

Analysis of E-Commerce: History, advantages and limitations in Indian context

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Abstract

The purpose of this research paper is to make the readers aware of current scenario and status of e-commerce in India. E-commerce is widely considered the buying and selling of products over the internet. Ease of internet access, comparability of products, easily accessibility is some major benefits associated with e-commerce. Though it offers many benefits to users, there are many reasons for not shopping online like are lack of trust, security concerns, uncertainty about product and service quality, delay or non-delivery of goods and lack of touch-and-feel shopping experience.

Keywords: Electronic commerce, internet, online shopping

1. Introduction

E-commerce stands for electronic commerce, on the internet. It pertains to a website, which sells products or services directly from the site and allows payments through cards, e-banking or cash on delivery. Customers can purchase anything from anywhere in the universe just by click of a mouse. It offers several benefits to businesses like easily reaching to a fast growing online community, benefits to consumers like wide choice for selection, benefits to society like connectivity. The flip side of e-commerce suffers with some limitations such as security and privacy issues, lack of required infrastructure in country.

2. Research Methodology

2.1 Objective of the study

The primary objective of this study seeks to investigate the history of e-commerce, its merits and demerits towards the different sections of society.

2.2 Research Design

The present study is a descriptive study based on review of literature on e-commerce. For the purpose, an extensive literature review was conducted. The following databases were searched: Emerald insight, Science Direct and Google Scholar.

2.3 Historical Background of E-Commerce

Although the general public became familiar with e-commerce only in the last decade but e-commerce existed for over last 40 years. An historical analysis of e-commerce can provide insights into the evolution of the application of information and communication technologies in the past but study of its present state may enable us to project future trends in e-commerce. The origin and development of e-commerce has been through following three phases (Tian and Stewart 2007) ^[12]

2.4 Phase One: The infancy of e-commerce

The concept of e-commerce originated in 1960. It was based on EDI (Electronic Data Interchange) technique, which was used to transmit business documents from one computer to another. EDI was used for electronic transfer of a standardised business transaction between a sender and receiver computer, over some

kind of private network or value added network (VAN) but the condition was that both sides would have to have the same application software. EDI was developed to integrate information across larger parts of an organisation's value chain from design to maintenance so that manufacturers could share information with designers and other partners. EDI promoted paperless office but use of standard software to translate information was major drawback of this technique.

2.5 Phase Two: The Golden age of e-commerce

The high cost of EDI for information sharing was the major hurdle for small and medium size firms. Therefore, the diffusion of VAN and EDI communication system was slow and restricted to only for large-scaled transnational corporation. The second generation of e-commerce is characterized by the transaction of goods and services through the internet. The origin of the internet was with the establishment of Advanced Research Projects Agency Computer Network (ARPANET) for research in high technology areas. Then, in 1983, the internet protocol (IP) became the only approved way to transmit data online, enabling all computers to exchange information equally. In 1986, NSFNET was launched by an agency of United States of America to provide high speed communication between super computers (Anthes, 1994) ^[11]. The internet had still maintained its non commercial nature till the end of 1980 and all of its networks were based on the free use of the NSFNET backbone, directly or indirectly. It was used only by scientists and engineers working for the government or universities (Eccleson, 1999) ^[6]. In 1991, commercial restriction was removed by NSFNET on the use of the network and thereby opened up opportunities for e-commerce. Advanced Network & Services (ANS) established by IBM and MCI communication corp. provided internet connection to commercial users without government restrictions on commercial traffic online.

The term e-commerce came into fashion in 1995 with the launch of www.amazon.com, the world's largest online bookstore. It became a multimillion dollar business with a database of 1.1 million books searchable by title, author or subject within one year. Many enterprises made a big success by online direct marketing such as Dell Company,

distinguished for direct online selling in 1996. Internet became the fastest growing technology in mid of 1990's. Investors, businesses and consumers all were attracted by e-commerce during this period. Many companies entered in e-commerce business by conducting online transactions. From October 1998 to April 2000, more than 300 internet companies made initial public offerings (Cassidy, 2002) [5].

The flourishing of internet made flood of enterprises unable to resist the temptation to start e-commerce. The cheapest mode of sending information globally made this technology popular across the world. The flexibility in use was another factor.

2.6 Phase Three: Concept of E-commerce

Since 2000, it was realized that e-commerce is in fact the combination of information technology and commerce applications. Apart from business, electronic information technology was successfully applied in many other fields, such as education, military and administration. For instance, satellite education is the combination of information technology and education; net banking is combination of technology and finance.

2.7 Benefits of E-Commerce

E-commerce gives multiple benefits to all parties of business. The major benefits are that it may reduce capital needs through lowering inventory requirements and savings in labour cost by automation of internal transactions. It may increase the efficient use of inputs in general (speeding-up internal processes, backward and forward linking of the information and communication technology (ICT) infrastructure, lowering transaction costs at the interface with users and suppliers). E-selling may also increase product quality in various ways as customisation, variety and convenience or support the development of new market segments whereas E-purchasing may improve the knowledge of (alternative) sources of inputs and ease the access to suppliers (Heinz Hollenstein and Martin Worter, 2004) [9].

More specifically, the benefits of e-commerce can be seen to affect three major stakeholders: organisations, consumers and society.

3. Benefits of E-commerce to organisations

3.1 Expands Geographical reach

Expanding or opening an e-business can create a world of opportunity and helps to establish new relationships with potential customers, potential business associates and new product manufacturers. Owning an e-commerce business typically means no limits as to whom and where you can sell your products. Physical marketplace located in a geographical area will now become a borderless marketplace including national and international markets. Businesses now have access to people all around the world and became virtual multinational corporations.

3.2 Better Availability of Information

Online commerce enables better access to product and price information for all involved including buyers and sellers, producers and distributors. Search agent software allows users to look for the lowest prices around the world. A new breed of 'infomediaries' has emerged to bring complete product information to customers. www.mysmartprice.com is the best example for citation. Distance and time become less relevant as

companies are able to reach their business partners across the globe and serve their customers quickly and round-the-clock. Producers can choose a place for production and customer service much independently from the location of their customers.

3.3 Potential to Increase Overall Business Sales and Profits

Sales and profits are the lifeblood of any company. An e-commerce store that is an extension of a physical storefront is a great way to boost overall business sales and potentially increase company profits across the board. Online businesses help to add new customers and boost the sales where ever possible and whenever possible. More sales add more profits. The ability to shop from home allows many people who have trouble getting to real world shops such as elderly or disabled people (Brynjolfsson and Smith, 2000) [3].

3.4 Reduction in Costs

Online businesses can reduce the costs of running their business due to fact that internet is much cheaper than value added networks (VANs) which were based on leasing telephone lines for the sole use of the organisation and its authorised partners. It is also cheaper to send a fax or e-mail via the internet than direct dialling. Thus cost of creating, processing, distributing, storing and retrieving paper-based information also decreased. An e-commerce store requires less employees including sales staff, customer service representatives, order fulfilment staff and also do not need a physical location in order to stay operational, which can reduce costs related to building leases, phone bills, utility costs and other costs associated with running a brick-and-mortar storefront. Companies can collect the customer order, transmit them electronically to manufacturing unit and then deliver through just in time system to reduce the inventory cost.

3.5 Increases Brand or Product Awareness

A company can create branding by word of mouth advertising in on line business due to 24/7 access by customers. Having an online business means that you can literally reach out to millions of consumers looking for what you sell anywhere in the world. By reaching out to new markets and displaying your site prominently in front of them, you will be able to help increase your company/domain brand name and also increase awareness about your product line in turn helping to promote your brand name and products. The online channels are the most effective channels for advertising for new products, where consumers usually know about the information that the consumers need before shopping.

3.6 Enhance Customer Loyalty and Mass Customization

E-commerce business can attract customers with the unique display and describe the product offerings in informative and attractive visual style. Customers can configure products and services according to their specifications within minutes. Online sites helps to create an easier means for customers to purchase, improve customer satisfaction and visitor loyalty. The product line offer for online sale will enable the customer to shop from catalog more easily, get updates on new items or product discounts and can shop or buy anytime they wish. Its pull type processing allows for products and services to be customised to the customer's requirements.

3.7 Open for Business 24x7

An e-commerce site has the ability to have unlimited store hours, giving customers 24 hours in a day, 7 days in a week access to shop online. Some corporate works five days in a week but orders can still be made over the weekend and customers can still make contact 24/7 via email, phone or fax. You can literally take orders and let customers shop while you sleep, take vacations or from remote locations. In addition, the costs associated with having your store open all the time are much less than brick and mortar system with 24/7 operation capability. (Kaplan and Sawhney, 2000) ^[10].

4. Benefits of E-commerce to Consumers

4.1 Wide choice for selection

Customers can pick and choose from a wide range of products available on e-commerce web site without any geographical limits. It reflects a functional and utilitarian motive, wherein consumers have a wide access to a large range of products to choose and buy from, thereby reducing their physical efforts and shopping time. It implies freedom from the effort and complexity involved during the shopping process (Fang, 2002) ^[7]. Most online shopping stores provide a product search engine, a navigation sequence guidance function and a section on help and frequently asked questions to help consumers who search and purchase (Bingi *et al.* 2000) ^[2].

4.2 Price Comparison

E-commerce websites display all the information of products regarding its features, price along with competitive products in a comparative format to make the decision quickly and easily by customers. Moreover customers can directly visit the different sites before finalising the buying decision (Brynjolfsson and Smith, 2001). Due to high degree of competition in online business providers, customer can get benefit from this price war by availing heavy discounts.

4.3 Personalization

E-commerce provides mass customization to consumers, where they can get customised products and information as per their need and preferences (Hof, Green and Himelstein, 1998) ^[8]. Online sites offers these products and services according to the individual's demographic and preference characteristics, whether offered voluntarily or obtained through unobtrusive tracking of browsing and purchase patterns. At present some sites like www.vistaprint.com and www.printvenue.com are serving various personalized products online.

4.4 Improved Delivery Process and Easily Accessible

E-commerce sites make the delivery process faster as comparison to traditional physical stores. Immediate delivery of digitised or electronic goods such as software or audio-visual files by downloading via the internet is best example to cite. It enables customers to shop or conduct other transactions 24 hours in a day, 365 days in a year from almost any location in this world. For example, checking balances online, making payments and obtaining any other information as and when need.

5. Benefits of E-commerce to Society

5.1 Flexible Working Hours

E-commerce provides more flexible working practices to their employees to work at home which enhances their quality of

life. It is more convenient and provides happier and less stressful working environments, also potentially reduces environmental pollution as fewer people have to travel to work regularly.

5.2 Connect People

It enables people to stay connected with others for information sharing, express their feelings, ideas and facts by removing national boundaries as in case of electronic mail, social sites available in all countries either developed or rural which otherwise would not be so easily available to them.

5.3 Accessibility of Information

E-commerce sites allow the users to rapidly assemble information from numerous virtual stores, in a negligible fraction of the time (Brynjolfsson and Smith, 2000) ^[3]. Buyers can easily search about the prices and product features of sellers offering. Hence, it saves opportunity cost of time searching as well as associated expenditures such as telephonic calls and driving. E-commerce facilitates delivery of many public services as online railway reservation, health services, online banking, online payment of insurance premium, filling taxes over internet etc.

5.4 Limitations of E-Commerce

Every new technology has pros & cons and e-commerce is no exception of this. There was much hype surrounding e-commerce over the last few years of the twentieth century. EC was promoted as a solution for all problems, which raises the question, are there any limitations of e-commerce? These limitations are dealt with according to the three major stakeholders – organisations, consumers and society.

5.6 Limitations of E-commerce to Organisations

1. Lack of Reliability and Security

Now days, there are various news about hacking of websites and databases, which shows security holes in software of big corporate houses. Several software making companies websites have experienced breaches in security systems led to confidential client information becoming available to all. Therefore concerns regarding security of electronic transactions such as problems of data protection, security of online payment or the legal framework for e-commerce may be an important obstacle for the organisations. (Tuerk 2001) ^[13]

2. Increase in Cost

Whenever a business organisation tries to establish a new on line business, it requires a huge investment for setting new infrastructure. More problems arise for an existing businesses when older business systems cannot communicate with web based and internet infrastructures. Further on the revenue side, start-up companies face tough competition from both national and international competitors which often leads to price wars. Therefore online business increases the financial cost as well as disturbing to the efficient running of organisations.

3. Limitations of E-commerce to Consumers

4. Capital Investment and Technical Skills

Some basic infrastructure like computer and internet connection is required to get the benefit of online shopping for a customer. An individual has to incur an initial capital cost for purchasing the equipment, running cost to access internet and

to keep the system update regularly to be compatible with changing requirement of websites and internet. Moreover it also requires some basic knowledge and technical skills to operate the internet and to do online shopping.

5. Lack of Privacy and Security

Privacy and security are major concerns on the part of customer. There is no real control of data that is collected over the website or internet because data protection laws and regulations are not universal. Cyber laws are not really effective and unable to prevent from hacking the personal data which creates more harmful problems especially in financial transactions.

6. Lack of Satisfaction

Customers are very sensitive in making the final decision of purchase the product, they want to touch the product, need demonstration and enjoyment of shopping. E-shopping sites cannot provide these features and enjoyment of real shopping as there are no physical contact and relation between supplier and customer.

6. Limitations of E-commerce to Society

6.1 Less Human Interaction

As E-commerce is growing rapidly and people become more used to interacting electronically there could be an erosion of personal and social skills which might eventually be detrimental to the world we live in.

6.2 Promote Capitalism

E-commerce is more successful in developed countries due to better infrastructure and technical man power. More and more developing countries are imitating these capital intensive techniques blindly without taking the care of huge illiterate population. There is a potential danger that there will be an increase in the social division between technical experts having better jobs and those people who do not have technical skills become unable to secure better-paid jobs. It could form a class difference that can be dangerous implications for social stability.

6.3 Types of E-Commerce

6.4 Business-to-Business E-commerce

Major share of E-commerce applications are from B-to-B which means as exchange of products, services and information between companies. This type of E-commerce deals with relationships between and among businesses. It includes direct selling and provides more efficient information channel which leads to saving in effort, time and money spent. Companies may search the vendors on-line, request their proposals and give their orders by finding the competitive price to save time and cost of searching.

Most experts predict that B-to-B ecommerce will continue to grow faster than the other segments of e-commerce. Best practice models are IBM, HP, Cisco and Dell. Most B-to-B applications are in the areas of supplier management (especially purchase order processing), inventory management (i.e., managing order-ship-bill cycles), distribution management (especially in the transmission of shipping documents), channel management (i.e., information dissemination on changes in operational conditions), and

payment management (i.e., electronic payment systems). (Yazdanifard, Wada, Sade and Yusoff 2011) ^[14]

6.7 Business-to-Consumer E-commerce

Business-to-consumer e-commerce, or commerce between companies and consumers, provides consumers with access to a wide range of online shops via internet. Customers can purchase physical goods (i.e., tangibles such as books or consumer products) or information goods (electronic material or digitized content, such as software or e-books). Some of the most successful B-to-C products and services to date are software, books, travel services, entertainment and financial services. The B-to-C online activity is mostly informational rather than transactional. Delivering information goods becomes increasingly feasible for countries like India, with a growing and robust internet population. (Stoneman and Karshenas 1993) ^[11].

6.8 Business-to-Government E-commerce

Business-to-government e-commerce means the exchange of products, information and services between business and the public sector agencies online. This includes transactions between government and business, government and citizen, government and employee, and among different units and levels of government. Government agencies may purchases the desired products and services through e-procurement that reduce the risk of irregularities and increase the transparency of procurement process.

B-to-G also provides a virtual workplace where government agencies control the projects by conducting online meetings and manage the progress. Governments can create a database of rules, regulations and laws for industrial sectors and provide online payment facilities. It provides citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes (Buzzell and Ortmeyer 1995) ^[4].

6.9 Consumer-to-Consumer E-commerce

Consumer-to-consumer e-commerce is simply commerce between private individuals or consumers. In this category consumers interact directly with other consumers to exchange their ideas, opinions and information. Here customers can bid for what they want from among multiple suppliers such as www.olx.com which facilitate buying and selling between customers only (Stoneman and Karshenas 1993) ^[11].

6.10 Mobile Commerce

Mobile commerce is the latest type of e-commerce where mobile users can buy and sell the goods and services through their hand held device by using wireless technology. M-commerce provides the fast content delivery with more security for digital commerce transactions. It is most economical mode for sending the data and its acceptability is high due to large number of smart phone users than internet users. M-commerce is successfully adopted by financial sector where customers use their mobiles to access their accounts, insurance sector send policy updates to policyholders and stock broking firms uses m-commerce to display the stock prices. (Stoneman and Karshenas 1993) ^[11].

7. Conclusion

The past few years have seen a rise in the number of companies embracing e-commerce technologies in developing countries and the volume of e-commerce has been growing very fast. However, as compared to developed nations, developing countries still have been lacking in e-commerce. The study identified some of the reasons that may be responsible for lack of e-commerce in developing countries.

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