

Original Article: Examining the Concept of E-Commerce in the Economy

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ABSTRACT

The use of information and communication technology in various economic and commercial fields has made the tremendous effects of this phenomenon more visible than before. Many economic advantages of using information and communication technology in economy and commerce include saving exchange costs, increasing the productivity of enterprises and industries, changing the management and production processes of economic enterprises, reducing the cost of searching, more and easier and cheaper access to information, reducing market entry restrictions, more number of suppliers, increase in competition, decrease in monopoly profit, and decrease in cost and price of goods and commercial facilitation have caused increasing attention to this new phenomenon. International organizations under the leadership of the United Nations and its affiliated organizations such as UNCTAD and UN/CEFACT during the past few years by presenting standards and proposed strategies to the member countries, practical measures for the development of electronic commerce and its subcategories, i.e. electronic banking, transport, and electronic transfer of electronic insurance has been implemented in the world. Governments have also taken extensive measures to develop electronic commerce. In these countries, the dynamic and efficient private sector has taken center stage and uses the latest technical developments in its activities. On the other hand, in some advanced developing countries such as Southeast Asian countries, in addition to policy-making and macro-management, governments have provided extensive support for the development of business and electronic banking. The link with the global economy, appropriate economic reforms, development of human resources, economic, legal, technical, telecommunication and communication infrastructure, and a relatively efficient private sector have created suitable conditions for the development of business and electronic banking in these countries.

Introduction

Economic actors around the world, especially in advanced and developing countries, are increasingly expanding their e-commerce exchanges using the latest technological findings, especially

information and communication technology.

In this regard, some economic enterprises, including banks, by re-engineering their management [1], production and service activities, and using electronic business have been able to maintain and then improve their market share in global markets. It is obvious

that for the companies that lag behind in this competition, the reduction of market share will be the first consequence. Consumers in different countries have shown a significant desire to make transactions electronically. Reducing the cost and increasing the speed of access to the Internet and the economic and social benefits of electronic commerce, and banking are the main reasons people pay attention to such exchanges [2].

In Iran, over the last few years, government officials, understanding the advantages and effects of electronic commerce have devoted themselves to the design and creation of electronic commerce. Undoubtedly, one of the main tasks in the development of business and electronic banking in the country is public awareness, and in this regard, the ministry of commerce's deputy planning and economic studies has implemented programs to design and support educational and research programs. Due to the daily and accelerated technological advances, societies have turned into those based on knowledge and awareness. The development of information and communication technology allows institutions and organizations to carry out their business activities and exchanges with speed and flexibility. In the 21st century, information and communication technology will progress and develop more rapidly [3].

Advances in information and communication technology in the late 20th century have led to the formation of electronic commerce. E-

commerce has brought about a great revolution in the way of trade and business. E-commerce and, in a broader sense, e-business also transforms the way people live. Developed countries have started e-commerce for several years and have experienced its problems little by little. Therefore, to a certain extent, they have provided the technological, legal, human, and material capitals necessary for its development and expansion, and they are on the threshold of a fundamental and complete transformation in the way of business and life, in which information and communication technology will be widely used.

In addition to developed countries, developing countries are planning and trying to create the necessary infrastructure and platforms for electronic commerce.

Scattered efforts have been made in our country, but these efforts have not been effective so far. Because on the one hand, they do not have the necessary cohesion and integration, and on the other hand, they lack the appropriate speed. Since the ultimate goal of this article is to create a platform for the expansion of electronic commerce and electronic business in Iran, this article discusses electronic commerce (Figure 1).

The purpose of presenting this article is to familiarize with the dimensions and infrastructure of electronic commerce and to explain the role and position of electronic transfer of funds and electronic banking in it [4].

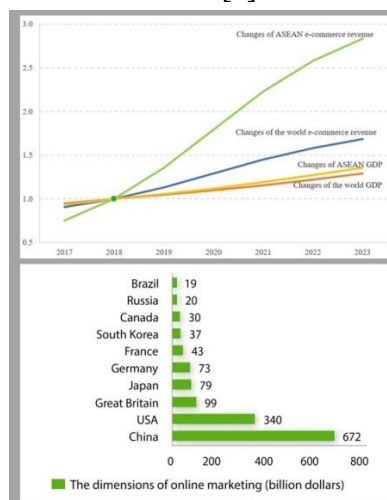


Figure 1 The dynamics of e-commerce in the global economy

The concept of electronic commerce

The rapid growth of information and communication technology in the last decade of the 20th century and the beginning of the 21st century opened new horizons for business and trade. These new horizons caused a revolution in business and are expanding with indescribable speed and acceleration. Developments in the field of information and communication technology have been so great and effective that some people interpret the current era as the information age and the developments as the information revolution [5].

The information revolution causes the creation of new and unprecedented methods in the production, processing, and transmission of information. New methods have been welcomed by companies and commercial organizations due to the fact that they increase efficiency, productivity, effectiveness, increase the speed of communication, and reduce costs, and in the new field of competition, they have many competitive advantages.

In 1991, the Internet had only 3 million users around the world and no business was done through the Internet, but in 1999, more than 150 million people accessed the Internet, and almost all of them made their purchases continuously from electronic commerce sites. Concerning many advantages of electronic commerce, it is expected to be used more rapidly in the near future and create another revolution in the field of commerce [6].

This new revolution changes the way of buying and selling goods and services by commercial institutions and individuals. Before dealing with the category of electronic commerce, it is necessary to provide a clear definition of it. Although, due to the short life of electronic commerce, a precise, clear, comprehensive, and obstacle definition of this term has not yet been provided, but this does not mean that no work has been done or a definition has not been provided in this field, but many definitions have been provided. However, there is no consensus among the thinkers of this field.

In the following, some definitions are mentioned, and then a summarized definition is presented and used. Bajaj describes e-

commerce as follows: E-commerce is the exchange of commercial information without the use of paper, in which innovations such as electronic data exchange, e-mail, electronic bulletin boards, electronic funds transfer, and other network-based technologies are used. E-commerce not only automates the process of doing transactions manually and using paper, but also helps organizations to step into a completely electronic environment and change their working methods.

In another definition, e-commerce is interpreted as follows: Doing business on the Internet, selling goods and services that are distributed discontinuously, or selling continuously, that is, offering products such as electronic books, software that reaches the consumer through computer software. Exchanges can be made between businesses, companies, and consumers, but the Internet includes a wider spectrum of potential business activities and information exchange.

As an example, the Internet offers companies, individuals and governments an electronic infrastructure that is able to create virtual auction markets for goods and services. The purpose of using e-commerce is not to develop old business methods, but to provide a new way of doing business.

According to this new method, merchants are able to offer their products full-time and to all buyers around the world, regardless of geographical borders and nations. Due to the novelty of the concept of e-commerce, most people still think that e-commerce is equivalent to buy and sell through the Internet. If this is only a small part of electronic business.

E-commerce today has a very broad concept that includes various aspects of business, economy, and banking. E-commerce includes retail sales, wholesale sales of tangible goods such as cars and intangible goods such as information, software, providing various services to customers such as medical, legal, managerial, specialized consulting, and other business cases such as launching tenders, auctions, and exchanging goods for goods and it also includes any financial and commercial transactions between different institutions and people. Commerce Net Industry consortium has provided the following definition of e-

commerce: E-commerce is the use of computers in one or more networks to transmit commercial information, which is mostly related to buy and sell information, goods, and services through the Internet [7].

The e-commerce mission is not only communication, but also strengthening business relationships. Kalakoda and Winston (1997) believe that providing a definition of electronic business depends on who we want to define electronic business. From the communication viewpoint, electronic commerce is the delivery of information, goods or services, payments through telephone lines, computer networks, or other tools.

The history of electronic commerce

Although the term e-commerce has been introduced recently, the use of electronic technologies in doing business, and commerce goes back to the previous years. For example, the use of cards instead of money started in the early 1950s in America. In this decade, the first plastic card to pay for the purchase of goods or services was produced by I diners.

From that date onwards, the use of various types of cards by public service institutions such as train, bus, and urban railway tickets, financial institutions such as banks or non-financial institutions such as telecommunications, civil registry, and international credit financial institutions such as visa, MasterCard, American express, common and spread with the electronification of cards, and the use of computer terminals at the point of sale (POS) in 1983, the dimensions of using cards in business became wider. In addition to cards, which were effective in the formation of electronic commerce, the widespread use of computers by large companies in the 1975s was also effective.

In this decade, large and multinational companies created special computer networks so that they can exchange business information between themselves and other producers with greater speed and ease. This method of electronic data transfer is called electronic data Interchange (EDI). Electronic data exchange can be used for electronic communication of documents such as purchase order, invoice,

shipping declaration, confirmation of receipt of goods, and other commercial standard correspondence between commercial parties [8].

This technology can also be used to send financial information and electronic payments. Perhaps the thing that most affected electronic commerce and caused its ever-increasing expansion was the Internet emergence. The Internet is an international network consisting of global information networks and highways. Internet also provides information resources available in countless service providers to different users. Through the Internet, millions of computers are connected to each other and creates a global network.

Every type of user can be found in this global network: Individuals, universities, government organizations, institutions and private companies, stores, and banks. Although the Internet was initially designed for military purposes, and then it was used in the field of research and study activities, but it quickly became known and widely used in business.

E-commerce using the Internet is done in two ways:

(1) Implementation of electronic data exchange through the Internet, meaning that the Internet is used as a free or cheap network instead of more expensive value-added networks (VAN) for commercial communications.

(2) The global web is a market that offers goods, information and services for sale, and buyers can see this market through browsers and buy in it.

In the 20th century, in the 1990s, electronic commerce in its new concept began through private and public networks and the Internet in America. In 1994, the volume of electronic business transactions in the United States was estimated at 325 billion dollars.

America Online Computer Server is one of the most important electronic business networks in America. In addition, the Internet Shopping Network that operates the largest retail markets, which is a consortium of companies that promotes the use of the Internet for

electronic commerce, has played a prominent role in the development of the Internet and electronic commerce in the United States. In the 1950s, plastic cards appeared in the field of business. During the 1970s, with the introduction of electronic funds transfer (EFT) between banks based on private networks, financial markets underwent a fundamental change. Electronic funds transfer (EFT) optimized electronic payments along with information about funds sent. During the years after the 1970s and the early 1980s, electronic commerce in the form of electronic messages became widespread among companies in developed countries [9].

The technology of electronic messages actually caused the reduction of paper-based work in business processes and the increase of automation. Institutions traditionally used paper methods for their exchanges such as checks, purchase orders, loading, and shipping documents, and these exchanges became electronic. Electronic data exchange allowed companies and institutions to exchange required documents and information, orders and permits electronically. In the mid-1980s, a new type of use of e-commerce technology among customers spread. This new method was: continuous services that created new social interactions and the sharing of knowledge and scientific information.

During the late 1980s and early 1990s, the technology of electronic messages became an inseparable part of the work flows of institutions, which were called integrated computing systems.

This method created more efficiency and effectiveness for institutions. In the 1990s, the emergence of the world wide web on the Internet caused a tremendous change in the field of electronic commerce. The web made e-

commerce to do business activities in a cheaper way. The web has further made it possible for smaller institutions to compete with multinational companies [10].

The advantages of creating an electronic business

When talking about the advantages of electronic business, electronic business is, in fact, compared with traditional business. In the traditional business that is based on paper, repeatedly entering the same information causes problems that can be solved using electronic business. These problems include:

(1) In traditional business, a lot of time is spent on entering repetitive information and sending them.

(2) In traditional business, due to the fact that data is entered into the system frequently, the possibility of errors increases and the accuracy of operations decreases.

(3) In traditional business, more labor is needed for entering information, tracking, sending, etc. Manpower increases most of the costs. As a result, it reduces the competition power.

(4) Paper-based manual operations in traditional business increase the uncertainty factor.

Although many of the business operations of companies can be done using computers today, but despite this, many documents should be printed and classified, sent to customers, and copies of them must be archived. Documents sent to customers must be manually entered in their management information system (Figure 2).

All of these require spending time and money, which can be solved to some extent by using e-commerce.

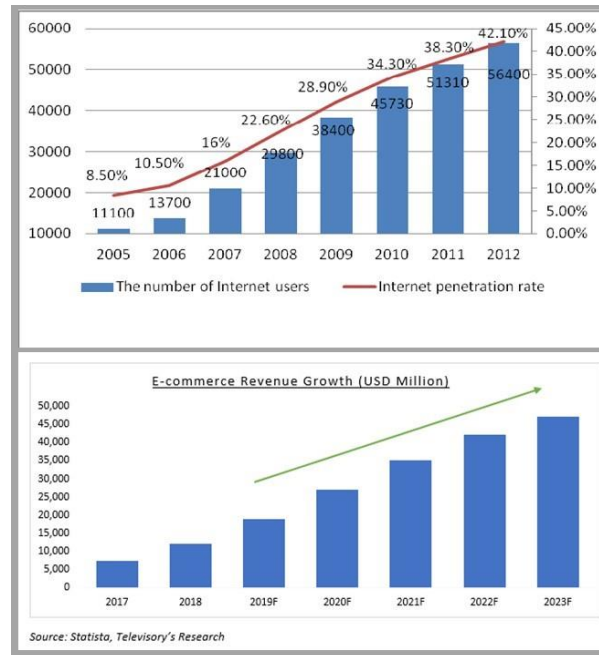


Figure 2 Booming Indonesian e-commerce market

With these explanations, we will discuss the features and advantages of e-commerce.

(1) In electronic business, the delay caused by the preparation and sending of documents is eliminated.

(2) In e-commerce, since data is not entered into the system frequently, the errors possibility is reduced.

(3) Saving labor due to no need to re-enter data into the system and reduce its cost. Scientific studies have shown that the use of electronic business methods compared to traditional business reduces the costs of commercial operations between 20 and 75 percent.

(4) In electronic commerce, due to the fact that delay times are reduced, the flow of information will be smoother and more reliable.

(5) In electronic commerce, the sender is notified of the receipt of the message electronically without interruption.

Electronic business has removed the time and place limitations of business [11]. In other words, it has turned business into global business. Easy, secure, and fast access to information and establishing communication with buyers and sellers is of particular

importance, as by using electronic data exchange, the cost of collecting and processing information is reduced, and then the distance between the buyer and the seller disappears, and the speed and accuracy of the operation increases. As a result, in this way, you can experience real world trade.

Reducing the cost of goods and services is one of the major costs of products and services, marketing, servicing, and distribution costs. In e-commerce, due to the decrease in marketing and distribution costs as well as removal of middlemen, the finished price of the products is reduced to a great extent.

The issue of competition is considered as an important issue in electronic commerce. Companies and institutions should use it and if they do not use this tool, sooner or later they will be left behind while competing companies use it. E-commerce has intensified the competition because all companies can introduce themselves and their products, and consumers can quickly gather the information they need and choose the best seller.

(1) In traditional business, small and medium-sized companies cannot easily be present at the global level, but e-commerce makes it possible

for small and medium-sized companies to introduce themselves at the global level and supply their products and services and to cooperate with large companies.

(2) Increasing the sales of enterprises and companies due to presence in new and global markets [12].

(3) Using electronic business, customers can contact the suppliers of goods and services within 24 hours and satisfy their needs.

(4) E-commerce reduces people's commuting costs, saves time, reduces traffic, reduces air pollution, crowded roads, and other social costs.

Disadvantages of e-commerce

If we accept that e-commerce is a new method, to reduce costs, increase speed and accuracy in communication and commercial exchanges, concerning that the systems, methods and technology created by humans are not absolute, we should accept that this method also has shortcomings and disadvantages. Due to the newness of this technology, it is still too early to reveal all its hidden angles and reveal its flaws because at present this type of technology is in the initial stage of supply. Therefore, more emphasis is placed on its positive aspects compared to traditional business, and most analysts do not mention its negative aspects and disadvantages [13].

Almost similar to when a person wants to buy a product, when buying a product, most of its advantages and positive points become apparent in his/or her opinion, but after buying the product, its negative points are gradually revealed in his/or her opinion. At the moment, the fever of using e-commerce is high in all countries and its utilization is increasing surprisingly. Therefore, it is somewhat natural to pay less attention to its negative aspects. Despite the above mentioned points, some cases are considered as the disadvantages or the negative aspects of e-commerce.

One of the negative aspects of electronic commerce is the elimination of emotional connections between the parties of the transaction. In traditional business, buyer and seller establish direct and face-to-face communication with each other. These

connections cause affection and love and create emotional relationships. This type of emotional relationship creates a kind of commitment between buyer and seller, which guarantees the relationship between us. In the electronic business method, this type of emotional communication is completely removed. Because communication is done by computer, they do business without seeing or knowing each other [14].

The expansion of electronic commerce at the level of societies, especially eastern societies and countries like Iran, threatens emotional and social exchanges and communications. The cost of transaction risks in electronic commerce is the next problem. In electronic commerce, the buyer and the seller do not meet each other and do not see the goods, but they buy based on the relevant specifications and images, and this factor may cause risks for the parties. Another important issue is security in e-commerce.

At the same time, the electronic business system has significantly increased the accuracy and speed of processing, and it should also respond to security issues that include accessibility, confidentiality, integrity of the message, validity and non-repudiation, and the ability to inspect and investigate.

Electronic business steps

As mentioned in the history section, a long period has not passed since the life of e-commerce in its new concept. Therefore, its maturity stages may not be completed yet, but from the viewpoint of the stages of using electronic commerce, the following stages can be imagined.

Introducing the business

In this step, the business or any real or legal person introduces itself on the Internet. For this purpose, he/or she creates a special internet page and explains his profile and activity. This stage has an advertising aspect. In Iran, reputable companies have started to create a dedicated internet page in the last one or two years. This preliminary stage is very easy and any company can create a dedicated internet page by paying small amounts.

Introduction of products and services

In this stage, in addition to introduce itself on the Internet site, the business introduces its products and services.

At this stage, the commercial company tries to provide the details of its services and products, including full specifications of services and products, quality details, price, distribution and presentation methods, as well as other information needed by customers.

At this stage, customers can request additional information from the business through the Internet and through e-mail, and the business will provide the required information to the customers in a timely manner through e-mail [15].

Some leading companies in Iran have recently entered this stage. Of course, the point to consider is that these works should not be done without careful evaluation and proper foundation, just on the competition basis and eye to eye like many other works. For example, the arrival of personal computers in Iran has made it possible to see computers everywhere in government and private offices, but upon further investigation, it can be seen that many of them are decorated and even managers and employees do not know how to use them optimally. This discussion can be raised so that electronic commerce does not suffer the same fate. Therefore, it is better for our commercial enterprises to initially do the necessary infrastructure for this work, and then enter various stages of electronic commerce. Entering E-commerce should be based on accurate expert analysis, especially cost-benefit analysis.

Continuous customer support

In the third stage of e-commerce, buying and selling, contract conclusion, payment, and shipment of goods are done like traditional business, but after-sales services and technical support are continuous. In other words, to receive technical services, customers communicate with the website of the company providing goods or services and directly use their guidance and assistance. Iranian companies have not yet entered this stage and if they have entered, their number is very limited.

Continuous sale and supply of goods and services

At this stage, the business company creates an internet site that has all the facilities such as an electronic catalog and electronic funds transfer systems (EFT) and can continuously sell, pay and receive, and make money. This stage of e-commerce requires important infrastructures, especially the electronic funds transfer system. There is currently no such infrastructure in Iran [16].

Carrying out all the operations continuously

This stage is very advanced and is being developed. In this stage, in addition to continuous sales, all stages of the added value chain in the distribution stage, organizations and commercial companies are performed continuously on the Internet.

E-commerce models

E-commerce has different models. Here, we refer to its most important models:

B2B e-commerce

We live in the age of information and we see that business conditions are changing drastically. Despite all these advances, it is still surprising to many people why the majority of e-commerce is done in B2B or business-to-business format.

Forecasts show that the e-commerce market will reach 800 billion pounds in 2003 and the B2B share will be around 90%.

In a recent survey conducted in the United States, it showed that about 55% of small business companies use the Internet in some way for business purposes. About one third of them started selling products and services through the network. 43% of them did not use the network for sales, but they hoped to be able to do so within a year.

In the B2B model, a company or commercial enterprise acts to register an order with manufacturers, receive pre-invoice, purchase invoice, pay the purchase amount, and related costs through the network. Although e-commerce has been done using electronic data

interchange (EDI) for many years, it actually took its current form five years ago. Cisco was one of the first companies to launch its website in 1996. After that, other companies quickly imitated this method and solved financial problems and electronic transfer of funds.

B2C e-commerce

E-commerce of company and customer includes retail business. This type of business is created between the seller and the customers, that is, the customers can access the store by using the network, choose the product they need, place an order and pay for it. This type of business is increasing rapidly with the Internet expansion. Today, in developed countries, all kinds of goods, from consumer items such as food to durable items such as cars, can be bought and sold through the Internet. The B2C e-commerce has many advantages for both buyers and sellers. From the buyers' viewpoint, electronic stores have the following features and advantages:

The catalog and product specifications are easily accessible.

(1) The goods and services can be evaluated by other buyers and the customer can use the opinions of other people.

(2) It is possible to buy from the store 24 hours a day.

(3) Receive some products such as software or books and electronic publications and movies at the same time as the purchase.

(4) Buying from these stores is cheaper [17].

(5) There is no psychological pressure when buying.

(6) It is easily possible to compare all kinds of goods in all types of stores.

(7) The buyer can easily choose the most suitable price.

(8) After choosing the goods and paying the amount and costs, the buyer should receive the goods at home quickly.

(9) After receiving, if the product has a problem, you can return it.

Customer-customer electronic commerce (C2C)

Customer-customer electronic commerce (C₂C) has also recently emerged. The volume of

exchanges of this type of electronic business is much lower compared to the two mentioned above types. This type of electronic business is mostly used for holding tenders and auctions.

Business-to-business (B2A)

This type of e-commerce includes all commercial and financial exchanges between businesses, government departments, and organizations. This type of business includes two parts. One part includes the purchase of goods and services by the departments from the non-governmental sector or commercial enterprises, and the second part includes the payments of non-governmental sector or commercial enterprises to government departments for various taxes and duties. This electronic business model is expanding rapidly with the emergence of electronic government, but it is currently in the initial stages of formation. In advanced countries such as America, this model has been created and used for several years [18].

Customer-administration e-commerce (C2A)

Perhaps the newest type of e-commerce that is booming with the creation of e-government is C₂A e-commerce. The customer-administrative model consists of: financial and commercial exchanges of governments and citizens, which includes the collection of taxes, duties, and public assistance.

Government-Government Electronic Commerce (G2G)

Government-Government Electronic Commerce (G₂G) includes commercial exchanges between governments. This model is used to conclude contracts in various fields between countries. For example, if two countries want to conclude a contract with each other in terms of export and import, they should use the G₂G model. Concerning that the last three models of e-commerce (C₂A, B₂A, and G₂G) are related to a new topic called electronic government. In the continuation of this discussion about electronic government, explanations are provided. Due to the amazing

developments in the field of information and communication technology, everything is changing and the information revolution has spread everywhere.

Nowadays, electronic commerce, distance and Internet-based education, electronic banking, and virtual stores are rapidly developing and expanding. Meanwhile, the new term electronic government has been proposed. The basic feature of electronic government is to provide public services with lower cost and higher effectiveness. The electronic government tries to facilitate the communication between the government and the individuals and the people together. Electronic government is a new way of performing government duties using new information and communication technologies. This method provides necessary facilities for people to have proper access to government information and services, improve the quality of services and provide wider opportunities to participate in democratic processes and institutions.

Electronic government customers are divided into three categories

- (1) People,
- (2) Commercial enterprises, and
- (3) Government institutions and organizations.

These will make the necessary exchanges electronically using information and communication technology. Today, advanced countries have started moving towards electronic government and have been able to do many of their affairs and exchange services electronically.

It is necessary to think about creating an electronic government in Iran, especially among the statesmen, and the necessary planning for its launch should be followed quickly [19].

Effective factors in the acceleration of electronic commerce

The increase in demand for electronic commerce has been influenced by three important factors:

- (1)Economic efficiency,
- (2)Increasing interactions with customers,

(3)Convergence of digital technology.

Due to the heavy pressures to reduce costs and keep themselves competitive, most companies have been attracted by the high efficiency and savings that can be obtained through e-commerce.

Economic efficiency and savings created by e-commerce include

(1)Low-cost technology infrastructures that reduce the high imposition costs of old technology,

(2)Low cost and high accuracy of electronic transactions with suppliers,

(3)Low cost of global sharing of information and advertising, and

(4)It creates the ability for companies to create low-cost options for providing services to customers.

The economic pressures that create motivation in companies to change direction towards e-commerce have an internal aspect as well as an external aspect. The immediate use of e-commerce is effective in the internal coherence of a company's operations. External integration includes the formation of vast networks of suppliers, government agencies, large companies, and independent contractors in a community that are able to connect to each other through a computer.

Internal coherence may even be more vital than external coherence because in an internal coherence of the organization, orders are received electronically and information is automatically sent not only to the production department, but also to the loading, sales and billing department, and the inventory control system, and it causes coordination between the organization's components. Another factor that causes the increase in demand and trends towards electronic commerce is the force of customer interactions and marketing issues [20].

Because companies use e-commerce to provide marketing channels, target small segments, small customers, and improve customer satisfaction after sales by creating new customer support and service channels. The third effective factor in expanding the use of electronic commerce is the development of

digital technology. Digital technology has made it possible for letters, sounds, photos, moving images, and videos to be a stream of bits that can be combined, stored, and transferred quickly and efficiently in very large volumes without reducing their quality.

The development of this technology and its use in electronic commerce has caused a great transformation in all industrial fields, especially in the communication, entertainment, and publishing industries.

Experiences of countries regarding electronic commerce

The rapid and unexpected growth of e-commerce in developed and developing countries has caused a revolution in business. According to the latest research report, the largest amount of e-commerce belongs to America, Canada, and a number of northern European countries. In this report, 47 countries of the world have been examined in terms of the use of electronic commerce.

According to the mentioned report, America, Finland, Iceland, Canada, and the Netherlands are at the top of the list of these countries. Sweden, Australia, Denmark, Ireland, and New Zealand are after the above countries.

In this research, variables such as standard of living, willingness to accept foreign investment, number of computers, and internet connection were investigated in these countries. This study also shows that southern European countries such as Spain, Portugal, and Greece did not get a good score, the reasons for which are poverty, climate issues, and lack of joint investment. Latin American countries have not had a brilliant situation in terms of electronic commerce [21].

Reasons such as poverty and lack of necessary infrastructure are mentioned as the main reason for the low level of e-commerce. Some countries such as Argentina, Venezuela, and Colombia have many economic difficulties. Therefore, they must first solve these problems so that they can enter e-commerce.

In Asia, South Korea, and Malaysia are ahead of other countries. In the Oceania countries, Australia and New Zealand have a bright future ahead of them due to their educated people,

high literacy rate and capable and interested citizens. Internet has globalized communication networks and has improved the efficiency and integration of local and international markets especially for developing countries that have inefficiencies due to poor access to information. Although the Internet accelerates global growth, it poses many risks for countries that do not have the ability to access it.

Taking advantage of the advantages of electronic commerce requires improving international coordination regarding insurance, taxation, financial systems, and adopting appropriate policies in the fields of information and communication technology.

The approach of countries towards an open economy will promote and increase the competition and penetration of Internet technology and will also lead to more efficient infrastructure and social services.

Despite the obvious advantages of the Internet, there are still pessimisms about the use of this technology and its diffusion rate, but these pessimisms should not cause stagnation in the use of the Internet in developing countries. Evidence shows that the Internet has two important outcomes for developing countries:

(1) Companies in developing countries can use the productivity advantages resulting from the increase in demand due to the expansion of electronic commerce. The Internet enhances productivity in developing countries by increasing the efficiency of procurement systems, inventory control, lowering retail transaction costs, eliminating, or replacing intermediaries.

(2) Customers will benefit from increased competition and market transparency, but the benefits that reach the companies depend to a large extent on the relevant sector, the degree of product differentiation and the level of technological complexity. To remove barriers to electronic commerce in developing countries, government measures are vital. The role of the government in the development of the Internet, especially in developing countries, is undeniable.

The creation of necessary infrastructures such as telecommunication, transportation, electricity, specialized, and educated

manpower, as well as financial assistance for the expansion of the Internet and direct investment in this field by the governments will lead to the development of the Internet. The Internet access gap between industrialized and developing countries will continue in the next decade. Internet access is very unfair.

For example, in the United States, 30% of the country's population is connected to the Internet, while in developing countries, 0.6% of them have access to the Internet.

Effects of electronic commerce on developing countries

The markets of these countries are opened to a wide range of buyers and sellers. Currently, large companies in industrialized countries use the advantages of these markets and allow smaller and medium-sized companies to grow. By opening global markets through the internet to small and medium enterprises in developing countries, their economy will prosper and their production costs will be reduced to a large extent.

In this field, special products such as handicrafts and software will have an advantage. The Internet removes the barriers to sell services provided by expert and skilled employees. For example, in the Philippines, companies use the Internet to provide accounting services and the process of claiming insurance losses caused by cards for companies in developed countries, or in India, workers order American doctors at the cost of services in the United States.

It is expected that communication, commercial, financial, and insurance services will account for the largest volume of e-commerce. Another effect of e-commerce and the Internet is continuous advertising [22].

Small and medium-sized companies have turned to continuous advertising by creating a website on the Internet, and this has made them able to advertise their products and increase their sales. Research has shown that the average sales of companies that have created a website on the Internet has increased. Another effect of the Internet is on income distribution. Internet has improved access and use of information. This issue increases capital

productivity. On the other hand, the Internet has increased the demand for skilled and specialized workforce, especially in the information technology sector.

On the other hand, we will have a decrease in the demand for labor in the normal exchange and retail sector. This increase in demand for skilled and expert personnel in the fields of information technology may cause migration and intensify economic inequalities.

Of course, on the other hand, e-commerce is because it reduces the use of labor in production. As a result, it reduces production costs.

Limitations of e-commerce growth in developing countries

Based on the studies conducted by the World Bank and UNCTAD as well as developing countries, the following factors have been identified as limitations to the growth of e-commerce in developing countries:

Problems related to infrastructures

One of the limitations that is discussed a lot is the infrastructures required for electronic commerce. The International telecommunication Union (ITU) has stated in a report that in developed countries there are 312 Internet Service Providers (ISP) per ten thousand people, while in developing countries there are only six Internet service providers per ten thousand people. has it.

Likewise, in developed countries, there are 54 telephone lines for every 100 people, while in developing countries there are 2.5 telephone lines for every 100 people. Without having the necessary infrastructure of organizations, companies in developing countries can hardly compete in the field of electronic commerce.

The weak communication structure in developing countries limits the growth of e-commerce in these countries.

Weakness of necessary communication facilities in developing countries includes the following

(1) Information transmission facilities to connect the country's internal network to the Internet,

(2) Internal intranet capability, the method and speed of connecting homes and companies to the Internet and powerful networks.,

(3) Government or private monopolies that limit international connections and communications and lead to increased prices and inefficient conditions,

(4) Lack of local infrastructural rings necessary to access the telephone,

(5) Low quality of local telephone infrastructure rings, and

(6) The high cost of telephone services.

In addition to the weakness of the communication structure in developing countries, the weakness of other infrastructures hinders the development of electronic commerce. One of the necessary infrastructures for the growth of e-commerce is electricity and energy.

In developing countries, continuous power outages and long interruptions pose a serious threat to the electronic transmission of information and system performance. Inefficient postal service is the problem of other developing countries [23].

In many of these countries, postal services are unreliable, expensive, and time-consuming. This makes custom services offered by the Internet at a high cost. Security issues of electronic means of payment in developing countries is another problem in the development of electronic commerce.

In these countries, due to many frauds, the use of cards, which is one of the most common electronic payment tools for purchases, is facing a problem. For example, in Latin American countries, due to the fact that the card companies do not compensate for the fraudulent use of the cards, it has practically made online shopping difficult.

Access to computer and internet

Access to computer and internet is one of the main problems of developing countries. In developing countries with low per capita income, the high cost of computers has placed this product in the category of luxury items. In

addition to the cost of the computer, the monthly costs of Internet sharing, the cost of communication and equipment should be added to it. The international telecommunication union (ITU) announced in a report that the average monthly cost of internet connection in Africa is 75 dollars, in England, it is 15 dollars, and in the United States, it is 10 dollars.

Furthermore, additional costs and charges for telephone lines are calculated and paid based on the time of use. These costs cause users to reduce their internet connection time, and as a result, e-commerce activities are significantly affected and disrupted.

Lack of suitable legal structures

One of the important issues of many countries, especially developing countries, is the lack of necessary and appropriate laws and regulations to shape e-commerce. Most developing countries have laws and regulations that do not accept anything except paper and writing regarding business transactions. This issue is a serious obstacle for the business world that wants to use electronic technology to carry out commercial transactions.

Because the lack of a suitable legal mechanism to protect and promote the electronic exchange of information and electronic commerce will cause uncertainty among organizations and individuals and will ultimately be a big obstacle in the development of electronic commerce [24].

Security issues of information exchange

One of the issues that arise for organizations and individuals with the increase in working with the Internet is security issues.

Companies that do their business on the Internet should use precise and complex security methods and standards, especially in cases where they deal with information such as cards, bank accounts, and social security numbers, so that this information can be used more carefully.

Unauthorized users cannot access the Internet.

In developing countries, a very small percentage of people use cards. Individuals and even commercial institutions in developing countries use Internet technology more for marketing and internal communication purposes than for commercial transactions.

Therefore, due to the lack of internet usage culture and people's negative attitude towards safe and reliable electronic exchanges, the growth and development of all electronic exchanges, and communications in developing countries will be in an aura of uncertainty and will face a serious problem and obstacle.

Concerning the issues related to the development of efficient security systems to create coherence and increase the data reliability on the computer and increase the sensitivity of national institutions on these issues, there will be a relatively long way ahead for developing countries to solve this problem.

Lack of necessary human capital

One of the limitations of developing countries in the use of electronic commerce is the lack of specialized human resources in this field. The increase in the use of electronic commerce causes the demand for specialized and skilled forces to increase, especially in the fields of information and communication technology.

On the one hand, these countries are facing a shortage of specialized personnel, and on the other hand, ordinary human resources are also poorly informed about the Internet and electronic commerce. Therefore, the lack of suitable human resources will act as a serious obstacle in the growth of e-commerce.

The problem of the English language

Most of the information and exchanges that are done on the Internet are conducted in English. This method is considered the most important obstacle to using the Internet for general purposes of e-commerce.

The estimated share of the use of English on the Internet is between 70 and 80 percent. If only 57% of internet users are English speaking. Due to the fact that in developing countries, a very high percentage lack the necessary literacy and mastery of the English

language, they face problems in using the Internet.

Cultural problems

One of the limitations of e-commerce expansion in developing countries is cultural barriers. Given that everything can be found on the Internet and cultural and moral limitations are not taken into account, from one viewpoint, the expansion of the Internet causes the destruction of cultural, religious, and moral principles among societies.

With this argument, its expansion is prevented or at least some restrictions are applied to it. These restrictions reduce the growth rate of Internet use and e-commerce in developing countries.

Effective factors in the development of electronic commerce

(1) The expansion of electronic commerce in the world requires accurate knowledge of relevant issues and agreement on them at the national, regional, and international levels. Many international and regional organizations are involved in creating a suitable framework to facilitate global electronic commerce. These organizations examine various issues and problems and recommend a framework to solve them and remove obstacles.

(2) The most important issues that are necessary to create and run an efficient electronic business are:

General issues

(1) The effective and determining role of governments in the development of electronic commerce and

(2) Effective and facilitating role of international organizations.

Social and economic issues

- (1) Fiscal issues,
- (2) Electronic money,
- (3) Access to the market,
- (4) Development of human resources,
- (5) Duties and basic role of customs,

- (6) The risk of monopolization, and
- (7) Cultural issues.

Legal issues

- (1) Banking rules and regulations,
- (2) Electronic contracts,
- (3) Confidentiality and protection of information,
- (4) Protecting the interests of the buyer and seller,
- (5) Digital signature and encryption,
- (6) Intellectual property rights,
- (7) Fraud and electronic fraud, and
- (8) Internet regulations such as standards and name ranges.

Technological issues

- (1) Telecommunication infrastructures,
- (2) Security,
- (3) Encryption,
- (4) Electronic payment systems, and
- (5) Confirmation and coherence of data.

Conclusion

In the previous parts, the important topics of electronic commerce including the definition of electronic commerce, advantages and disadvantages of electronic commerce, and the status of electronic commerce in different countries, especially developing countries were briefly explained.

The purpose of presenting these materials was to create a brief understanding of e-commerce so that the role and position of e-commerce in Iran can be understood. Changes in the field of trade and business are fast and unpredictable. Technological advances, especially information and communication technology (ICT), have revolutionized business, and traditional business has turned into electronic business, and the globalization of the economy has accelerated.

Therefore, the importance of companies in the new global system will be greater than the importance of governments, and we will experience the expansion and interconnectedness of money and financial

markets and the world stock exchange. We are witnessing the expansion of satellite communications and computer networks, and as a result, the expansion of cultural and information exchanges in the world, and international transportation networks are expanding, and the related costs are decreasing rapidly, and the world is on the verge of a complex and extensive division of social work. The development of the world economy and the expansion of the concept of globalization of the economy and the market are supported by international organizations. Organizations such as the World Trade Organization (WTO), International Financial Organizations, the European Union (EU), the North American free trade agreement (NAFTA), and the Asia-Pacific economic cooperation (APEC) play a key role in the development of world trade and the globalization of markets. are in charge Globalization means the blurring of borders, that is, the birth of a new form of trade and business where the buyer no longer goes from one store to another looking for the item he needs, but it is the seller who looks for the buyer through the Internet from city to city and country that searches the country.

Therefore, the new business has placed many potential opportunities and threats in front of our economy, which requires national determination and strategic planning to use the opportunities and remove or reduce the obstacles and threats.

With the market globalization, we will witness acceleration in communication, economic growth, foreign trade, and more opportunities for all countries and regardless of geographical limitations, trade and marketing can be expanded rapidly through electronic communications.

E-commerce in developed countries has become a normal means of conducting domestic and foreign trade, and its positive effects have been shown in a number of developing countries that have started the necessary plans to spread and integrate it with their commercial culture. In our country, measures have been taken in the field of electronic commerce and the creation of the necessary infrastructure, but there is a long way to go.

Among the actions that have been carried out in this field, the creation of changes in the commercial information system, including the creation of the initial phase of Iran's commercial point center and commercial information network, the establishment of the national center for numbering of goods and services of Iran, the formation of the supreme council of electronic commerce, changes in the banking system.

Among the country's banks, joining the SWIFT network, and offering bank cards, changes in the country's customs system, including the use of ASYCUDA, and finally taking measures in the field of telecommunication network, including the launch of the 25X network and the start of the movement to launch the IP network can be mentioned. Faster steps have been taken in the last one or two years, but there are still many obstacles on the way, some of which are mentioned below:

(1) One of the obstacles to the expansion of electronic commerce in Iran is the cultural obstacle and the delay in its acceptance process. Many still discuss the necessity and importance of accepting, accepting or not accepting it and have doubts.

It is necessary to remove the factors of doubt and the obstacles to the use of new technology and by finding the necessary solutions to make the ground for its use smooth; in this case, we will be coordinated with the global developments.

Therefore, cultural and social barriers are one of the most important barriers in the field of e-commerce growth and development in Iran. Today, other developing countries are rapidly using electronic commerce, and the use of electronic commerce in developed countries has completely abandoned traditional commerce. The advantages of e-commerce are clear and tangible.

Therefore, not using it means lagging behind the global development process and as a result the country is isolated and lagging behind the global trade train. Of course, raising these issues does not mean ignoring the disadvantages and limitations of e-commerce, but we should use it in such a way that its limitations and disadvantages are minimized. In addition to the cultural and social barriers, the

necessary infrastructure for e-commerce has not been created in Iran and it needs more investment in this field.

One of the necessary infrastructures is telecommunication infrastructures. The current telecommunication system of the country does not meet the needs of electronic commerce. Some of the problems are traffic lines, telecommunication bandwidth, expensive telephone communication, security issues of telecommunication system, and various telecommunication protocols.

(2) Internet and network access is another problem of electronic commerce. A few years have not passed since the Internet entered the country and there are still not enough internet service providers (ISPs) and it is not possible for everyone to connect to the Internet and access it. The lack of internet facilities is caused by several factors such as lack of proper satellite coverage, telecommunication system, and restrictive laws and regulations. These factors have caused the cost of using the Internet to be very high. Of course, telecommunication costs should be added to these costs. There is no access to a computer in the country for everyone. The requirement of electronic commerce is the ability of users to access and use computers.

This field does not exist for two reasons, one is the cost of providing the computer, related hardware equipment, and the other is the ability to use the computer. In addition, there are few trained people who can use computers. Therefore, it is necessary to invest in this field as well.

(3) Inefficiency of transportation systems are another obstacle to the growth of e-commerce in the country. Because one of the necessary infrastructures for the complete establishment of e-commerce is a fast, reliable and low-cost transportation system.

(4) The lack of sufficient, timely, and flexible laws and regulations is another weakness of the country in the use of electronic commerce. Some of the country's laws are old and need to be revised. For example, Iran's commercial law is old and inflexible. This law was compiled in 1932 and in 1968 there were amendments in it. Since then, there have been so many changes in business that the current business law does not

respond to today's needs. For example, if electronic commerce wants to be used in Iran, there is a need to establish new laws in this regard. Of course, recently, in this context, the draft law of electronic commerce has been approved in the Islamic council. The expansion of electronic commerce requires effective judicial support. A judicial system that can quickly, transparently and safely deal with issues and possible violations in electronic commerce.

Currently, the necessary infrastructure for such fast judicial procedures is facing problems. As a result, gaining the necessary confidence and trust to use electronic business instead of traditional business among individuals and organizations is slow. The multiplicity of decision-making centers regarding trade, both domestic and foreign trade, can also hinder the expansion of electronic trade. These centers are often uncoordinated and have opaque and cumbersome regulations.

To expand electronic commerce, while reducing the number of decision-making centers, they should be coordinated and the transparency of laws and regulations should be increased. On the other hand, due to the lack of proper laws, people and commercial institutions try to hide things to pay fewer taxes. It is natural, the culture that forces businessmen and owners of words to be secretive, prevents the expansion of electronic business in which everything is recorded, transparent, and there is no place for secrecy.

Therefore, from this perspective, individuals and institutions are not willing to expand electronic commerce. Security issues are among the effective factors in the growth of the use of electronic commerce. Iran's business is paper-based and traditional, the use of e-commerce, i.e. electronic exchanges instead of paper, needs to create trust and confidence among users. Issues such as digital signature, confidentiality, completeness, non-repudiation, and accessibility are among the important issues that should be taken into consideration.

(5) One of the main obstacles to the development and use of e-commerce in Iran is the existence of necessary facilities for electronic funds transfer (EFT). To use electronic commerce, especially in its advanced

stages, electronic payment systems are needed, that is, when purchases are made continuously, there is a need to have a system where payments are made continuously. Currently, such systems are in the initial stages of formation in Iran.

Therefore, it is necessary to transform Iran's banking system from traditional banking to electronic banking. Electronic banking is the support and protector of electronic business. Although the banking system in Iran is mostly traditional, efforts are underway to transform the banking system. Joining SWIFT by the central bank of Iran and other banks is a step towards the electronification of foreign payments and exchanges.

In addition, the leading banks have taken or are currently implementing effective measures for electronification. Including the use of the Siba system by the National Bank of Iran, the provision of electronic current account bank cards by most banks is a step in the direction of electronic banking.

Without the use of proper electronic funds transfer (EFT) systems, the development and use of electronic commerce will not be possible. Therefore, it is necessary to expand the electronic systems of funds transfer within the framework of the strategic program of electronic commerce.

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