in 1986. It ensures transmission compatibility of electronic business documents globally. In the US companies tend to use ANSI X-12 protocol while their European counterparts prefer EDIFACT. Moreover, various industry sectors use their industry-specific protocols.

The EDI was like a business-to-business (B2B) model involving a company and its various vendors performing commercial transactions using proprietary networks. By late 1980s computers acquired the status of 'personal computer', i.e. became part of the private domain of an individual. It was EDI at the individual level supported by the public networks known as Internet.

Hence, e-commerce evolved out of EDI and should be considered as a next logical step in the development of commercial processes involving commercial transactions. Thus e-commerce means doing business electronically across the extended enterprise. It covers any form of business or administrative transaction or information exchange that is executed using any information and communications technology.

Narrowly put, e-commerce is limited to specific initiatives, such as sales via the Internet, electronic procurement, or electronic payment.

Please answer the following Self Assessment Question.

Self Assessment Question 1 *Spend 3 Min.*

Trace the evolution of E-commerce.

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1.4 DEFINING E-COMMERCE

It is important to note that phrases, like 'e-business', 'e-commerce', Internet business, Net commerce etc. are commonly being used these days. Thus for the sake of clarity e-commerce should be distinguished from e-business. In fact, e-commerce is a subset of e-business.

1.4.1 Difference between E-commerce and E-business

E-business refers to all aspects of a business where technology is important. This may include knowledge management, design, manufacturing, R&D, procurement, finance, project planning, human resource planning and the related activities. E-commerce is that part of e-business that relates directly to sales & marketing. That is, e-commerce is part of the all-encompassing world of e-business.

E-business is a wider concept that embraces all aspects of the use of information technology in business. It includes not only buying & selling but also servicing customers and collaborating with business partners and often involves integration across business processes & communication within the organization.

1.4.2 E-commerce Definitions

As the Internet makes way for new business transactions via its complex telecommunications network, it is difficult to provide a single all encompassing definition of e-commerce. It means different to different people. Thus it would be prudent to look into various definitions of e-commerce to comprehend e-commerce and its different characteristics:

1.4.2.1 E-commerce: A Commercial Transaction

E-commerce defined simply, is the commercial transaction of services in an electronic format. In general terms, e-commerce is a business methodology that addresses the needs of organizations, traders and consumers to reduce costs while improving the quality of goods and services and increasing the speed of service delivery. It refers to all forms of transactions relating to commercial activities, including both organizations and individuals that are based upon the processing and transmission of digitized data, including text sound and visual images. A broad definition of e-commerce is: "The marketing, promoting, buying & selling of goods electronically, particularly via the Internet", which encompasses, *interalia*, "e-tailing (virtual shop fronts), EDI, which is B2B exchange of data; e-mail & computer faxing; [and] B2B buying and selling[3]".

A narrower definition is "the trading of goods and services in which the final order is placed over the Internet". The Office of Tax Policy at the US Department of Treasury defines e-commerce most broadly as any transaction that occurs with the facilitation of electronic "tools and techniques". The Internet Tax Freedom Act (ITFA), 1998, on other hand provides the only legal definition of e-commerce as "any transaction conducted over the Internet or through Internet access, comprising the sale, lease, license, offer or delivery of property, goods, services or information, whether or not for consideration, and includes the provision of Internet access". The US Census Bureau measures e-commerce by looking at "the value of goods and services sold online whether over open networks such as the Internet, or over proprietary networks running systems such as EDI[4]".

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

The Gartner Group[5] defines e-commerce as an evolving set of:

(a) Home-grown or packaged software applications that link multiple enterprises or individual consumers to enterprises for the purpose of conducting business.

(b) Business strategies aimed at optimizing relationships among enterprises and between individuals and enterprises through the use of information technologies.

(c) Business processes (such as procurement or selling or order status checking or payment) that, by definition, cross boundaries, and

(d) Technologies and tools that enable these applications, strategies and processes to be implemented and realised.

1.4.2.2 E-commerce & WTO

Interestingly, the World Trade Organization (WTO) Ministerial Declaration[6] on E-commerce defines e-commerce as "the production, distribution, marketing, sales or delivery of goods and services by electronic means". The six main instruments of e-commerce that have been recognised by WTO are telephone, fax, TV, electronic payment & money transfer systems, EDI and Internet. In other words, e-commerce can be conducted over telephones, fax machines, automatic teller machines (ATMs), electronic payment systems such as prepaid telephone cards, electronic data interchange (EDI), television and the Internet. That means activities like, booking an order over telephone, sending invoices over fax, ordering from shopping networks as advertised on TV etc. amount to indulging in e-commerce activities.

It is laudatory on the part of WTO to have provided a very wide definition of e-commerce; it is understandable as WTO member consists of developed, developing and the least developed countries (LDCs).

The growing importance of electronic commerce in global trade led the Members of the WTO to adopt a declaration on global electronic commerce on 20 May 1998 at their second Ministerial Conference in Geneva, Switzerland. The declaration directed the General Council of the WTO to establish a comprehensive work programme to examine all trade-related issues arising from electronic commerce, and to present a report on the progress of the work programme at the third Ministerial Conference of the WTO. The declaration setting up the work programme included the statement that "Members will continue their current practice of not imposing customs duties on electronic commerce". The work programme was adopted by the WTO General Council on 25 September 1998. Subsequently, under the auspices of the General Council on June 15, 2001, WTO Members Governments identified three types of transactions on the Internet:

- Transactions for a service, which is completed entirely on the Internet from selection to purchase and delivery.
- Transactions involving "distribution services" in which a product, whether a good or a service, is selected and purchased on-line but delivered by conventional means.
- Transactions involving the telecommunication transport function, including provision of Internet services.

That is, the stress is on using low cost technology application, i.e. Internet for managing and facilitating the entire chain of commercial processes. Web makes it possible to dispense with the normal value chain for retailing, through direct sales by manufacturing to consumers. It can create new points on the value chain, such as Internet portals that act as shopping malls or aggregators that offers a new way of amassing buying power.

Please answer the following Self Assessment Question.

Self Assessment Question 2 *Spend 3 Min.*

What are the different modes by which e-commerce be conduced?

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1.5 TYPES OF E-COMMERCE MODELS

Regardless of how narrowly or broadly e-commerce is defined, e-commerce occurs in various forms and between various entities in the market. It is necessary to consider the various forms that Internet commerce embodies in order to understand the implications for taxation. E-commerce can be categorised in four ways: (1) business to business (B2B); (2) business to consumer (B2C); (3) consumer to business (C2B); and (4) consumer to consumer (C2C).

Table 1: E-commerce Models Matrix

	Business	Consumer
Business	B2B www.vendome.niit.com	B2C www.indiatimes.com
Consumer	C2B www.makemytrip.com	C2C www.ebay.in

These models represent 'online' commercial transactions and are comparable to their 'offline' counterparts. In other words, all these online models have adopted the functionalities of 'brick and mortar' (offline) companies and are being identified as 'click and mortar' companies. Clicks have replaced the bricks for faster, efficient and effective commercial transactions. Take a case of Dell computers. One can purchase a Dell computer or a server by visiting the site: www.dell.co.in and clicking on the desired computer or server configuration. Dell computers cannot be purchased from physical shops. One has to visit its site to purchase. Dell in a way has done away with bricks in favour of clicks.

Moreover, these new business models are creating immense economic value by offering huge variety of products and service online. Amazon offers 57 times as many titles as a typical large bookstore stocks. This is often referred to as "long-tail" phenomenon: books that once lacked a market can be shifted at any time off Amazon's virtual shelves. It has been estimated that in 2000 the value of online sales of books that were not available at a typical bookstore was $ 578 million.

1.5.1 Business-to-Business (B2B)

It is a new name given to EDI. As the name suggests, it is a business platform involving two independent or even dependent business entities. In B2B version of online transaction(s) the manufacturing organization takes a lead in setting up a business platform. This platform acts a business communication channel between the manufacturing/software developer entity and its vendors/suppliers, i.e., whatever was being done earlier in offline manner are now being done online. This may include registration of vendors, invitation of quotations, negotiations, price settlement, contract finalisation, procurement, cargo tracking, and payments – online. Thus a B2B platform acts as a business facilitator, negotiator and dealmaker, which facilitates, negotiates and clinches deal between independent or dependent business units.

1.5.2 Business-to-Consumer (B2C)

It refers to a business platform, involving a business entity and consumers. It is a retail version of e-commerce known as *e-tailing*. Selling goods or services through web based shops. It is the most popular model of e-commerce as it has helped moving commercial transactions from public domain to private domain. B2C is about creating a better offline shopping experience – online.

It has benefit for both the business entity and consumer. E-tailing is a cheaper option as it is cheaper to set up a single website and warehouse combination than operate a chain of shops. From the point of consumer benefits are in the form of convenience, wider choice and time saver. From the consumer's point of view, online shopping is a great leveler. One can shop at any time (24×7), from anywhere, i.e. all consumers are to be treated equally online. It has made shopping a great fun!

1.5.3 Consumer-to-Business (C2B)

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

Interestingly, its major success has come by the adoption of this model by the business entities – mainly the manufacturers. This process of reverse auction has resulted into major savings for the manufacturers, as suppliers bid for the purchase orders, offering discounts in the process.

1.5.4 Consumer-to-Consumer (C2C)

It represents a consumer business platform, which is for the consumer, by the consumer. It is referred to as online 'consumer-to-consumer' auctions. Almost anything can be offered on such online platforms. A buyer who wants a particular item enters the maximum amount he is prepared to pay. This remains a secret to other bidders while auction site's computers monitor the bidding. Highest offer is accepted until the end of auction. Highly popular online auction sites, like eBay also provides services where bidders may even check the reliability of a seller, how he has been rated by other buyers by reading comments left by people who have done business with him before. Once a bid has been won, the two sides contact each other, the buyer pays and the seller sends the goods. Payments can be made online as well. PayPal[7], an online payments company supports eBay buyers. This is an improvement over traditional selling or auction processes in terms of convenience and volume of goods being auctioned.

To begin with, these models were nothing but the online version of successful offline businesses. Apart from these 'pure' business models, some 'necessity' business models have also occupied Internet space. These business models occupy the 'niche service' areas. For example, Yahoo! Hotmail, Rediff, AOL etc. fulfill the need of an electronic post office; search engines providing directory services; and government websites for facilitating better government-to-citizen or government-to-business interface[8].

Interestingly, with the passage of time these online models have also matured. A B2C model is no longer a 'business-to-consumer' model, it is integrating functionalities of other models like C2C or C2B also. It is far easier for a website that is successful at selling one product to branch into others. For example, Amazon has moved from selling books only to selling sea foods and other products as well. It is now hosting auctions, and courting eBay traders. Similarly, eBay is no longer a C2C platform but is also selling goods at fixed price, like e-tailer, B2C. Online market place is more dynamic and ready for all kinds of innovation. Yahoo! has made so many recent changes to its business that it is being called "the new google", while Google is using it's advertising formula to steer specialist buyers straight to specialist online sellers.

Online businesses have to keep on reinventing themselves to remain successful. E-entrepreneurs have to have an open mind about the future. In a way, the Internet has opened up opportunities to be very creative in the design of the business model. The success of e-commerce models is built around managing supplies, partners and customers effectively and efficiently. E-commerce is more customers oriented than its offline counterpart. The offline world was one where producers said to customers: "I have made this; buy it from me at this price". In the online world, customers are saying, "I want this; sell it to me at this price".

Online world allows things like customer aggregation & auctions to be done in ways that are impossible in the physical world. Internet as a strong price-deflation mechanism: raising your prices is harder when your customers instantly compare them with everyone else. Price & product comparisons have been made easier by the development of "shopping bots". Websites like, Mysimon.com & Dealpilot.com enable buyers quickly to compare products, prices and availability.

Please answer the following Self Assessment Question.

Self Assessment Question 3 *Spend 3 Min.*

Mention the different models of E-commerce.

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1.6 E-COMMERCE: THE FUTURE

E-commerce is growing. It is a reality and part of everyday life. Economies of scale and scope are also easier to obtain online than offline. The biggest boost of e-commerce over the next few years will come not from snazzier websites or snappier marketing but from the proliferation of broadband Internet connections. Mobile phones and a host of other electronic devices are now being hooked to the web, ousting the personal computer from its monopoly position in providing Internet access.

As desktop (PC) access will increasingly migrate to the mobile environment, it would be more of m-commerce (mobile commerce) than e-commerce. Technological advances would make the commercial transactions further personalised. And as the numbers of customers who shop, grow, the business will scale, bringing in a lower cost structure.

Let us now summarize the points covered in this unit.

1.7 SUMMARY

- E-commerce represents online transactions.
- It is the retail version of the Electronic Data Interchange (EDI).
- In general terms, e-commerce is a business methodology that addresses the needs of organizations, traders and consumers to reduce costs while improving the quality of goods and services and increasing the speed of service delivery.
- In terms of types, it has four types: Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Business (C2B) and Consumer-to-Consumer (C2C).
- These models are dynamic business models and are changing as per the needs of the e-consumers.

1.8 TERMINAL QUESTIONS

1. Traditional business models have found extension in the electronic medium. Discuss this statement in light of various e-commerce models giving examples.
2. E-commerce business models are adapting themselves to the changing consumer behaviour in an online environment. Is it a correct statement to make? Explain.

1.9 ANSWERS AND HINTS

Self Assessment Questions

1. EDI.
2. E-commerce can be conducted over telephone, fax machines, automatic teller machine (ATMs), electronic payment system such as prepaid telephone cards, electronics data interchange (EDI), televisions and the internet.
3. (1) Business to Business (B2B), (2) Business to Consumer (B2C), (3) Consumer to Business (C2B), and (4) Consumer to consumer (C2C).

Terminal Questions

1. Refer to section 1.3 of the unit.
2. Refer to sections 1.3, 1.4 of the unit.

1.10 REFERENCES AND SUGGESTED READINGS

1. Teitelman Robert and Stephen Davis. "How the Cash Flows?". Institutional Investor 58. Aug.1996.

2. Electronic Messaging Services Task Force. The Commercial Use of Electronic Data Interchange: "A Report and Model Trading Partner Agreement". 45 Bus. Law 1645. 1990.

3. US Small Business Administration. Office of Advocacy. E-commerce: Small Business Venture Online. at 3 July. 1999.

4. US Department of Commerce. US Census Bureau. E-Stat. at (Mar. 18. 2002).

5. www.gartner.com

6. www.wto.org

7. www.paypal.com

8. Sharma, Vakul. "E-commerce: A New Business Paradigm". in Legal Dimensions of Cyberspace Ed. Verma, S.K. and Mittal Raman. ILI Publications. 2004.