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Major Barriers of e-Commerce Development in Bangladesh Customers' Perception

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Abstract: *E-commerce is the most recent manifestation of the dynamic nature of trade: a significant and logical evolutionary step in how international trade occurs. Today, e-commerce is transforming the international trade landscape. This study examines the current status of Internet and E-commerce development and reveals the major barriers to e-commerce adoption in Bangladesh from customers' perception, and proposes strategies toward greater success of e-commerce in Bangladesh.*

Introduction:

In the electronic age the use of internet has revolutionized the design and implementation of way of doing business. At the moment it has immense impact on commerce and the economy as well. It provides with efficient and very powerful methods of designing, promoting and distributing products, conducting research and gathering marketing information. Benefits of e-Commerce such as: 24/7 operation, global reach, low cost of acquiring, serving, and retaining customers, improved customer service etc. have given it a thrust to become the prime mode of trade and commerce in the future. With the development of e-Commerce, new types of relationships started to emerge in business settings. This type of virtual commerce has presented some challenges and opportunities to both merchants and customers. e-Commerce is ubiquitous and thus anyone can transact at any time from any place. On-line commerce has enabled customers to overcome the handicaps of time and space. (Office of Telecommunications Technologies, International Trade Administration, US Department of Commerce. Telecommunications Country Profile: Bangladesh. http://www.tiaonline.org/policy/ref/countries.cfm.)

e-Commerce is a process of buying and selling products or services over an electronic network. Among all forms, internet is the most popular

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medium of conducting e-commerce. It encompasses a range of processes namely: Electronic Data Interchange (EDI), Electronic mail (email), World Wide Web (WWW), Internet Applications, Network Applications etc. e-Commerce is generally conducted through the sale or purchase of goods or services over computer-aided networks. The goods or services are ordered through these networks but the ultimate delivery of goods or services are performed manually. The payment for the transactions are made most of the time online, however sometimes may be made off line as well.

Despite the rapid and demonstrated uptake of e-Commerce techniques, there is still very limited detailed evidence about how individual corporations in developing countries are using e-commerce to improve their business activities and what the effective costs and benefits are of using those techniques. (DIGITAL OPPORTUNITIES FOR DEVELOPMENT). Despite the fact that e-Commerce has endless opportunities, it is evident that numerous barriers inhibit the successful uptake of e-Commerce. The purpose if this paper is to contribute to revealing the existing and prospective barriers to e-Commerce and devising their solutions in the context of Bangladesh.

Review of Literature:

It is conceived that e-Commerce is a phenomenon of developed country and new technology generally put challenges for developing countries that lack the requisite capabilities, as well as the economic and financial resources to cope with the developed countries. Especially internet presents both opportunities for economic and social development, and a threat to further increasing the gap between developed and developing countries. (Tigre, 2003)

The experience of most developed countries shows that price and availability of the telecommunications infrastructure are clearly associated with competition and market access (Sachs, 2000). Recently Bangladesh Government has withdrawn import duties from computers and computer related peripherals. Due to the withdrawal of duties prices of computers and related products declined sharply and become more affordable to general communities. This increased the use of computer for general purpose. Until now the effective application of computers are underutilized due to particularly government policy. However, it is revealed form recent survey that nearly 90% of the computers are Dhaka-

based and there is little scope for decentralization of these PCs to different regions of Bangladesh.

Very few standard IT institutions are providing high quality IT Education in Bangladesh, but the costs are very high and consequently remain beyond the reach of general people. Some IT related private institutions opened and started to offer it courses but again they are centered around Dhaka city. These institutions suffer from lack of coordination and quality course materials, and inadequate technical facilities. In course of time, eventually situations have been improved as the government withdrew duties on VSAT. At present there are more than 50 ISPs operating in the country including the government owned BTTB located only in Dhaka, Sylhet and Chittagong.

Different patterns have been found in studies about the extent to which firms in developing countries embrace the internet. In Brazil, telecommunication infrastructure is not considered a barrier for e-Commerce, and financial services sectors have widely adopted the internet approach. (Tigre, 2003). In Nigeria, e-mail was the prime aspect of the internet system and business people used email mostly for the purpose of communication (Osuagwu, 2003). Low level of IT education was recognized as the underutilization of internet system in many developing countries. In Hongkong low e-shopping compatibility, e-shopping inconvenience, e-transaction insecurity and low internet privacy, together with orientation toward social interaction and poor awareness on the part of the consumers, translate into supply-side hurdles (Cheung and Liao, 2003).

It is found from various studies that in developing countries e-Commerce has hindrances in the arena of cultural habit and business and technology infrastructures as well (Yu, Jun, 2006).

Various studies identified a number of factors that facilitate or limit internet-based businesses. The enablers are availability of information, access to price information, accessibility, and convenience. These are the factors that would benefit the online business. On the other hand, the limiters which inhibit the escalation of internet business include lack of trial, lack of interpersonal trust, lack of instant gratification, high shipping and handling costs, customer service issues, loss of privacy and security, lack of a stable customer base, and poor logistics (Dhruv et. al., 2002). Oinas (2002) recommended in his paper that online companies serving

ultimate consumers need to build competency in retailing, handling payments, and distribution, among other crucial business functions.

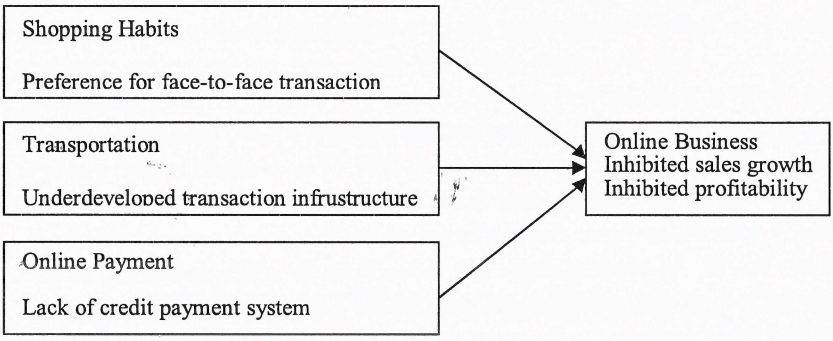

Figure: Barriers to Online Business (Yu Jun , 2006)

Among other barriers many traditional middlemen are trying to preserve existing barriers and create new ones as a way to prevent online competition. In the developed countries these barriers already prevented many firms practicing e-Commerce from selling directly to consumers and severely limit the ability of consumers to buy things.

Study Methodology:

Methodology followed to complete the study is on the basis of primary and secondary data. Secondary data were collected from relevant papers, daily newspaper, IT magazines published in paper form and electronic form as well. Primary data were collected from three stakeholder groups namely, vendors (merchants), financial institutions and the consumers. A critical analysis was done to determine the barriers that hinder the effective implementation of e-commerce in Bangladesh.

Context: Bangladesh:

According to International Telecommunication Union (ITU) report, Bangladesh had 450,000 internet users in 2007. There are around 100 software houses, 35 data entry centers, thousands of formal and informal IT training centers and numerous computer shops. Although ICT had been announced as a thrust sector in 1997 no substantial and clear-cut IT policy has been followed since then. Still legislation towards electronic signatures, practical laws to protect intellectual property rights and relevant financial structure to facilitate electronic transaction are yet to be formalized. The entry into the global economy is effectively blocked because of inadequate ICT infrastructure and human resources, and non-

existing compatible electronic environment to the rest of the world, lack of coordination among different stakeholders. However, the member of IT users in Bangladesh is increasing rapidly.

Technical Limitations to e-Commerce:

- Lack of sufficient system security, reliability, standards and communication protocols
- Insufficient telecommunication bandwidth
- The software development tools are still evolving and changing rapidly
- Difficulties in integrating the internet and e-commerce software with some existing application and data base
- The need for special web servers and other infrastructures, in addition to the network servers (additional cost)
- Possible problems of inter operability, meaning that some EC software does not fit with some hardware, or is incompatible with some operating systems or other components

Non-Technical Limitations to e-Commerce:

- Cost and justification
- Security and privacy
- Lack of trust
- Channel conflict
- Other limitations are such as lack of touch and feel online etc

According to the study conducted by Dilruba et al., (2005) e-Commerce in Bangladesh is not advancing because of –

- Poor physical and network infrastructures
- Inadequate human resources
- Absence of required rules/law
- Low level of computer literacy, and
- Widespread poverty etc.

One of the main bottlenecks of e-Commerce in Bangladesh is e-payment system operation, which suffers from lack of convertibility of e-currency. The balance in any e-cash account is not convertible like cash without the help of any intermediating third party. Furthermore, it attracts special hardware arrangement.

Findings:

The study collected and analyzed primary data about existing and prospective inhibitors from customers. The study has identified six critical factors namely: lack of security, lack of privacy, lack of information lack of experts, Computer illiteracy inappropriate law.

		Lac_of_sec	Lac_of_pri	Lac_of_inf	Lac_of_exp	Comp_ill	Inap_law
N	Valid	200	200	200	200	200	200
	missing	0	0	0	0	0	0
Mean		2.9900	2.4500	2.7000	2.8500	2.3500	2.1500
Median		3.0000	2.0000	3.0000	3.0000	2.0000	2.0000
Std.dev		1.1904	1.1904	1.1298	1.1723	.9550	.8551

The mean score of the variable lack of security shows that the average people some what agree about the fact that it has substantial contribution to the obstacles of e-commerce. The mean score of the lack of experts, computer illiteracy, and inappropriate laws indicates that the average respondents agreed that these variables have impact on the development of e-commerce in Bangladesh.

Regression model:

In this study, the dependent variable "inefficient e-Commerce" which indicates ineffi_e_Commerce and independent variables were: (a) "inappropriate laws indicate as inap_law" (b) "computer illiteracy indicates as comp_ill", (c) "lack of experts indicates as lac_of_exp", (d) "lack of infrastructure indicates as lac_of_inf", (e) "lack of privacy indicates as lac_of_pri", (f) "lack of security indicates as lac_of_sec".

Table 2: Model Summary

model	R	R Square	Adjusted R square	st. Error of the Estimate	Change Statistics					Durbin Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
1	0.294[a]	0.087	0.082	0.44018	0.087	18.764	1	198	0	
2	0.301[b]	0.091	0.081	0.44033	0.004	0.864	1	197	0.354	
3	0.353[c]	0.124	0.111	0.43315	0.034	7.583	1	196	0.006	
4	0.36[d]	0.13	0.112	0.43296	0.005	1.174	1	195	0.28	
5	0.368[e]	0.135	0.113	0.43263	0.006	1.299	1	194	0.256	
6	0.4[f]	0.16	0.134	0.42749	0.025	5.691	1	193	0.018	2.011

a) Predictors: (Constant), inap_law

b) Predictors: (Constant), inap_law, comp_ill

c) Predictors: (Constant), inap_law, comp_ill, lac_of_exp

d) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf

e) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf, lac_of_pri

f) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf, lac_of_pri, lac_of_sec

g) Dependent variable: ineffi_e_Commerce

The model summary contains six models. Model 1 refers to the first stage in the hierarchy when only inappropriate law is used as a predictor. Model 2 refers to the second stage in the hierarchy when inappropriate law and computer illiteracy are used as predictors. Model 3 refers to the third stage in the hierarchy when inappropriate law, computer illiteracy and lack of expert are used as predictors. Model 4 refers to the fourth stage in the hierarchy when inappropriate law, computer illiteracy, lack of expert and lack of infrastructure are used as predictors and so on.

In the column labeled R are the values of the multiple correlation coefficients between the predictors and the outcome. When only inappropriate laws is used as predictor, this is the simple correlation between inefficient e-commerce system and inappropriate laws (0.294), when inappropriate laws and computer illiteracy are used as predictors the simple correlation between inappropriate laws and computer illiteracy (0.301) and so on for other predictors.

The next column gives a value of R^2 which is a measure of how much of the variability in the outcome is accounted for by the predictors. For the first model its value is 0.087, which means that inappropriate law as predictor accounts for 8.7 per cent of the variation in the dependent variable inefficient e-commerce. The values of second, third, fourth, fifth,

and sixth models increase to 9.1%, 12.4%, 13%, 13.5%, and 16%. The adjusted R^2 gives some idea of how well model generalizes and ideally it would like its values to be the same or very close to the value of R^2. The difference for the final model is a fair bit (0.160-0.134=0.026 or 2.6%). This means that if the model were derived from the population rather than a sample it would account for approximately 2.6% less variance in the outcome. The Durbin-Watson statistics informs about whether the assumption of independent errors is tenable. The closer to that the value is, the better, and for these data the value is 2.011, which is so close to 2 that the assumption has almost certainly been met.

Table 3: ANOVA

	Model	Sum of Square	df	Mean Square	F	Sig.
1	Regression	3.636	1	3.636	18.768	.000[a]
	Residual	38.364	198	.194		
	Total	42.000	199			
2	Regression	3.803	2	1.902	9.808	.000[b]
	Residual	38.197	197	.194		
	Total	42.000	199			
3	Regression	5.226	3	1.742	9.285	.000[c]
	Residual	36.774	196	.188		
	Total	42.000	199			
4	Regression	5.446	4	1.362	7.263	.000[d]
	Residual	36.554	195	.187		
	Total	42.000	199			
5	Regression	5.689	5	1.138	6.079	.000[e]
	Residual	36.311	194	.187		
	Total	42.000	199			
6	Regression	6.729	6	1.122	6.137	.000[f]
	Residual	35.271	193	.183		
	Total	42.000	199			
a) Predictors: (Constant), inap_law						
b) Predictors: (Constant), inap_law, comp_ill						
c) Predictors: (Constant), inap_law, comp_ill, lac_of_exp						
d) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf						
e) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf, lac_of_pri						
f) Predictors: (Constant), inap_law, comp_ill, lac_of_exp, lac_of_inf, lac_of_pri, lac_of_sec						
g) Dependent variable: inefficient e-Commerce						

The next part of the output contains an analysis of variance (ANOVA) that test whether the model is significantly better at predicting the

outcome than using the mean as a 'best guess'. Specifically, the F-ratio represents the ratio of the improvement in prediction that results from fitting the model (labeled 'Regression in the table'), relative to the inaccuracy that still exists in the model ('Residual' in the table). This table is again split into six sections: one for each model.

The regression model is much greater than the inaccuracy within the model when the value of F will be greater than 1 and SPSS calculates the exact probability of obtaining the value of F by chance. For the initial model the F- ratio is 18.764, which is very unlikely to have happened by chance ($p<.001$). For the second model the value of F is 9.808, which is also highly significant ($p<.001$). The value of F- ratio of third, fourth, and sixth models are 9.285, 7.263, 6.079, and 6.137, which are also highly significant ($p<.001$). we can interpret these results as meaning that the final model may count as significant to predict the outcome variable.

Table 4: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.360	.084		16.114	.000
	inap_law	.158	.036	.294	4.332	.000
2	(Constant)	1.395	.092		15.119	.000
	inap_law	.184	.046	.342	4.022	.000
	comp_ill	-.038	.041	-.079	-.930	.354
3	(Constant)	1.245	.106		11.768	.000
	inap_law	.183	.045	.340	4.075	.000
	comp_ill	-.065	.041	-.136	-1.578	.116
	lac_of_exp	.076	.027	.193	2.754	.006
4	(Constant)	1.165	.129		9.050	.000
	inap_law	.181	.045	.337	4.027	.000
	comp_ill	-.065	.041	-.135	-1.566	.119
	lac_of_exp	.077	.027	.196	2.794	.006
	lac_of_inf	.029	.027	.073	1.084	.280
5	(Constant)	1.084	.147		7.355	.000
	inap_law	.179	.045	.333	3.985	.000
	comp_ill	-.060	.042	-.125	-1.449	.149
	lac_of_exp	.078	.027	.200	2.849	.005
	lac_of_inf	.024	.028	.059	.867	.387
	lac_of_pri	.035	.031	.078	1.140	.256
6	(Constant)	.988	.151		6.539	.000
	inap_law	.166	.045	.308	3.705	.000
	comp_ill	-.050	.041	-.105	-1.224	.222
	lac_of_exp	.059	.028	.151	2.100	.037
	lac_of_inf	.024	.027	.060	.893	.373
	lac_of_pri	.018	.031	.041	.593	.554
	lac_of_sec	.065	.027	.169	2.386	.018

The next part of the output is concerned with the parameters of the model. The first step in the hierarchy included inappropriate laws and although these parameters are interesting up to a point, it is more interested in the final model because this includes all predictors that make a significant contribution to predicting relationship between predictors and inefficient e-Commerce in Bangladesh. It will actually look only at the lower half of the table (Model 6).

In multiple regressions the model takes the form of an equation that contains a coefficient (b) for each predictor. The first part of the table gives us estimates for these b values and these values indicate the individual contribution of each predictor to the model.

The b values tell us about the relationship between inefficient and each predictor. If the value is positive it can tell that there is a positive relationship between the predictor and the outcome whereas a negative coefficient represents a negative relationship. For these data predictors have positive b values indicating positive relationships. So we see that the more inappropriate law the more inefficient will be the state of e-Commerce and affect outcome if the effects of all other predictors are held constant.

Each of these beta values has an associated standard error indicating to what extent these values would vary across different samples, and these standard errors are used to determine whether or not the b value differs significantly from zero. Therefore, if the t-test associated with a b value is significant (if the value in the column labeled sig. is less than 0.05) then that predictor is making a significant contribution to the model. For this model inappropriate law = 3.705, $p<.01$, lack of experts = 2.100, $p<.05$ and lack of security = 2.386, $p<.05$ are significant predictors of inefficient e-Commerce. From the magnitude of the t-statistics we can see that the inappropriate law had more impact than lack of experts and lack of security.

The standardized beta values (β) are all measured in standard deviation units and so are directly comparable: therefore, they provide a better insight into the 'importance of predictor in the model the standardized beta values for inappropriate laws (.308), computer illiteracy (-.105), lack of experts (.151), lack of infrastructure (.060), lack of privacy (.041) and lack of security (.169). It reveals except for computer illiteracy all other variables are positive. Therefore, interestingly the computer illiteracy is not a good predictor of inefficiency of e-Commerce in Bangladesh.

Recommendation for solution to the problem:

Since Bangladesh is a developing country and private organizations are not organized enough to provide with IT infrastructure Government should initiate programs to reduce the barriers and establish a task force at the government level to coordinate the activities related to ICT of different stakeholders. As a long-term investment government should invest in basic and higher education to reap the real benefits of ICT. (Dilruba *et.al.,* 2005).

An effective telecommunications infrastructure to facilitate export oriented IT services is to be taken as a must at the moment. Government should subsidize utility expenses for IT companies and declare tax holiday for IT and IT education enterprises. Level of English education is to be upgraded to the communication skills of the human resource.

Bangladeshi skilled professionals who are working abroad can be encouraged to return to the country and/or collaborate with Bangladeshi entrepreneurs. (Chowdhury, 2001)

e-Payment system is one of the main hindrances to e-commerce. Most of the IT activities particularly transactions with other countries require e-payment system badly. For example a single Paypal would be a great aid to solve the problem. But, we are not in the Paypal list where, even Bhutan is on the Paypal's list.

- Reducing consumer reluctance for online shopping
- Careful selection of products to offer in the virtual stores in terms of nature and price of the products
- Product standardization
- Informing consumers about the ease and benefits of online shopping.
- Considering the value the customers consider while delivering goods about the benefits the consumer gets from possessing and using a product and the associated costs for acquiring the product. (Armstrong and Kotler, 2002)
- Substantially enhancing transaction security and product quality, showing the customers that the company cares and shares about buyers' well-being (Srinivasan *et.al.,* 2002) and to help them understand that virtual shops are safe and legitimate.

- Building effective distribution channels namely postal service, direct delivery, third party delivery, and alliances with other established companies.
- Removing any obstacles that hinder the effective methods of both online and offline payment systems.
- It is imperative that the WTO support barrier-free e-commerce and the WTO rules and disciplines are applied, and where necessary adapted, to ensure effective execution of e-commerce. Adopting and implementing the WTO Information Technology agreement on financial services, and the WTO agreement on basic Telecommunications are essential for international business relating to e-commerce (Worldwide Coalition Calls for WTO Policy Agenda to Enhance Growth of eE-Commerce).

Conclusion:

In the study the authors intended to examine the existing and prospective barriers to e-Commerce to the successful operation of e-commerce in Bangladesh and suggested some strategies to overcome these barriers. Companies that market to Bangladeshi customers on the internet need to devise some unique ways to overcome the constraints that suit indigenous environment.

It is evident that in the near future there will be huge online business market in Bangladesh. This enormous opportunity is to be taken by those take advantages of the fact that e-commerce is still in its infant stage in Bangladesh. The study found that vendors should not wait until the removal of the current obstacles in the online business environment. The effort is to be exerted towards the development of appropriate e-commerce model that is suitable for the products being marketed. The business model has to encompass the three major factors: attracting potential customers, timely delivery, and comfortable payment methods.

Bangladesh is an agricultural country. The country should take the approaches to e-commerce holistically and would exert efforts to the proper utilization of ICT particularly, agricultural e-Commerce.

The study calls on the government to dismantle the restrictions and re-examine rules that prevent successful e-commerce. There are many things to do on the part of the consumers as well. They can band together to let companies and government know that they won't tolerate the artificial barriers that limit choice and raise prices. Finally, industry and professional associations should work together to apply the promise of e-commerce, not to block it.

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