E-Commerce: Foundation, Obstacles and International Development

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Abstract-- **The internet has provided new opportunities for worldwide trade. Geographical limitations between buyers and sellers no longer exists and companies are conducting business, trade and communications using modern ways. This chapter will start by providing the payment methods and general infrastructure of well-established e-commerce systems. With the emergence of new opportunities, new limitations are also evident which will be referred to later on. Although e-commerce is extensively used in terms of trade, it has not yet its complete potential. The latter sections of the chapter will discuss proposals for different e-commerce aspects regarding worldwide promotion of the relevant sector.**

Keywords: **e-commerce, e-business, B2C, payment systems, security, barriers, recommendations**

I. INTRODUCTION

The internet has reformed the global economy in numerous ways. This includes the ways in which businesses and customers compare, purchase and sell products and services. Searching and organizing information and data is also included in these reforms. The internet has created completely unprecedented economic sectors via the creation of new business models which were not previously feasible. These advances have facilitated worldwide trade. E-commerce is carried out electronically and has experienced exponential growth enabling businesses to connect with their customers in foreign markets. This has been extremely beneficial for smaller businesses that could not export their products and services to foreign markets because of resources deficiencies. Therefore, the management, business and social e-business dimensions become extremely important. Larger companies utilize significant resources on their e-business models. Such models include numerous e-business theories which will be referred to in this chapter.

Business of all scales aim to facilitate international e-commerce. Decision makers should attempt to support market initiatives, eliminate tedious regulations and determine new regulatory structures when required. Fundamental business freedom namely the freedom to present products and services internationally should exist in the digital world.

In order for the worldwide economy to completely benefit from the e-commerce sector's potential, measures should be taken at policy level. Market proposals include action points relevant to policy makers, online merchants and e-commerce suppliers which have the purpose of activating international e-commerce.

II. E-BUSINESS INFRASTRUCTURE

The Internet

Singular computers consist of hardware such as input devices, output devices, central processing units and memory) and software (utilities, applications, operating systems) that make up the basis of every computing activity. Networks are created by connecting a series of computers. These networks entail interesting e-commerce by providing new opportunities for the communication and cooperation of different markets. There are various types of networks. Some of the most prominent ones include local area networks; a network that covers small physical areas such as small offices, wide area networks; a network that covers vast areas, virtual private networks; typically used to secure communications via public internet, internetworks such as the internet, extranets and intranets. It is noteworthy that the mentioned network types are not mutually exclusive. As an example, the internet is both an internetwork and wide area network (WAN).

Cloud Computing

Cloud computing is a type of peer to peer networking concept. It provides the means for users to access and utilize web applications that exist in vast data centers around the globe instead of their personal computers. The name 'cloud computing' comes from diagrams that depict the internet as a cloud. Such applications residing in the could take advantage of vast on-demand scalability and may be significantly provisioned to attain economies of scale, reduce business expenses, and more importantly provide resources as a service over the internet. They are also billed as utilities.

M-Commerce

Up to today, information technologies have been the focus as personal computers. Normally, computers are considered as devices residing on our desks. Although, recent advancements in regarding mobile phone technology have made phones as effective as personal computers. This is of interest since most people have computers wherever they go. This has led researchers to start investigating the thought of mobile commerce or m-commerce. There are several products and services that are ensued when mobile phones are regarded as networked computers.

E-Business Security Technologies

Securing data is the number one priority for corporations as they carry on investing in new e-business technologies. A vital way to secure data is by encryption. On the basis of cryptography, encrypting is utilizing algorithms to make information unreadable to unauthorized individuals. Only authorized people have the encryption key. This key converts the information again making it readable via decryption. Encryption is utilized to protect data during its route around the networks or when it resides in storage devices. Business typically utilize encryption in numerous ways. VPNs send data through tunnels on shared public infrastructures namely the internet. Miscellaneous data cannot enter such tunnels unless they have the suitable encryption. VPNs are typically used by company employees that are away from their home office on a temporary basis. As an example, consultants working with clients may need to access the company's internal networks such as the company intranet.

Potential ways of making e-payments more prevalent

1- Revising the role of issuers and consumers
2- Exposing businesses to numerous e-payment methods
3- Decrease conventional payment schemes

III. E-BUSINESS ECONOMIC THEORIES

Transaction Cost Model

Regarding the transaction cost model, the market is an organizational structure that coordinates buyers and purchasers by connecting the expectations relevant to the price quantity/quality relationship. The transaction is thus organized based on an agreed contract that defines buyers and sellers, the product of exchange and the relevant price for the transaction to proceed.

In the event that the primary analysis unit, the exchange between a minimum of two individuals is taken, the information related issues which entail uncertainties regarding the exchange product and the price-quantity/quality relationship, that is vital to the decision makers of both parties can be predicted. Taking into account the traction as the analysis unit, it is possible to identify the way and situations where ICTs can be utilized to provide access to such information. ICT can be used to decrease transaction expenses. Regarding the market as an exchange network and contracts between buyers and sellers, both conflict and cooperation should be considered since individuals may not reveal information during the exchange procedure. Thus, higher profits and higher revenues may be generated for buyers or sellers.

IV. LIMITATIONS CONCERNING THE UTILIZATION OF E-COMMERCE

Customs related barriers

Several companies, especially within the retail sector, imply that tariffs are a major limitation to international e-commerce. Tariffs increase the products prices and are sold by e-traders which decreases competitiveness. Tariffs are not more of an issue for e-commerce than they are for international trade. Complex and tedious customs processes are a common problem regarding all types of international trade. Furthermore, they can cause issues for e-traders since they send numerous small consignments rather than singular larger ones. E-traders are typically smaller businesses and thus, are sensitive to expenses ensued due to customs processes.

Consumer and Sales Laws

A general issue for e-traders are the fluctuations in consumer laws in various countries. This fundamentally is related to the rights to return or cancel a purchase. Some companies view such variations as limitations whilst others regard them to be less problematic and assume it is straightforward to adapt to such variety of requirements. The latter are typically companies with extensive sales and consumer-friendly return policies. The consumer laws issue adds to legal uncertainties for e-traders that consider it complicated and expensive to discover that local consumer laws entail.

Intellectual Property Limitations

Often, businesses have their intellectual property rights violated when carrying our e-commerce. Downloading illegally is also prevalent, and affects mobile phone applications as well as sales of computer games etc. Users are able to surpass limits and 'jailbreak' their phones, hence gaining access to application downloads from file sharing websites without making any type of payment. Sometimes, Google prohibits other companies to present advertisements when certain company names are searched in its search engine. This is only applicable when the company name is considered specific. On the other hand, if a company name is considered common, it is not protected using the same way thus other companies are able to show advertisements when the company name is searched. Such businesses climb to higher position of returned hits and 'piggy back' their way back to the top on the basis of good reputation concerning other companies. A key issue is if third party liability on the internet such as search engines, online shops, and broadband companies regarding intellectual property of copyrighted material shares using their websites. Proprietors of copyrights regard it the responsibility of the third party to supervise what is disrupted through their websites and services, and to promptly eliminate any material that breaches, or that may even be regarded as a contributor to the beach of copyright. Third party companies, however, say that they neither wish, nor have the legal responsibility to supervise the distributed material through their websites and services, and therefore are not responsible for their customers' actions.

Other restrictive limitations

- Addition of roaming charges for e-commerce through mobile devices
- Standards deficiencies
- Transport roaming ensues increased transport costs
- Audio-visual content regulations hinder e-commerce advancements

V. RECOMMENDATIONS TO PROMOTE CROSS-BORDER E-COMMERCE

Synchronize legal frameworks for the sale of goods, services and digital content

The Consumer Rights Directive, CRD, presents an approximately completely harmonized legal framework for the online business to consumer, B2C, sales of goods, services and digital content.

Although, the CRF does not include all issues and uniformity at national level and is still deficient regarding vital issues such as legal guarantees, notification of lack of conformity, unfair contract articles, product/service liability, remedies and digital content. Complete harmonization will facilitate international B2C commerce as it enhances certainty on application regulations, decreases legal compliance expenses and develops sellers and buyers' trust across markets.

Synchronize privacy and data protection legislation

Updated or adjusted regulations should be added without entailing illogical costs or administrative issues for online merchants, and namely SMEs. In order for the e-commerce sector to stay competitive, legislations should take into account the economic potential of newly technical advancements regarding information collection and analysis such as data based marketing, profiling and the utilization of cookies that stimulate business innovation and create opportunities for merchants to enhance personalization and tailor their businesses according to consumer demands. Normal personal data profiling in the absence of legal effect or harm regarding the data subject must be identified as normal personal data processing, possible with no specific regulation. Data portability commitments must be limited to content generated by users in the course of social network and social media services.

Utilize e-identification and authentication

National e-ID systems recognition and interoperability may present considerable boost for convenience, trust and security within the e-commerce market. Regarding merchants, it is imperative to approve the identity of customers for numerous reasons. Possessing e-Identification programs on the basis of real IDs approved by governments or other trusted parties will aid in decreasing cybercrime and fraud whilst allowing for effective age validation which would be useful for services where age is an issue such as certain products or services and online gambling e.g. tobacco, medication, alcohol etc. Regarding consumers, adequate and reliable e-Identification may aid in securing online identities whilst increasing trust and convenience (international) online shopping. National electronic identification interoperability programs across borders is still in its early stages.

Decrease costs related to cross border processes

Today, there are no integrated systems that satisfy all consumer requirements as well as the requirements of merchants managing international deliveries and reverse logistics.

Service providers and operators must work to achieve a suitably integrated and connected common system. Modern invoicing systems for multi-operator programs with terminal fees and invoicing based on distance could considerably decrease international delivery expenses. Moreover, improved operability via open standards promotion in labelling development and EDI files creation (Electronic Data Interchange) could reduce implementation expenses of a new courier and allows the merchant to gain opportunities whilst promptly changing courier. Finally, a constructive dialogue among all e-commerce sector parties with common interests in enhancing shipped volumes may progressively stimulate product development and close the gap between supply and demand within the delivery products sector.

Increase reliability and quality of services of delivery operations

Currently, international e-commerce suffers from inadequate delivery operation integration because a package will go through several logistics systems when crossing borders, apart from integrators. It would be beneficial for the consumer if the delivery system could guarantee a smooth reply when assurance is required and that they reverse the burden of proof of claims from the consignee to the courier when a claim is made. To improve the quality of reliability of delivery systems across e-commerce markets, it is advised that delivery operators provide partnerships causing improved cooperation and IT coordination. Additionally, extra IT intelligence should be promoted to merchants and constant investments in delivery quality is recommended with independent evaluation using a service quality barometer and a delivery trust mark.

Define a risk-based approach to preserve merchant's business models

Regarding online merchants, reliable and interoperable e-payment innovations focus on three main principles: reach, conversion, and cost. Securitization and authentication requirements that are too tedious only focusing on the risk concerning banks which is damaging to the merchant's reach and conversion. Merchants must be able to select other methods of identifying consumers in payment transactions, thus maintaining business models that are based on merchant-consumer relationships.

Recognize economic and entrepreneurial freedom

It is vital that online merchants are able to rely on their rights to economic and entrepreneurial freedom of activity on the basis on grounded reasons. This also ensures that individual companies may decide against selling to consumers from other countries. This is deemed a differentiation and not discrimination on the basis of location of residence and may be justified as objective criteria. Some examples of objective criteria are given below:

- Language limitations which may include higher costs
- Legal uncertainties because of privacy differences, copyright and/or consumer legislation
- Manufacturers, not online merchants, preventing the products to be sold everywhere

Encourage innovation and the entry of new players into the market

The e-commerce sector may remain competitive globally when competition enforcement adopts a dynamic perspective and provides priority to entry possibilities for new comers such as SMEs and start-ups to take advantage of whilst protecting customers. Innovation policy and financing programs must not be afraid of disruption but should recognize the vast opportunities for development and jobs that exist within the internet economy.

Define a secure and innovative payment market

Wallet solutions, one-click buy options and third party payment providers (TPPs) as well as other innovations may speed up product development and encourage international purchases only if they are in line with merchant security standards. Online banking solutions innovations must be encouraged since they provide mobile payments and integrate online, offline, cloud and P2P payments. Policy makers are also encouraged to request suitable communication by the issuing banks and third parties that develop the services upon the introduction of this new category of payments. Risks of confusing the market exist if liability rules and services are not adequately positioned.

VI. CONCLUSION

E-commerce is currently under significant development in regards to the extent of products and services that are relevant to online trading.

Fields such as B2B and B2C e-commerce are improving as well as the utilization of devices namely wireless handsets which ensue m-commerce. In order for online transactions to be conducted, banks will have to mediate funds transfers efficiently to meet demands of vast business clients. M-commerce has appeared as the most influential medium in the electronic payments field. Network and telecoms operators design their online payment schemes but there are still doubts concerning the mobile networks that resemble fixed line internet. Regarding B2C commerce, electronic payment systems are crucial for merchants. Typically, merchants provide a list of products and services as well as payment methods. Even though this payment type is dependent on numerous factors such as payment means that are recommended, whether merchant's server hosts the system or it is outsourced, whether the system is reliable in terms of security etc. There is a gap in regards to defined standards for universally secure integrated payment schemes. The question arises that how can such barriers be decreased to promote international e-commerce? As barriers vary in character, some are legal, and some relevant to payment systems, lack of competition, logistics etc. A singular solution is absent because several barriers need to adhere to prominent objectives such as data protection, privacy or consumers etc. In regard to policies, it is becoming less suitable to address e-commerce independently. For the achievement of full e-commerce potential, it must become a vital part of trade policy agendas. Issues not addressed by trade policies such as roaming charges and international cross border data transfer should be included in trade policy agendas. Contrarily, out of date policies are in danger of becoming out of tune with business realities within the e-commerce field.

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