

Electronic commerce environment: (Economic Drivers and Security Issues)

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Abstract: This paper analyzes the development situation and a lot of issues in E-commerce at present, including trade safety issue and pertains to trading in goods and services through the electronic medium. Overall, the study provides improved understanding of a growing awareness among the business community in global about the opportunities offered by e-commerce. This article is based on a literature review that emphasizes the need for increased security and privacy measures in current E-commerce environment.

Keywords: E-commerce; security issues; services; e-commerce environment, commerce service provider

I. INTRODUCTION

Definition: "E-Commerce is the buying and selling of goods and services on the Internet, especially the World Wide Web. In practice, this term and a new term E-Business, are often used interchangeably". Electronic Commerce is process of doing business through computer networks. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products. Unlike traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. E-commerce can become an integral part of sales strategy. While it is one of the cheapest mediums to reach out to new markets, if implemented successfully, it offers a smart way of expansion and doing Business. E-commerce attributes successful implementations to carefully understanding of products, customers and business process. E-commerce platform is Designed & Developed to maximize its reach to the potential customers and provide them with a convenient, satisfying & secure shopping experience. The key factors that focus on to build Online Business includes: [1,2].

- Attracting potential customers
- Providing Brand identity
- Building trust relationships
- Providing easy-to-use interface
- Maintaining security
- Building customer loyalty.

Electronic commerce involves all sizes of transaction bases. Electronic commerce different from the EDI systems that have been in place for the past 20-30 years. EDI is subset of electronic commerce. Hence Electronic commerce has

become a buzzword for businesses over the past few years, with increased awareness about the use of computer and communications technologies to simplify business procedures and increase efficiency. Combining a range of processes, such as Electronic Data Interchange (EDI), electronic mail (e-mail), World Wide Web (WWW), and Internet applications, e-commerce provides ways to exchange information between individuals, companies, and countries, but most important of all, between computers. In a simplistic, e-commerce is the movement of business onto the World Wide Web. This movement has been broken up into two main sectors business-to-business (B2B) and business-to-customer (B2C). E-commerce comprises core business processes of buying, selling goods, services, and information over the Internet. The e-commerce information available on the Internet is huge and still growing [1]. New E-commerce will present over time countless opportunities and challenges to our economies and societies. Expansion of commerce and technological innovations are two of the levers of economic growth. These forces are combined in the progress of E-commerce. The macroeconomics effects of E-commerce on the national and regional economies and on the international trade and its terms will need to be assessed and analyzed. The prevailing judgment at this stage of E-commerce development is to allow free-market forces to assert themselves unhampered by excessive government regulation. The traditional institutions, such as banks of issue, commercial banks, universities, established business intermediaries, media and publishing companies, would find a need to redefine their roles in the new environment. The taxability of products traded globally over the Internet is as yet an open issue. Intellectual property that can be converted

to on-line content may find itself reevaluate in the global marketplace [2]

II. RESEARCH METHODOLOGY

A. Need of study

We are the age of knowledge and consequently in the midst of an electronic revolution, the impact of which on the economy is much more profound than that caused by the industrial revolution. This modern-day revolution, at the global level, has manifested itself in the form of many innovations and breakthroughs and giant leaps in internetworking technology. With these new opportunities, people can now transcend the barriers of time and distance with the Internet's speed. E-commerce refers to aspects of online business involving exchanges among customers, business partners and vendors. E-commerce has increased the speed and ease with which business can be transacted today, resulting in intense competition between enterprises. Companies are at the crossroads, which just two vistas ahead of them-either go online or go out of business. It is very clear for the above discussion that E-commerce is the new way for doing business. If not today tomorrow E-commerce become synonym with commerce. Hence, the need is felt to undertake a study an e-commerce with specific reference to India with regard to practices, problems and prospects.

B. Objective of the study

The main objective of the study is to analysis the developments and growth of e-commerce as well as the problem and prospective of e-commerce in real time. Hence the other specific objectives of the study are:

- To find out the origin, development and growth of e-commerce in the world.
- To exam the practices of e-commerce organizations in the world and problems emerging from the practices.
- To study prospects of e-commerce in real time in days to come.

C. Scope and limitations

The study covers concept and application of e-commerce along with the problems associated with the practices, thereby the future prospects of e-commerce in terms of its growth in revenue, transactions etc., though the study in very comprehensive in nature.

III. E-COMMERCE ENVIRONMENT

We are the age of knowledge and consequently in the midst of an electronic revolution, the impact of which on the economy is much more profound than that caused by the industrial revolution. This modern-day revolution, at the global level, has manifested itself in the form of many

innovations and breakthroughs and giant leaps in internetworking technology. With these new opportunities, people can now transcend the barriers of time and distance with the Internet's speed. Online business applications, the infrastructure services and the commerce solution providers all exist within the structure's overall electronic commerce environment. The e-commerce environment is comprised of the following elements [2,7].

- **Legal and regulatory framework** – For electronic commerce to flourish there needs to be a conducive legal and policy environment. Businesses need to know that when they conduct business online, they enjoy the same legal protections as traditional businesses [7].
- **Standards** – It is necessary to establish a set of open, industry-led, technical standards in the areas of network protocols, security, e-mail and directories, electronic commerce, and information sources and exchange. The standards facilitate interconnection and interoperability of businesses over networks [7].

IV. INFRASTRUCTURE SERVICES

- **Network services** – These services provide the networks that link online businesses. These services are provided by Internet service providers.
- **Directory services** – These services allow customers to search for information or websites based on various search criteria.
- **Security services** – These services provide secure identification and secure communication over the Internet. Many tools for these purposes are available commercially.
- **Content protection services** – These services provide IPMP tools that supply the protection needed by content providers. These tools shall be as transparent as possible so that the entire process is not excessively weighed down in terms of time consumed. IPMP tool provider services shall be as efficient as possible (fast server for tools retrieval, light-weight tools to be downloaded, limited resource demanded on the local device) [7].
- **Payment services** – These services enable secure payments over the Internet.

V. COMMERCE SOLUTION PROVIDERS

Commerce solution providers (CSPs) are organizations that offer complete end-to-end solutions for businesses that choose not to, or do not have the capability to, implement e-commerce systems on their own. There are two categories of CSP:

- **Business to consumer services:** These CSPs create and host electronic commerce websites for merchants who sell directly to individuals.
- **Business to business services:** These CSPs provide services for electronic commerce between businesses.

VI. ECONOMIC DRIVERS OF E-COMMERCE

Four broad themes have emerged as important for understanding the economic and social impact of electronic commerce:

1. **The effect on the marketplace:** *Electronic commerce transforms the marketplace.* It will change the way business is conducted traditionally new products and markets will be developed, new and far closer relationships will be created between business and consumers. It will change the organization of work: new channels of knowledge diffusion and human interactivity in the workplace will be opened, more flexibility and adaptability will be needed, and workers' functions and skills will be redefined [3].
2. **The catalytic role:** E-commerce will serve to accelerate and diffuse more widely changes that are already under way in the economy, such as the reform of regulations, the establishment of electronic links between businesses (EDI), the globalization of economic activity, and the demand for higher-skilled workers. Likewise, many sectorial trends already under way, such as electronic banking, direct booking of travel, and one-to-one marketing, will be accelerated because of electronic commerce [3,4]
3. **The impact on interactivity:** E-commerce over the Internet vastly increases interactivity in the economy. These linkages now extend down to small businesses and households and reach out to the world at large. Access will shift away from relatively expensive personal computers to cheap and easy-to-use TVs and telephones to devices yet to be invented. People will increasingly have the ability to communicate and transact business anywhere, anytime. This will have a profound impact, not the least of which will be the erosion of economic and geographic boundaries [3,4]
4. **Openness:** Openness is an underlying technical and philosophical E-net of the expansion of electronic commerce. The widespread adoption of

the Internet as a platform for business is due to its non-proprietary standards and open nature as well as to the huge industry that has evolved to support it. The economic power that stems from joining a large network will help to ensure that new standards remain open. More importantly, openness has emerged as a strategy, with many of the most successful e-commerce ventures granting business partners and consumers unparalleled access to their inner workings, databases, and personnel. This has led to a shift in the role of consumers, who are increasingly implicated as partners in product design and creation. An expectation of openness is building on the part of consumers/citizens, which will cause transformations, for better (*e.g.* increased transparency, competition) or for worse (*e.g.* potential invasion of privacy), in the economy and society [3,4].

VII. SECURITY ISSUES IN E-COMMERCE

Many experiences in recent years have shown that protection mechanisms for products destined to the large consumer market are subject to an impressive amount of technically skilled attacks. Therefore, a fundamental requirement of security engineering is that the system shall be as "patchable" as possible. This means that the protection scheme shall not be "frozen" within the technology that implements it, otherwise the damages of a successful attack could not be repaired without changing the whole technology (*e.g.* players, physical supports, etc.). [9,10]. In e-commerce development security is a critical factor to consider [9]. It is one of the pivotal success factors of e-commerce. Security is defined as "the protection of data against accidental or intentional disclosure to unauthorized persons, or unauthorized modifications or destruction" [9]. It usually refers to the provision of access control, privacy, confidentiality, integrity, authentication, non-repudiation, availability and effectiveness [9][10]. Surveys conducted and compiled recently shows increasing concerns on security risks and have become a global issue [9]. When customers lose confidence in a systems ability to protect sensitive and confidential data such as credit card information its feasibility will be compromised. The system t thus will be rendered helpless [9]. Electronic commerce has been weakened by the deterioration of confidence held towards it by the consumer public. This in turn poses an immense threat to the overall expansion and success of it. [9]. In fact, Hoffman et al. stated that 63% of online end-users intentionally delay when providing personal information due to diminished confidence and trust in sites [9]. If credibility is to be achieved, improvised security and privacy protocols should be incorporated [9]. At present security is pivotal and concerns surrounding its efficiency is perhaps the key cause for web users not making online

purchases [9]. The US based Better Business Bureau confirmed that online security was a great concern in 2001[10]. Types of security threats include identity theft i.e. the illegal use of personal information and is in fact the USA's leading occurrence of fraud [9] [10]. List of other threats include gaining physical access to premises, accessing wiretaps, unauthorized acquiring of information, viruses, lack of integrity, financial fraud, vandalism, etc [9][10]. Reasons for high security risks include the imperfection of e-commerce laws, regulations, systems, technology and the internet [9]. Security is a key integral issue for users, regardless of what the application maybe, ranging from locking a computer to conducting business via the internet [9]. The rapid development of e-business and e-commerce applications have resulted in increased the amount of illegal infiltration into information systems which were deemed initially safe [9]. Since E-commerce is completely reliant on IT, it could be stated that future developments in e-commerce will solely depend on IT security and risk management [10]. Garg *et al.* states that "a percentage between 36 and 90 percent of organizations confirmed security breaches in the past year alone" [9]. These statistics help increase or maintain customer's negative perception of the e-market and explains why a lot of people are fearful or insecure about buying or performing sensitive transactions online. It seems like the only solution to extract the problem and increase e-sales is to provide fully secured networks that guarantee confidentiality and safety. It is however not that simple. Technologies that provide flawless security measures and guarantees are very expensive and in most cases not easily acquired. Web based e-commerce is compromised of hyperlinked web pages alongside applications and incompatible technologies to bring about business transactions amongst different companies spanning the globe [9]. Therefore, even if a business tries to deploy error free security software, success is not guaranteed as there are many factors influencing the flow and security of information in cyberspace. Moreover, in order for e-commerce to develop customer trust, the change has to be done in a collective manner, not just a few companies. In the case of small to medium businesses it is difficult and costly to incorporate complete IT security [9]. Leaving aside the multifaceted technologies required, e-commerce systems are founded and based on the World Wide Web which coincidentally has a history of exposure to a variety of security threats [10].

VIII. CONCLUSION

Every day more people connect to the Internet and grow increasingly comfortable with digital transactions. The successful companies of the future will be those that take e-commerce seriously, dedicating sufficient resources to its development. E-commerce is not an IT issue but a whole business undertaking. Companies that use it as a reason for completely re-designing their business processes are likely to reap the greatest benefits.

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