

E-COMMERCE: TECHNOLOGY AND ITS PERSPECTIVE IN THE DEVELOPING COUNTRIES

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Abstract

We have entered the new millennium with great hopes. As we enter the new millennium we can see that the world is very clearly shifting to a new era in terms of new speed of changes. Information Technology (IT) brings this new speed unknown to human history. This fast speed of changes will be touching all aspect of human life. IT and in particular e-commerce is playing the central role in transforming the old economy into the high-speed new economy. E-commerce has created a vast range of business opportunities for both firms and individuals from developing countries to market their products and services abroad, and earn foreign exchange for their countries. In this research paper an attempt is made to focus on the e-commerce technology, its prospects and identify the various barriers that exists for its proper development in the developing countries around the world.

Introduction

E-commerce has become a buzzword of modern trading and information technology. It is a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of products and services, and increasing the speed of service delivery. In general, it is the process of conducting all forms of business using computer hardware, software, processing, data communication and computer network. E-commerce is used to describe a new on-line approach to performing traditional functions such as payment and funds transfer, order entry processing, invoicing, inventory management, cargo tracking, electronic catalogs, and point of sales data gathering. As a whole e-commerce is an umbrella concept that integrates a wide range of new and old applications as shown in fig.1 and represents the digital convergence of 21st century business application and computing technologies.

The fundamental advancement in information technology through the development of Internet has already brought a sea change in e-commerce and it is poised for further revolutionary change. The principal media that are contributing and will contribute to global e-commerce are:

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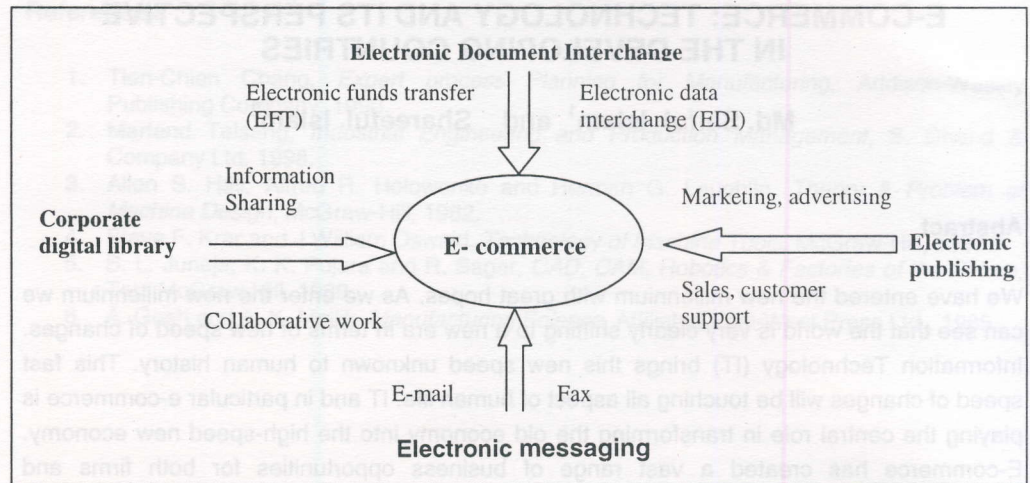


Figure 1: Convergence of separate functions around e-commerce

Global Information Infrastructure (GII): GII will be the economic backbone of the 21st century, which is going to govern our social and economic life. When fully realized GII will have a vast network consisting of hundreds and thousands of networks. These networks will run our factories, process our financial transactions, organize our work, increase our productivity, instruct us and educate our children, help physician and hospitals to take our care, connect us more closely with friends and family wherever we are, entertain us, and myriad of other services not yet conceived.

Internet: Which emerged as a preserve of University and Research Organization, is growing exponentially and had attracted a large number of users of varied interest. Public and commercial user of Internet is growing rapidly. The Internet is being used to reinvent government and reshape our lives and our communities in the process. Today more than 80 million [4] have access to the Internet and this number is heading towards 150 million [4]. Internet creates a profound impact on global trade and service. E-commerce and communication over the Internet offer tremendous market for today's business. The increased number of Internet connections and the overall market response has made it imperative enterprises to adept new trade practices and standard suited to electronic transactions.

World Wide Web (WWW): Which is the engine for exploring the resources in Internet to adding homage, information services and host of interconnections at a dizzying rate. Commercial web site at present around the world is about 3,50,000 [3]. Some estimate that web based electronic commerce will reach \$ 5 trillion by 2010.

Electronic data Interchange (EDI): Which is the core of e-commerce system. EDI is the interchange of documents in a standard format between trading partners. The exchange of information can take place between organizations having different hardware, operating system and applications. The basic features of EDI are computerized processing system, EDI Message Standard, EDI translation software and data communication system.

Very Small Aperture Terminal (VSAT): VSATs are specialized earth stations equipped with transceivers capable of uplinking as well as down link video, voice and data signals. Satellite communication utilizes VSAT technology utilizing VSAT technology allows the rapid introduction of sophisticated telecom services to the developing countries with very little or no terrestrial infrastructure facilities. Actually the evolution of VSAT technology has changed the VSATs image from a secondary choice to a viable necessary for corporations and ISPs across the world.

Asymmetric Digital Subscriber Line (ADSL): ADSL is a modem technology, converts existing twisted-pair telephone lines into access paths for multimedia and high-speed data communication. It depends upon advanced digital signal processing and creative algorithms to squeeze so much information through twisted pair telephone lines. ADSL technique can transmit up to 6 Mps to a subscriber, and as much as 832 Kbps or in both directions. Such rates expand existing public information network from one to voice, text and low resolution graphics to a powerful, ubiquitous system capable of bringing multimedia, including full motion video, to everyone's home this century. By brining movies, television, video catalogs, remote CD-ROMs, corporate LANs, and the Internet into homes and small businesses, ADSL will make these markets viable, and profitable, for ISPs, telephone companies and application suppliers alike.

Scope of E-Commerce

E-commerce may offer new and substantial benefits to the consumers including convenience, access to a wide range of goods and services from manufacturers and retailers all over the world, and the ability to gather and compare information about such goods and services. With e-commerce, it is possible to have paperless office, borderless business and a platform for on-line trading remains open round the clock.

The Internet has made it possible for business to interact directly with both the suppliers and end-users without having to go in for heavy investments. Anybody with a web browser could directly make a purchase from any part of the world. Similarly, anyone with a web server

could run a multi-million dollar business without having to invest in godowns, and other distribution and rental infrastructure. The Internet not only changed the rules of business, but also the frontiers. Today, if you have a presence on the web, then the world is your customer. Table-1 shows how business frontiers are being changed through the application of the Information Technology/Information and Communication Technology (IT/ICT) especially through the Internet in the form of e-business and e-commerce. Fig. 2 shows [8] the speed of technology adoption and thus it indicates how fast the changes are taking place in day-to-day life.

Component Industries	Traditional	Digital Phase-I	Digital phase-II
Media	TV	CD	Virtual reality
Transaction	Manual	EDI	Self-trading
Financial services	Teller/bank	ATM	Integrated settlement
Retailing/ sourcing	Store	Home shopping	On-line customization
Advertising	Mass advertisement	New media	Information on demand
Technology	Paper	Digital devices	Internet
Communication	Voice	Telephone	Internet

Table-1: Reshaping of the traditional business through Internet

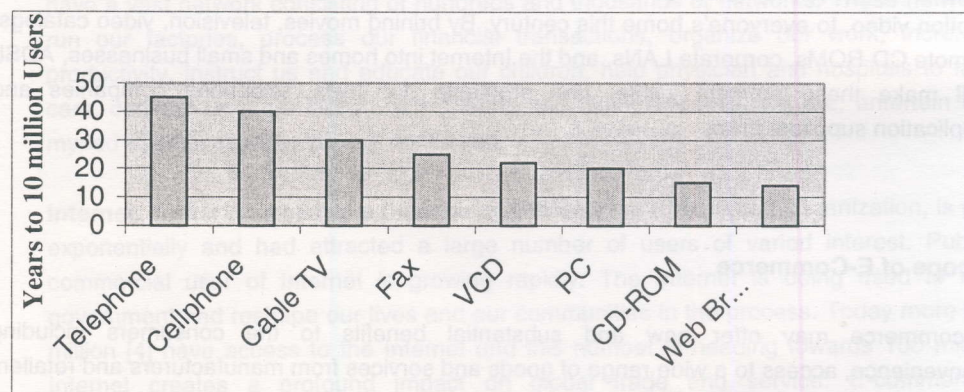


Figure 2: Speed of technology adoption

Prospects of E-Commerce

E-commerce has created opportunity to compete successfully in providing digital products and services to global market around the world. E-commerce open up a new horizon for the rural as well as urban population if they could have access to information regarding agriculture, shrimp culture, arts and crafts etc. Already a lot of enterprises in the developing countries are offering their products and services through e-commerce. These virtual shops create a window of opportunities for business and enterprises to sell their services and products in the global market. For example Bangladesh, which introduced online in 1996 is fast adapting itself to the new technology. At present approximately 51 [3] Internet Service Providers (ISP) with VSAT providing dialup Internet connection and leased lines. More than 100,000 [3] computer users are enjoying the Internet facility by these ISPs including Bangladesh Telephone and Telegraph Board (BTTB).

E-commerce has been identified as an area of duty free access in for all the developing countries the Second Ministerial Meeting of the World Trade Organization (WTO)[4]. As a member of the WTO, most of the developing countries has got the opportunity to put its domestic front and can reap the benefit of e-commerce by increasing the duty free export of software electronically. To take the full advantage of the vast potential of IT, the government of the developing countries needs to declare computer software and data processing as a thrust sector. In order to facilitate rapid private sector investment in IT, government should lower the tax to install VAST channel, special bank loans and incentives, decision to establish special IT park and also to consider exempt duties on computer and accessories.

The multinational commercial banks operating around the world are using IT since long and a few of them become pioneers in electronic transaction via Automated Teller Machine (ATM). For example, Standard Chartered Grindlays Bank, Hongkong Shanghai Bank Corporation (HSBC), American Express Bank and others provide 24 hours Money Link service by ATM. In fig.3 shows [8] how retail and hospitality, banking and utilities have the best prospects in terms of e-commerce.

Barriers of E-Commerce Development

E-commerce involves a number of players such as buyers, seller and the Internet service provider, which have their own concern. Buyers and sellers will be concerned with validity and enforceability of contracts, together with issues like evidence and security of electronic transactions. ISPs will also be concerned about their legal liabilities. Content providers on the net may face copyright problems. Different laws are therefore needed to govern each of this concern.

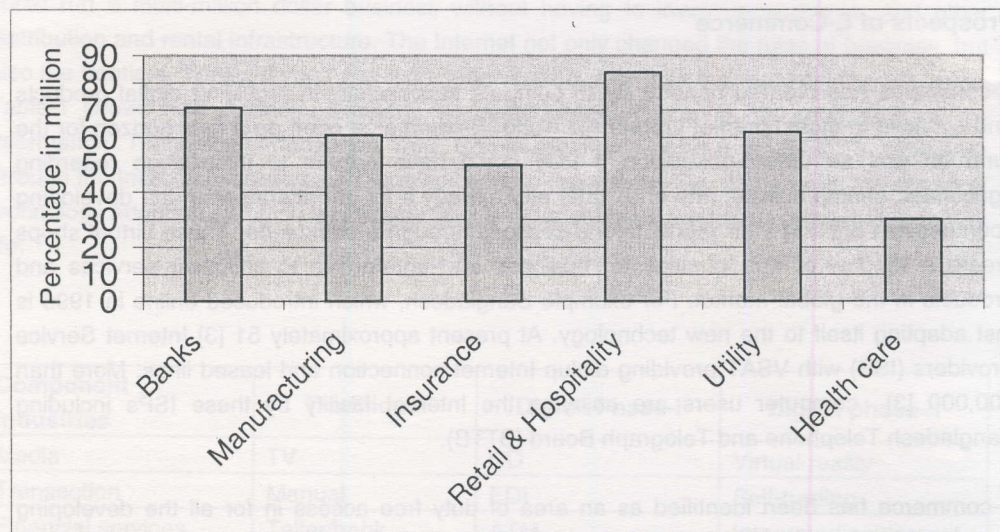


Figure 3: Industries having the best prospects

For the developing countries, still it is just the beginning of e-commerce. Government can have a profound effect on the growth of e-commerce. By their action they can facilitate the e-trade or inhibit it. The pace of growth will be hindered if the following development and legal issues are not addressed immediately that are directly associated with it.

Infrastructural development: Global Information Infrastructure (GII) including National Information Infrastructure (NII) as part of GI is the basic prerequisite for e-commerce. Access to Information Communication Technology (ITC) infrastructure as it is now a days called the key to the development of e-commerce in all developing countries. Developing countries of Asia, Africa and Latin America lacks in possessing an inadequate telecommunication infrastructure. Moreover, the infrastructure constraints make access to the international telecom and electronic networks extremely expensive. For example, Bangladesh has one of the lowest telephone densities in Asia, with a mere 0.5 lines per 100 people [4]. In terms of phone in the world connectivity, Bangladesh Telephone and Telegraphy Board (BTTB) charges are one of the highest in the world. The most effective means to enhance the infrastructure is to adopt open market option to promote investment, efficiency and innovation in telecommunication.

E-money: Development of e-commerce will need the support of a financial system that is fast, reliable, and secure. Electronic banking and electronic money will revolutionize the functioning of the financial system. In recent years some overseas and local banks introduce e-money in a limited way. Still there is no mechanism for making payment directly through the Internet.

Consumer Protection and Privacy: A major fear involved in e-commerce is security and privacy. Security and privacy need to be guaranteed. Lapses in security can be devastating, ranging from allowing customer information to be accessed by outside parties to the actual theft of credit cards and malicious tempering of content and back end systems. If the business and individuals are to conduct electronic transactions on the Internet, it must be ensured that such transaction are completely secure and hacker proof and also ensure that customer information is maintained in a secured location and not shared without customer consent. The potential of the electronic medium to intrude into privacy of individuals and corporation has already received considerable media attention abroad. So, a comprehensive cyber law is very important for the ISPs and the successful operation of e-commerce. Domestic laws and regulations [9] of individual country may be applied to protect the individual privacy in the database and transmission.

E-contract: As companies increasingly adopt electronic transaction methods, they need to be aware of the legal environment when buyers and sellers complete transaction without any face-to-face meetings or exchange of written documents. Many business and consumers are still wary of conducting extensive business over the Internet because of the lack of a predictable environment governing transactions. The practices and laws affecting product and service warranties, true in advertising, seller liability and other codes created for physical commerce will need to be interpreted or extended to include e-commerce. So, there is a necessity to redefine the validity and formation of contract. Government may consider the "Model Law" [8] of UN commission on International Trade Law (ITL), which has widely acclaimed by many countries.

Taxation: E-commerce has challenged the basic principle of international taxation such as physical presence, place of establishment etc, which has formed the basis for assessing tax liability. The Internet lacks the clear and fixed geographical lines of transit that historically have characterized the physical trade of goods. Thus, while it remains possible to administer tariff for product ordered over the Internet but ultimately delivered via surface or air transport, the structure of the Internet makes it difficult to do so when product or service is delivered electronically. As electronic commerce grows corporation, localities and governments have become more and more concerned about losing sales tax revenues from electronic transactions across borders. For the proper development of e-commerce, it should be neither to be tax advantaged nor penalized.

Education awareness: To get the benefit of e-commerce fully it is imperative to educate people in the skills required in the IT. Without IT education we cannot exploit the full potential of e-commerce. Government, business and consumer representative should work together to educate consumers about electronic commerce, to foster informed decision making by consumers participation in e-commerce, and to increase business and consumer awareness of the consumer protection framework that applies to their on line activities.

Building trust: In an electronic market place there is no or limited face-to-face contact between buyer and the seller unlike the transitional physical transactions. The transactions are impersonal, anonymous and automated. Such dehumanized business environment accompanied by all kinds of technical innovation necessarily brings up opportunities for fraud by individual consumers and corporation alike. E-commerce can always be used in a very sophisticated way and in fact there has been cases of very disturbing scams and abuses in the Internet. These include false investment promises [1] in the e-mail advertising and jam mailboxes and servers, get quick rich scheme etc. For such reasons a sense of distrust has prevailed in the evolution of many aspect of e-commerce. Individuals therefore must be protected against such crimes and dishonest practices. All participants in the game have a stake that will ensure honest value is deliver for value received. For building trust it is necessary to establish a Certification Agency (CA) [3] that is recognized by and acceptable to the international organization. That means, the system should be so designed that it builds a confidence between all players in the field of e-commerce.

Conclusions

E-commerce is the blessing of the integration of computer and telecommunication technology of the late twentieth century and it opens up tremendous business opportunities for both the innovative firms and individuals. With this rise of e-commerce, the world is undergoing a revolutionary change in social, political and cultural life. To take the full advantage of this, many government and international business around the world are trying to create a global information society, as globalization gradually focus firms to compete across geographical boundaries and meet the requirements of their client wherever they are. International policy makers are increasingly focusing open market system for the promotion, efficiency and transparency of business. Thus, for the proper development of e-commerce in the developing countries make it affordable to all walk of people, government need to address the above mentioned issues on priority basis and should adopt a non-regulatory, market oriented approach to e-commerce that will facilitate the emergence of a transparent and predictable legal environment to support global business and commerce.

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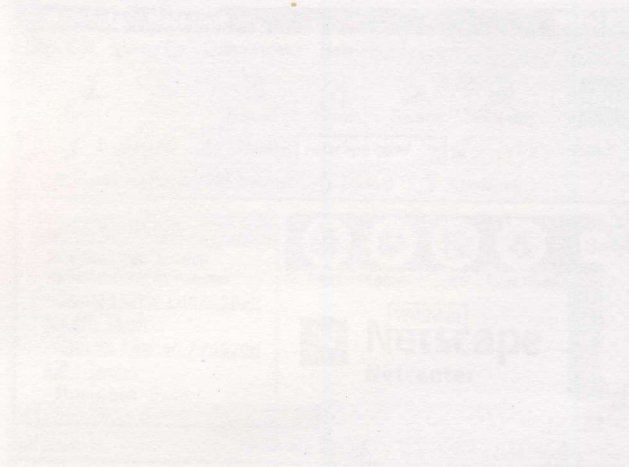


Figure 1. Netscape Web Browser

It also provides download facility for programs, games, data, updates and files. Another key feature of the Internet is the online Chat. Young people mostly students communicate online with their friends through instant and hours. The service is free of charge. Web sites are very common these days. A foreign site can be browsed in Internet via Netscape and Microsoft Internet Explorer. Search engines provide programs for searching and finding topics on the web. Most used search engines are Yahoo, Excite, Lycos, Earth, About.com and WebCrawler. These are online in the search engines as well. They provide stock quotes, yellow pages, sports search, weather, forecasts and road maps etc. Netscape is a product of Netscape Communications, a leading Internet company and a subsidiary of America Online (AOL). There are over 25 million registered Netscape users worldwide.