

The protection of e-consumer in the e-commerce: Main issues

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Abstract

E-Commerce, though relatively a new concept of doing business, has changed the way of doing business by a significant extent. It has become one of the major factors contributing to the globalization of businesses. It has substantial impact on trade and consumer welfare at national, regional as well as at multilateral levels. Voluminous efforts are going on to negotiate multilateral rules of digital trade. The last years have experienced a paradigm shift in the global trade arena with developing countries taking the lead in proposing E-Commerce as a catalyst of achieving socio-economic developmental objectives through trade.

This research paper aims at reviewing challenges and status towards E-Commerce sector in the context of cross-border trade, consumer protection and competition issues. It also identifies the important aspects of consumer protection in E-Commerce.

Key words: E-commerce- e-transactions- protection - consumer.

Introduction

As the world economy shifts further into the digital sphere, the nature of global commerce continues to change. Electronic commerce traditionally referred to the buying and of goods and services online and has begun to include a

new range of business opportunities that stand to disrupt existing industries. Digitally traded goods and services, digital content, and data analytics are fast becoming globally traded commodities. E-commerce is not only giving rise to new goods and services, it also provides a channel for engaging a broader range of

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businesses, including small and medium enterprises and women entrepreneurs, in international trade.

E-commerce has disrupted the way the retail industry works. It provides both opportunities and threats for businesses and consumers. Businesses are able to initiate a global distribution and face no constraints on shelf space, while consumers have a variety of products or service offers enabling them to buy products or services at a reasonable price. On the other hand, when buying online, consumers face the various risks such as unsecured online payments, product unsafety and inaccessible dispute settlement.

Obviously, e-commerce advancement opens up a lot of opportunities for any country that is willing to take its advantages. Although e-commerce opens up opportunities for countries, e-consumers seem to be at a disadvantaged position compared to their electronic merchants or traders counterpart. Hence, the need to come up with legal framework protecting the e-commerce consumers against, inter alia deceptive and unfair trade practices coming from the part of the e-traders.

This research paper attempts to lighting up E-commerce and E-consumer protection, for this purpose we shall follow the following plan of study:

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I- Conceptual framework of E-commerce & E-consumer protection

Electronic commerce platforms allow for Internet-enabled trade in unprecedented ways. With its ubiquitous reach, the architecture of electronic commerce provides a dynamic and collaborative platform to business and consumers. Consumers get to choose from a whole range of goods and services across the world, from anywhere and at any time. Businesses are constantly innovating new technologies in order to adapt to new and evolving challenges in the area of e-commerce. In order to better understand the two notions we are going to study first the concept of e-commerce, then the concept of e-consumer and its protection as follows

I-A. E-commerce

With the emergence and development of new media technologies such as the Internet, people and businesses have increased their reliance on, and their use of these mediums as an avenue for commerce as it can be more convenient. This new avenue is referred to as e-commerce, which has disrupted the way the retail industry works. It provides both opportunities and threats for businesses and consumers.

At present, there is no consistent and unique definition of e-commerce. Each state or organization has adopted its own definition, which has been dictated by each system and in consideration of the economic interests of each. It follows that the choice of this definition can have many practical and legal implications¹. We are going to set the definition of e-commerce first, then its categories as follows:

A-1. Definition of E-commerce

Electronic commerce (e-commerce), like all concepts is the subject of varied definitions, and most times, the definition applicable would depend on the context in which it is used. E-commerce has been defined as "*sharing business information, maintaining business relationships and conducting business transactions by means of telecommunications networks*"².

According to the Organization for Economic Cooperation and Development (OECD), e-commerce has no universal definition³. An attempt to define e-commerce was made by the Concise Oxford English Dictionary to the effect that e-

¹ Rakotomalala Zoniaina Fitahiana, Etude sur la fiscalité du commerce électronique: enjeux et perspectives, mémoire de fin d'étude, Ecole Nationale d'Administration de Madagascar, section d'inspecteur des impôts, promotion SEDRA, Madagascar, 2012, p6.

² V.Zwass, Structure and macro-level impacts of electronic commerce: from technological infrastructure to electronic marketplaces, available at: <http://www.mhhe.com/business/mis/zwass/ecpaper.html>, seen : 18 August 2019.

³ Organisation for Economic Cooperation and Development (OECD), Report on Electronic Commerce: Opportunities and Challenges for Government (OECD, 1997),p. 20.

commerce means "*commercial transactions conducted electronically on the Internet*"¹.

For instance, defined e-commerce as buying and selling of products or services electronically via the Internet and other computer networks however, defined e-commerce as a business where traders use the Internet as a means of promoting and selling products and services for consumers the world over Here, the Internet allows direct communication between the trader and the buyer without meeting face to face. On the contrary, every time services are rendered and paid for on the Internet, it's e-commerce².

Thus, for the purpose of this paper "E-commerce" means transactions that involve buying and selling of goods and services with the aid of the Internet, however with particular emphasis on online shopping transactions.

A simpler definition of e-commerce that has been proffered is "*the buying and selling of products, services, and information via computer networks inclusion the internet*"³.

Electronic Commerce is often interpreted as being just Internet commerce. Take for example Patricia Buckley's definition "(...) *Electronic Commerce (i.e., business processes which shift transactions to the Internet or some other non-proprietary, Web-based system). Electronic Commerce is a means of conducting transactions that, prior to the evolution of the Internet as a business tool in 1995, would have been completed in more traditional ways-by telephone, mail, facsimile, proprietary electronic data interchange systems, or face-to-face contact*"⁴.

Another definition cited by the American Congress: "*all transactions conducted on the Internet or through Internet access, including the purchase, rental, license, offer or goods, services or information and the provision of internet access*"⁵.

A pure definition of Electronic Commerce is one by Roger Clarke, who has been working on E-Commerce related topics since the late 1980^s. He claims that Electronic Commerce is usefully defined as: "*the conduct of commerce in goods*

¹ Judy Pearsall, Concise Oxford English Dictionary, English, 10th edition, (New York: Oxford University Press Inc, 2002), p 453.

² Oladipo Bali, The Emerging Trend in E-Commerce: The Nigerian Legal Perspective, in : Legal Practice Skills and Ethics in Nigeria, ed., Kevin Ndubuisi Nwosu (Nigeria: DCONconsulting, 2004), p 123.

³ Rakotomalala Zoniaina Fitahiana, op.cit, p 6.

⁴ Patricia Buckley, The emerging digital economy II, U.S. Department of Commerce, p 1, available at <http://www.sipeb.aoyama.ac.jp/~ida/courses/emerg-dig-econ2-jun99.pdf>, seen : 19 August 2019

⁵ Rakotomalala Zoniaina Fitahiana, op.cit, p 7.

*and services, with the assistance of telecommunications and telecommunications-based tools."*¹

Finally, a very useful definition is the one of Lodder. He defines e-commerce as: "*commercial activities concerning goods and services as well as any business transaction, where participants are not necessarily at the same physical location and therefore do apply telecommunication means*"².

A-2. Categories of E-commerce

The E-commerce is very complex and can be used for different purposes. One sector is business information services, for example service selling captured customer information to others for marketing purposes. It can also be advertising found on websites and search engines³. Generally speaking, when we think of e-commerce, we think of an online commercial transaction between a supplier and a client. However, and although this idea is right, we can be more specific and actually divide e-commerce into six major types, all with different characteristics.

There are six basic types of e-commerce⁴:

1. Business-to-Business (B2B)
2. Business-to-Consumer (B2C)
3. Consumer-to-Consumer (C2C)
4. Consumer-to-Business (C2B).
5. Business-to-Administration (B2A)
6. Consumer-to-Administration (C2A)

A-2. 1. Business-to-Business (B2B)

Business-to-Business (B2B) e-commerce encompasses all electronic transactions of goods or services conducted between companies. Producers and traditional commerce wholesalers typically operate with this type of electronic commerce⁵.

¹ Roger Clarke, Electronic Commerce Definitions, available at : <http://www.anu.edu.au/people/Roger.Clarke/EC/ECDefns.html>. seen: 15 August 2019

² Arno R Lodder, Legal Aspects of Electronic Commerce, p. 4, available at : <http://www.rechten.vu.nl/~lodder/enlist/ec.pdf>. seen: 18 August 2019.

³ Malin Gustavsson, Ann-Marie Johanson, Customer trust in E-commerce, FEC 685 Bachelor dissertation – International Business Program, Department of Business Studies, Kristianstad University, December 2006, p 18, available at : <https://pdfs.semanticscholar.org/1233/5ecc78c334e19e613c302e004876ac79da7a.pdf>, seen: 23 August 2019.

⁴ José Fernandes, Types of e-commerce, available at : <https://bloomidea.com/en/blog/types-e-commerce>, seen : 25 August 2019.

⁵ Cova Díaz, What is E-Commerce? Definition, differences with other terms and first steps to follow if you want to launch your e-commerce, available at : <https://www.doofinder.com/en/blog/what-is-e-commerce>, seen: 21 August 2019.

A-2. 2. Business-to-Consumer (B2C)

The Business-to-Consumer type of e-commerce is distinguished by the establishment of electronic business relationships between businesses and final consumers. It corresponds to the retail section of e-commerce, where traditional retail trade normally operates¹.

These types of relationships can be easier and more dynamic, but also more sporadic or discontinued. This type of commerce has developed greatly, due to the advent of the web, and there are already many virtual stores and malls on the Internet, which sell all kinds of consumer goods, such as computers, software, books, shoes, cars, food, financial products, digital publications, etc.

When compared to buying retail in traditional commerce, the consumer usually has more information available in terms of informative content and there is also a widespread idea that you'll be buying cheaper, without jeopardizing an equally personalized customer service, as well as ensuring quick processing and delivery of your order².

A-2. 3. Consumer-to-Consumer (C2C)

Consumer-to-Consumer (C2C) type e-commerce encompasses all electronic transactions of goods or services conducted between consumers. Generally, these transactions are conducted through a third party, which provides the online platform where the transactions are actually carried out³.

A-2. 4. Consumer-to-Business (C2B)

In C2B there is a complete reversal of the traditional sense of exchanging goods. This type of e-commerce is very common in crowdsourcing based projects. A large number of individuals make their services or products available for purchase for companies seeking precisely these types of services or products⁴.

Examples of such practices are the sites where designers present several proposals for a company logo and where only one of them is selected and effectively purchased. Another platform that is very common in this type of commerce are the markets that sell royalty-free photographs, images, media and design elements, such as *iStock* photo⁵.

A-2. 5. Business-to-Administration (B2A)

¹ José Fernandes, op.cit.

² Ibid.

³ **Electronic Commerce**, available at : <https://www.toppr.com/guides/business-environment/emerging-trends-in-business/electronic-commerce/>, seen : 22 August 2019

⁴ Cova Díaz , op.cit.

⁵ **Electronic Commerce**, op.cit.

This part of e-commerce encompasses all transactions conducted online between companies and public administration. This is an area that involves a large amount and a variety of services, particularly in areas such as fiscal, social security, employment, legal documents and registers, etc. These types of services have increased considerably in recent years with investments made in e-government¹.

A-2. 6. Consumer-to-Administration (C2A)

The Consumer-to-Administration model encompasses all electronic transactions conducted between individuals and public administration. Examples of applications include²:

- Education – disseminating information, distance learning, etc.
- Social Security – through the distribution of information, making payments, etc.
- Taxes – filing tax returns, payments, etc.
- Health – appointments, information about illnesses, and payment of health services, etc.

Both models involving Public Administration (B2A and C2A) are strongly associated to the idea of efficiency and easy usability of the services provided to citizens by the government, with the support of information and communication technologies³.

I-B. E-Consumer protection

E-commerce has made possible low value cross-border transactions on a scale that previously was unimaginable. To a large extent, e-consumers have the same requirements and needs as traditional consumers. However, in many ways, e-consumers are more vulnerable as they typically cannot examine the product prior to purchasing it and may not know who they are buying from. In light of this, it could be suggested that the need for “trust” is even greater in e-commerce than in offline trade.

Yet businesses have been poor at creating trust in e-commerce, and in many jurisdictions consumer protection laws continue to be weak. The term “consumer” appears in European legislation, but also in international initiatives concerning the

¹ José Fernandes, *op.cit.*

² Malin Gustavsson, Ann-Marie Johanson, *op.cit.*, p 19.

³ Cova Díaz, *op.cit.*

law of consumption. Referring to an already existing situation, the main purpose of the analysis is not to justify the existence of a consumer law¹.

We are going to see the concept of E-consumer and its protection as follows:

B-1. E- Consumer definition

Before defining e-consumer we have to define first the consumer.

B-1.1 the consumer

The term “Consumer” is generic and so is of broad generalization, a “Consumer” encompasses different categories of persons². In other words, a consumer comprises all end users of goods and services. Such as users of electricity, the hirer, the hotel guest, the bank customer and the insured or policyholder, etc³. Others defined a consumer as an individual, who purchases, uses, maintains or disposes of goods or services.

A "consumer" is defined as "*a person who buys goods or uses services*"⁴, while the ECT Act defines to "*any natural person who enters or intends entering into an electronic transaction with a supplier as the end user of the goods or services offered by that supplier*"⁵. The European Distance Selling Directive defines a consumer as "*any natural person who, in contracts covered by the Directive, is acting for purposes which are outside his trade, business or profession*"⁶.

Article 2 of the Consumer Protection Act defines consumer as "*any individual who shows his/her involvement in commercial practices and activities for purposes that fall beyond the scope of his/her business*"⁷, a consumer is any individual who wishes to be provided with certain facilities or services for any of his business purposes. Another definition provided by section 20(6) names the

¹ Josef Drexler, Le commerce électronique et la protection des consommateurs, in: Revue internationale de droit économique, N°2/ 2002 tome XVI, p 408, CAIRN. INFIO, sur le lien électronique : <https://www.cairn.info/revue-internationale-de-droiteconomique-2002-2-page-405.htm>, seen : 29 August 2019

² Ibid.

³ Steven Andzenge, Regulatory Measures and Consumer Issues in Electricity Consumption, in Law and Principles of Consumer Protection, ed. Adedeji Adekunle and Shankyula Tersoo Samuel (Lagos: Nigerian Institute of Advanced Legal Studies, 2013), p 307.

⁴ Tana Pistorius, The Legal Effect of Input Errors in Automated Transactions: The South African Matrix Journal of Information, Law & Technology (JILT) ,published on 08 January 2009, available at: http://go.warwick.ac.uk/jilt/2008_2/pistorius2, seen : 13 August 2019.

⁵ Ibid.

⁶ Ibid.

⁷ Consumer Protection from Unfair Trading Regulations 2008, UK, s2, cited in : Saif Nasser Abdullah AL Mamari, General Principles of Consumer Protection in ECommerce Trade: a Comparative Study between Sharia law and EU laws, thesis for the degree of Doctor of Philosophy in Law, the University of Exeter, February 2018, p 50.

consumer as "*an individual who desires to acquire accommodation for purposes of any of his business*"¹.

It is evident from these definitions that a consumer is an individual who acts in a private capacity or might be a trader who acts in the course of his business. "The term *consumer* generally refers to a natural person, regardless of nationality, acting primarily for personal, family or household purposes, while recognizing that Member States may adopt differing definitions to address specific domestic needs"².

B-1.2 the electronic consumer (e-consumer)

The term "Consumer" in the context of our study means a purchaser of goods and services electronically via the Internet or website of e-traders and merchants. Generally and interchangeably used in this paper as "e-commerce consumer", "online consumer" or "electronic consumer (e-consumer)". It is worth pointing out here that it is the ICT development that brings about the emergence of this new group of consumers known as "online consumers" or "e-consumers"³. The e-consumers are increasing in number every day as on-line shopping becomes a new way of lifestyle across the globe today. The e-consumer in e-commerce is a consumer who buys products on the Internet. According to a study by Forrester Research, there are four categories of cyber consumer⁴:

- The "*Pioneer Internetters*" who are mainly male, urban and have high incomes and a high level of education. They essentially buy books, records and computer software online. 60% of them use Internet banking and 36% place orders on the stock market;
- The "*Generation next*" who have been using the Internet for a short time and who are buying mainly on leisure-related sites;
- The "*Future buyers*" who have not passed the online purchase stage and who are very concerned about payment security and personal data issues;
- The "*Shopping Hold-Outs*" which represent about 40% of European Internet users and who have no plans to buy online in the next six months.

B-2. The concept of E-consumer protection

¹ Ibid.

² Manual on consumer protection, United Nations Conference on Trade and Development UNCTAD, 2016 Edition, p6.

³ Saif Nasser Abdullah AL Mamari, op.cit, p 50.

⁴ Lamia Atti, La protection des cyberconsommateurs en Algérie -Etude de cas du site Jumia, in : Journal of Economic & Financial Research, Oum Elbougghi University ; Volume 4/ Issue 2 / December 2017, p 912.

Any individual who purchase products or services for his personal use and not for manufacturing or resale is a consumer. Consumers include us all; we are the largest economic group in this economy. We are the victims of ruthless and exploitative in the market like food adulteration, undue weights, misleading agreements, false claims etc. In this consumer centric economic system protection of consumers is the pivotal for the economic development¹.

Consumer protection ensures that people everywhere are treated fairly in the market place and have access to safe healthy products and services. It means to curb inequalities and to promote fairness, justice and prosperity in an increasingly complex global economy.

Protecting consumers is more critical than ever in the digital economy, and consumer confidence in e-commerce is a prerequisite for their participation in online shopping. Yet, conventional consumer protection regimes may be inadequate to address e-commerce specific practices, such as advertising on social media that are constantly evolving to accommodate changing consumer habits. Most governments do not know how best to regulate to provide this protection. Regulatory approaches tend to focus on how to balance rights and obligations among stakeholders (governments, industry, and consumers) and how to integrate e-commerce specific considerations into conventional consumer protection regimes².

II- E-consumer protection in the era of E-commerce

Consumer protection online may take various forms, the main risks involving the online shopper are financial, security, privacy, data loss, etc. However, it seems that all barriers to purchasing online mostly revolve around safety issues. According to several worldwide studies, the online threats include: virus attack, spam, click streams, pop-ups identity theft, computer system invasion, card fraud, loss of private information, scams, online transaction insecurity, customer data abuse, and others³, in this part of our study we are going to set the light on potential risks for e-consumer in e-commerce, then main measures for e-consumer protection as follows:

¹ Leela krishna, Universal evolution of consumer protection, available at : <http://www.legalservicesindia.com/article/2491/Universal-evolution-of-consumer-protection.html>, seen : 18 August 2019.

²E-commerce legal guide, New Markets Lab, may 2018, p 7, available at : https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwj_prSW8orlAhWSXsAKHbZSBXkQFjAAegQIAhAC&url=http%3A%2F%2Fwww.intgovforum.org%2Fmultilingual%2Fsites%2Fdefault%2Ffiles%2Fwebform%2Fecommerce_legal_guide_draft_24_may_2018_nml.pdf&usg=AOvVaw0GutgKa3zTX6w8PEm1qbPG, seen: 19 august 2019.

³ Forsythe, Sandra M., Shi Bo, Consumer patronage and risk perceptions in Internet shopping. Journal of Business Research Vol. 56 No. 11, p 870.

II-A. Potential risks for e-consumer in e-commerce

It is evident that the problems facing consumers on-line are not much different from transactions concluded off-line, but it cannot be denied that online-consumers have special needs; for example the issue of privacy poses a greater risk in cyberspace. Unlike the off-line environment where consumers get an opportunity to inspect potential purchases and to judge for themselves the trustworthiness of a seller, in the online world, consumers are forced to proceed on faith, knowing very little about the seller, to whom they are entrusting a variety of information, including credit card information¹.

According to the principles of *John F. Kennedy* introduced above, consumer sovereignty has four key elements: protection, information, choice and redress. Consumers would like to be confident that the goods and services offered online are fairly represented, that the merchants with whom they are dealing will deliver goods on time, and that they are not engaged in illegal practices. Consumers should further be protected against unsolicited communication; illegal or harmful goods, services and content; insufficient information about goods or their suppliers; the accessibility of websites; invasion of privacy; lack of protection through unfamiliar, inadequate or conflicting laws of a foreign country being applicable to the contract and cyber fraud².

There are many types of threats on e-commerce we are going to focus on the main frequented threats as follows:

A-1. Security Threats to E-Commerce

There are several kinds of security threats to e-commerce, such as :

A-1.1 Authentication Attacks

These types of attacks occur when a user changes system resources or gains access to system information without authorization, by either sharing logins or passwords, or using an unattended terminal with an open session. Password attack is a frequently used method of repeating attempts on a user account and password. They are performed using a program that runs across a network and attempts to log into a shared resource (for example a server)³, If the two webpages

¹ Helge Huffmann, Consumer Protection in E-Commerce, Master dissertation in law, faculty of law-school of advanced studies, university of cape town- South Africa, 2004, p 7.

² Ibid.

³ Mohammed Ali Hussain, A Study of Information Security in E- Commerce Applications, in : International Journal of Computer Engineering Science (IJCES), Volume 3 Issue 3 (March 2013), p 3, available at : <https://sites.google.com/site/ijcesjournal> , seen : 14 August 2019.

look identical, even prudent customers can be easily defrauded and the company's reputation damaged¹.

A-1.2. Confidentiality Attacks

Because network computers communicate serially (even if networks communicate in parallel) and contain limited immediate buffers, data and information are transmitted in small blocks or pieces called packets. The hackers use a variety of methods known collectively as social engineering attacks. With the use of dozens of shareware and freeware packet sniffers available, which do not require the user to understand anything about the underlying protocols, the attackers would capture all network packets and thereby the users login names, passwords, and even accounts. The attackers usually take advantage of human tendency, e.g. using a single, same password for multiple accounts. More often they are successful in gaining access to corporate sensitive and confidential information. Some snooping attacks place the network interface card in promiscuous mode, while the other packet sniffers capture the first 300 bytes of all telnet, file transfer protocol (FTP), and login sessions.

A-1.3 privacy attacks

Privacy is the claim of individuals, groups, or institution to determine for themselves when, how, and what extent information about them is communicated to others².

While purchasing products/services from e-commerce websites, customers share personal and financial information like phone number, email, credit-debit card details³ and residential information. By sharing this information, customers perceive potential loss of control over personal information. They fear use of this information without their knowledge or permission. The extreme case is where a consumer is "spoofed", which means that his identity and details are used for fraudulent transactions. In e-commerce, privacy of e-commerce users is violated when without informing the customer, their purchasing habits are tracked by the company for offering new products or services. Also privacy is violated when the e-commerce company shares the customer's personal data with other companies,

¹ Saravanan Muthaiyah, Kok-Wai Chew, Review Of E-Commerce Issues: Consumers Perception On Security And Privacy, in : International Business & Economics Research Journal Volume 3, Number 9, p 73, available at : <https://www.researchgate.net/publication/297890898>, seen : 26 August 2019.

² Acep Rohendi Consumer protection in the e-commerce : Indonesian law and international law perspective, in: Ecodemica, Vol III. No.2 September 2015, p 481, available at : <https://ssrn.com/abstract=2678754>, seen : 18 August 2019.

³ Shaizatulaqma Kamalul Ariffin and others, Influence of consumers' perceived risk on consumers' online purchase intention, in : Journal of Research in Interactive Marketing, Vol. 12 No. 3, 2018, p 314. available at : <https://www.emerald.com/insight/content/doi/10.1108/JRIM-11-2017-0100/full/html>, seen : 18 August 2019.

and they in turn, use this data for direct marketing. This results in unwanted calls to customers from different marketing companies.¹

A-1.4.Database Threats

E-commerce systems store user personal data and retrieve product information from databases connected to the web-server. Besides product information, databases connected to the web contain valuable and private information that could irreparably damage a company if it were altered or disclosed. Some databases store username and password pairs in a non-secure way. If someone obtains user authentication information, then he/ she can masquerade as a legitimate database user and reveal private and costly information².

A-1.5.Unauthorized access

It implies illegal access to data, systems or applications for some malicious purpose. In Passive unauthorized access the hacker listens to communication channels for finding secrets or content which may be used for damaging purposes. However, in Active unauthorized access the hacker modifies system or data with an intention to manipulate or change. Some current examples include ineffective encryption or lack of encryption for home wireless networks, a popular home-banking system that stores a user's account number in a Web "cookie" which hostile web-sites can crack and mail-borne viruses that can steal the user's financial data from the local disk or even from the user's keystrokes. Home computer, Point-of-Sale (POS) terminals in brick-and-mortar stores, as well as a variety of mobile and handheld devices can easily be targeted by hackers³.

A-2. Other threats to e-commerce

Out of security threats, there are many other threats to e-commerce, such as:

A-2.1.Transaction fraud risks

We start this analysis of actual risks by considering the levels of fraud in credit card transactions. From e-Marketer of November 2000⁴ we learn that Visa and MasterCard report rates of credit card fraudulent transactions of 0.08% and 0.09% respectively, for all types of transaction. As far as e-commerce credit card transactions are concerned, e-Marketer from January 2001 reports that of 60,320,000 online B2C transactions in 1999, only 18,600 (0.03%) were fraudulent.

¹ Jitendra K. Sharma & Daisy Kurien Perceived Risk in E-Commerce: A Demographic Perspective, In : NMIMS Management Review, Volume XXXIV, Issue 1, April 2017, p 36.

² Ibid.

³ Ms. Palak Gupta, Dr. Akshat Dubey, E-Commerce- Study of Privacy, Trust and Security from Consumer's Perspective, in: International Journal of Computer Science and Mobile Computing, Vol.5 Issue.6, June- 2016, p 227.

⁴ Statistics available at : <http://www.emarketer.com>, seen : 22 August 2019.

It would thus appear that the risk of fraud per transaction is actually significantly lower for online transactions than for other types of transaction. Thus one might conclude that, at least with respect to the proportion of fraudulent transactions, e-commerce is actually one of the less risky forms of commerce. In the next section we examine specific types of conventional transaction in more detail, to discover which are actually the most risky¹.

A-2.2.Manipulation of software in components

The software in the individual components can be manipulated in different ways or can as such have weak points. Examples are PIN numbers that can be avoided by so-called Super PINs or people from outside the company who install Trojan horses, software which besides its intended function carries out some other action which is not obvious to the user of the system².

A-2.3.Installation of contaminated software

A substantial risk emanates from the customer himself. Through the installation of virus contaminated software on his local private computer, so-called Trojan horses can spy out sensitive data and send it online to some other address. All this happens unnoticed by the user³.

A-2.4.Loss and manipulation of stored data

The loss of stored data may not only lead to availability problems but also to financial loss. If, during a computer failure at the customer's, the data areas which are used for electronic money become unusable, this can also lead to the irretrievable loss of his electronic money. In electronic money systems, it is possible to manipulate the amount of stored money. A customer can try to increase the sum of his electronic money; a dealer can try to increase the stored turnover figures. A person in the range of the customer could use his computer and pay his expenses. An aggressor who wants to do harm to the dealer could try to decrease the stored turnover or delete it entirely. A further assault could be the manipulation of the range of goods offered by a dealer on the Internet such as offering goods at dump or very expensive prices, offering goods that are likely to worsen the dealer's image or modifying their description⁴.

¹ Pita Jarupunphol and Chris Mitchell, Consumer risk perceptions in e-commerce, Information Security Group Royal Holloway, University of London, UK, available at : <https://pure.royalholloway.ac.uk/portal/files/4704563/crpiec.pdf>, seen: 13 August 2019.

²Wolfgang Wopperer, Fraud Risks in E-commerce Transactions, The Geneva Papers on Risk and Insurance Vol. 27 ,No. 3 (July 2002) p 387.

³ Ibid.

⁴ Ibid.

Another point of attack is protocol data. Non-entitled persons can try to spy out protocol data in order to get access to confidential data¹.

A-2.5.Misuse of distant maintenance access points

In IT systems that have distant maintenance access points or that allow the downloading of software, an aggressor can successfully enter the IT system through these functions and modify software, manipulate data or spy out sensitive information².

II- B .Main measures & issues for e-consumer protection

In order to prevent risks occur for e-consumer in e-commerce, there are several measures and issues, and we shall start by security issues then privacy issues, finally other issues as follows:

B-1. Security issues

It is however possible to improve and enhance current security measures in ways that ensure higher customers satisfaction and trust. In most organization, security is an afterthought rather than an integral part of the infrastructure and companies are usually cost driven rather than value driven when it comes to security. This should change and E-commerce sites should find ways to improve and tailor their security according to customer needs and demands. Software developers must develop software to enhance safety and security and provide safety measures like encryption, digital signatures, digital certificates, etc.

B-1.1. Encryption

Sensitive information such as credit card details can be defended by encryption, that is, the use of secret codes. The goal of encryption is to make it impossible for a hacker who obtains the *cipher- text* as it passes through the network, to recover the original message. Encryption is the mutation of meaningful information in any form into a form that can only be rendered readable by a *decryption key*. There are two main types of encryption in common use today – symmetric³, or private key systems and asymmetric⁴ or public key systems. In a symmetric key system, the same key is used to encrypt and decrypt the plaintext. The key is called a private key and must be shared by the sender and receiver of the text⁵.

¹ Oliver Pickup, Five risks when shopping online and how to protect yourself, available at: <https://www.telegraph.co.uk/money/criminal-activities/what-are-the-risks-of-online-shopping/>, seen: 24 August 2019.

² Wolfgang Wopperer, op.cit, p388.

³ Mohammed Ali Hussain, op.cit, p 5.

⁴ Ibid.

⁵ Saravanan Muthaiyah, Kok-Wai Chew, op.cit, p 74.

B-1.2. Digital signatures

A digital signature is a cryptographic method that fulfills a similar purpose, as does a written signature. It is used to identify and verify the originator and the contents of a message. That is, a recipient of data can verify who signed the data, and that the data was not modified after being signed. The main purpose of digital signatures is for sender authentication¹. In fulfilling this goal, the mechanism is such that the sender cannot repudiate having (digitally) signed the data. It also enables the computer to annotate the message, ensuring the recipient that the message has not been forged ('spoofed') in transit by another person.

B-1.3. Digital certificates

Introducing security seals is also advisable. Moreover, educating customers on security issues and how to protect their computers is also a major part of the security implementation process. Therefore, as can be seen, in order for e-commerce security to blossom, it is important to look at it from many different angles, and focus on not only the company's guarantees, but also on customer's needs and the initial software development process. Security must also be achieved in a collective manner rather than individualistic in order to improve the worldwide perception of online security².

B-1.4. E-payments

For every business operating online, e-payments can be a considerable hurdle, particularly when operating across borders and financial systems. E-commerce service providers want assurance that payments will come through without delay, and governments must make sure that transactions protect those with less market power. As a result, e-payments tend to be heavily regulated across the globe, with several different approaches depending upon the type of e-payment system used. Common priorities for both the public and private sectors include prevention of fraud and compliance with banking requirements, and security issues at the transactional level. Governments must also prioritize institutional infrastructure that can investigate problems as they arise and enforce rules in the case of a violation³.

¹ Ms. Palak Gupta¹, Dr. Akshat Dubey, op.cit, p 230.

² Rashad Yazdanifard and others, Security and Privacy Issues as a Potential Risk for Further Ecommerce Development, in : International Conference on Information Communication and Management IPCSIT vol.16 (2011) © (2011) IACSIT Press, Singapore, p 25.

³ E-commerce legal guide, op.cit, p 6.

B-2. Privacy issues

Since computers possess the ability to gather and process large amounts of data and the ability of the internet to provide and make available such on a global scale the need and concern for better security has also arisen. In turn consumers, legislators and even privacy advocates have pressed for broader and improved privacy protocols on the internet.

In order to perform E-commerce activities, a certain amount of personal information is required such as a personal bank account number or an address, when people are concerned about their privacy, they tend to either retreat from performing purchases online or provide incomplete information due to fear. This greatly impairs the further development of e-commerce and affect profits and sales. The success of online transactions therefore is dependent on a strong sense of trust by the consumer¹.

B-3. Other issues

As with any consumer market, things can go wrong in global commerce and consumers are usually confronted with the following consumer type protection issues²:

- information deficiencies (inability of consumer to find out basic information about the trader, product or service, on which to make informed choices);
- after sales difficulties (such as failure to supply the goods or services after payment has been made, problems with the delivery of the goods, unsatisfactory goods or services, or goods or services that present health and safety risks);
- fraud and unethical conduct (such as identity deception, false advertising, receiving payment without intending to supply, and scams like pyramid selling schemes, and some work from home or investment schemes);
- problems with privacy issues (such as consumer data protection, privacy of the consumers communication);

¹ Christian Thorun and others, Indicators of consumer protection and empowerment in the digital world Results and recommendations of a feasibility study, edition : Con Policy, Institute for Consumer Policy, 15-03-2017, available at :https://www.researchgate.net/publication/315702138_Indicators_of_consumer_protection_and_empowerment_in_the_digital_world_Results_and_recommendations_of_a_feasibility_study , seen: 27 August 2019.

² Helge Huffmann, op.cit, p p 7,8.

- making payment over the Internet (such as loss, errors and unauthorized transactions as well as the security of payment details such as credit card numbers and bank account details).

Furthermore, it has to be considered, that e-commerce often crosses borders. All ecommerce is potentially international and not all countries subscribe to the same consumer protection standards. Legislation about consumer protection is the best way to harmonize standards.

Conclusion

Consumer protection in e-commerce is essential to fostering a trustworthy e-commerce environment and engaging consumers in online transactions. Having a strong consumer protection regime in place can benefit enterprises and consumers alike.

Internationally, consumer protection in e-commerce has not received the focus it deserves. While a number of initiatives exist, they tend to be general in nature and do not provide sufficient guidance to enterprises, governments, or consumers. Going forward, this may be an area in which a model law could be helpful, as could greater integration with the other areas of law and regulation

The development and improvement of technologies have brought successful towards e-commerce. High technologies have attracted people misuse the technologies such as hackers and cybercrime which they can access to e-consumers privacy easily. Thus, e-commerce companies should build trust and using security during the business transaction. To provide value to the customers through service and goods provided, research found that companies should build up trust and security to protect their customers. Benefits of application trust and security include improved customer service, build customers trust, avoid the misuse of technologies, protect customer's privacy and maintain the companies' reputation.

In order to create an effective infrastructure for securing E-business, it requires a comprehensive development of several elements including laws, policies, industry self-regulation, technical standards and law enforcement. These elements may provide positive environment and infrastructure to support the growth of e-business and relation with customers.

Therefore, Governments and businesses need to work together to improve consumer trust and security are attempt to increase transactional efficiency and effectiveness in all aspects of the design, production, marketing and sales of products or services for existing and developing good relation through the utilization of current and emerging electronic technologies, which will gain the more confidence in e-commerce.

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