

# **The State of E-Finance in Developing Countries: Bangladesh Perspective**

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The opinion expressed in the paper may not reflect the official position of the institutions represented by the author.

## List of Acronyms

ATM	Automatic Teller Machine
BIS	Business Information Services
BOP	Balance of Payments
ESTRES	Electronic Secured Transaction Registry System
FCB	Foreign Commercial Bank
GDP	Gross Domestic Product
GTZ	German Technical Cooperation
ICT	Information and Communication Technology
LAN	Local Area Network
LDC	Least Developed Country
MFI	Micro Finance Institution
NCB	Nationalized Commercial Bank
NGO	Non Government Organization
PCB	Private Commercial Bank
POS	Point of Sale
SME	Small and Medium Enterprise
TRC	Telecom Regulatory Commission
UNCTAD	United Nations Conference on Trade and Development
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network

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## ***I. The Context***

Access to finance is one of the most crucial problems in the developing and least developed countries for businesses. While access to finance is the central issue it is not less important what channels are to be used for improving access to finance. Definitely, availability of channels in an economy for financial service delivery depends on size of businesses, business pattern, technological development, integration of the economy to the global market etc. E-finance, the e-channel for financial services delivery, which has emerged from e-business, is an extension of traditional finance. It is not only serving the needs of business giants, it is also opening new avenues to integrate small players around the world facilitating improvement in efficiency, flexibility and providing global exposure. In the above context, it is quite relevant to discuss about the e-finance in LDCs, specifically how e-finance can improve access to finance situation in Bangladesh for the market as a whole and SMEs<sup>1</sup> in particular.

## ***II. Status of Access to Credit by SMEs***

SMEs are considered as one of the priority sectors of Bangladesh economy since independence. Economic history conveys that healthy economic structures are usually based on a complex network of large, medium-size and small enterprises. The intensity and quality of relationships that exists between different size of companies - the input and output they give and receive, the exchange of experiences and ideas - largely determine the dynamism and the sustainability of economic development. Very small, small and medium enterprises form the seedbed of the national economy. This sector also offers the best chance of achieving two objectives that have been mutually exclusive in the past: economic growth and fairer distribution of opportunities.

Small businesses are numerous in Bangladesh and form a large majority in the domestic markets. According to an estimate there are about 523 thousands of small enterprises including cottage industries in the country employing about 2.3 millions of people, which is around 82 percent of total industrial labor forces [Khan, 1999]. Other than manufacturing enterprises the number of SMEs involved in domestic and international trade exceed million.

According the latest available statistics, 50.53 percent of SMEs have no access to formal source of finance. Only 35.79 percent of SMEs enjoy unrestricted access to the formal credit. The rest (13.68 percent) of them have restricted access to the formal credit. Bank credit is used by small percentage of entrepreneurs and provides financing of generally less than 20 percent of their total outlay [Choudhury and Raihan, 2000]. Majority of the SMEs (59.6 percent) seek finance for their working capital needs from banks, although only a half-of them get loan from banks [see Table

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<sup>1</sup>Various definitions of SMEs emerge in different countries. In Bangladesh, a small enterprise is having 10 or less number of workers. According to the BSCIC a company with Tk. 100 million or less assets or employing not more than 50 is considered as SME.

1]. Trade credit is second most important source to many small entrepreneurs with relatively little problem, although provided at a much higher rate of interest than banks, it is available when most needed.

**Table 1. Sources of Credit sought and received by SMEs**

<i>Source</i>	<i>Percentage of SMEs sought Credit</i>	<i>Percentage of SMEs received Credit</i>
Bank	59.6	53.57
Trade Credit	27.7	100
Relatives/friends	21.3	100
Money Lender	6.4	100
Samity	6.4	92.31
Others	2.1	100

Source: Choudhury and Raihan, 2000.

### **III. Infrastructure of E-Finance in Bangladesh**

Emergence and growth of e-finance in a country depends on the following factors: (a) availability and growth of reliable and secured information infrastructure (basically telecommunication network); (b) ICT penetration in businesses and financial sector; (c) prevailing business pattern and business culture; and (d) legal and regulatory framework. The following section discusses first two factors to understand the scope of e-finance in Bangladesh.

#### **III. 1. Information Infrastructure**

Struggling with world's one of the lowest tele-density<sup>2</sup> ratings, Bangladesh ranked 38<sup>th</sup> among the 40 countries of Asia Pacific region in 1999 [Khan A.S. 2001]. In the backdrop of 8.5% Asia-Pacific teledensity and 2.8% in South Asia, Bangladesh has a long way to go to bridge her "Missing Link". Current teledensity in Bangladesh is approximately 0.5%. Access to telephony (as opposed to tele-density) is not measured in Bangladesh, but the majority of the population does not have easy access to affordable and reliable telephony services, and where they do, it is restricted for the vast majority to a simple voice service. Current fixed line connections number only some 600,000, and waiting lists for a new line exceed several years. It is expected that deregulation in telecom sector and creation of TRC will create level playing field for the private sector for bridging the missing link in near future. Already, the WorldTel is installing now new 300, 000 lines in the country.

Mobile network in Bangladesh is expanding with an exponential growth rate. While the subscribers without interconnectivity recorded a 359% growth in 2000, mobile users with universal access grew only by 15%. The earlier will continue to grow exponentially in 2001. Expansion of mobile network throughout the country creates scope for WAP based business applications. Some companies already provide mobile internet services in the country.

Although the Internet in Bangladesh has grown rapidly in the last few years, the total bandwidth capacity in July, 2001 was estimated between 200 to 250 mbps The speed

<sup>2</sup> Teledensity refers to the number of fixed telephone lines per 100 population. Mobiles which do not provide access to fixed telephone line (Namely BTTB) are not included in the definition.

of Internet connection varies between 64 kbps and 2 mbps gateway access. The digital cable network access to utilize optimum bandwidth or access to broadband services is gradually expanding. Public access to the Internet is increasing in major cities. An increasing competition is being observed among the ISPs. Since the deregulation of VAST, prices have come down almost 140 percent on average and are stilling declining. Average rate now is ¢ 0.8 per minute. Several ISPs are offering flat rate services [Raihan, 2001(a)].

### III. 2. ICT Penetration in Businesses and Financial Sector

With a huge scope of improvement in the situation, the existing telecom infrastructure has created opportunities for introducing e-business, which are already explored by many companies. Around 4, 000 domain names so far have been registered during the last couple of years. Hundreds of B2C sites and portals, most them run by SMEs, are operating in domestic market and also in the international market targeting mainly Bangladeshi Diaspora.

The financial sector of Bangladesh is dominated by the banking system. Recently leasing business is getting momentum with appreciable level of ICT penetration. Due to the lack of available data, we have concentrated on the ICT penetration in the banking sector.

The overall picture of computerization in the banking sector is presented in the table 2. Other than FCBs, the computerization status is concentrated only in limited number of branches, mainly in major cities. Only 1131 branches have at least one computer. Networked based system is very limited in the NCBs and PCBs.

**Table 2. Computerized Branches in different types of Commercial Banks**

Branches with various facilities	Availability in Banks		
	NCBs	PCBs	FCBs
Computerized Branches	19%	38%	100%
Number of Branches Linked within branches	3%	1%	76%
Number of Branches Linked with other branches	0.86%	22%	76%

Source: Raihan, 2001b.

Overall computer density in the banking sector is 1.64. For foreign commercial banks the computer density is 45.34, where as for NCBs the ratio is only 0.41. The specialized bank scenario is almost same as the NCBs, 0.43. On the other hand, private commercial banks have comparatively higher ratio, 4.94. As a whole 81.81 percent bank does not have any LAN. LAN penetration ratio [considering the branch level] is also very poor for overall banking sector, 0.07. The ideal ratio should be 1. Only FCBs have satisfactory picture in this case. The PCB has an acceptable ratio, 0.22. Some midrange and mainframe computer systems are also available in the banking sector [Raihan et al, 2000].<sup>3</sup> Only 30 percent of banks have inter branch connectivity through ICT network [WAN]. The configuration of WAN varies within centralized database and distributed database. But not all the branches are under WAN, so the transaction processing and information exchange is not robust in

<sup>3</sup> The ICT penetration has been measured as computer density as ratio of computers to the number of branches; LAN Penetration as number of LAN to the number of branches, WAN penetration as ratio of WAN in the banking sector to the number banks in the market etc.

majority of the cases. The connectivity of WAN is available through VSAT, T1 line and dial up [Raihan et al., 2000].

NCBs is the unique market player with more than 50 percent of market share, so ICT penetration is more crucial for this category of banks. NCBs are trying to improve the ICT penetration through integrating regional offices using high range mainframe systems.

At the head office level 95.45 percent of banks use banking software. 24 types of banking software are used. Among the banking software used in the banks 51.47 percent have been developed in house, 47.06 percent are off-the-shelf [OTS], only 1.47 percent are using both OTS and in house software. Majority of the software are developed locally both for cost reason and convenience with the local business practice [Raihan, 2001b].

Most of the banks have Management Information Systems. However, only 38 percent MIS are integrated to the transaction processing system [TPS]. Due to the limitations in local banking solutions and considering the specificity of the local requirements the banks and local software houses are going for collaboration with internationally reputed solution providers like Globus Temenos, I-Flex, Infosys etc.

Reuters system is the most widely used product of EBS in Bangladesh. About 41 percent of banks have Reuters' terminal for foreign exchange transactions [Raihan, 2001b]. With the implementation of this system, Banks have the on-line access to the international money market for dealing in foreign exchange more efficiently and keep the dealers updated with the developments of international money market instantly. Recently a number of commercial banks of Bangladesh have become the member of Belgium based Society for Worldwide Interbank Financial Telecommunication (SWIFT). For international payment settlement 33 percent of banks are using now SWIFT. With the activation of the SWIFT system banks enjoy instant, low-cost, speedy and reliable connectivity for L/C transmission, fund transfers, message communication and worldwide financial activities. Earlier only foreign banks of this country were availing this facility.

The Central Bank of Bangladesh has implemented an off-line computerized reconciliation system and data management system with in-house developed system named "Nikash". Network system between the Central Bank and the Commercial Banks has not yet been developed.

#### ***IV. E-finance in Bangladesh***

The foreign banks are the pioneers in adopting electronic finance in Bangladesh. Most of the foreign banks are using the computerized transaction system and taking advantage of the superior technology by attracting customers and providing inter-branch and interbank linkage. Foreign banks through successful use of a global network, has increased the timeliness and accuracy of information, benefiting its customers, its employees and also its management.

A broad spectrum of electronic banking services, a subset of e-finance, is available in Bangladesh with various degree of penetration. Credit card and POS services is provided by 23 percent of banks [PCBs and FCBs]. Several thousands of POS

terminals have been set in major cities of the country. Telebanking is second most penetrated e-banking service in Bangladesh. ATM is expanding rapidly in major cities. A group of domestic and foreign banks operate shared ATM network, which drastically increase access to this type of electronic banking service. The network will gradually be extended to other parts of the country. Credit card is also becoming very popular service in major cities of Bangladesh, during 1999 - 2000 the growth of credit card market is more than 100 percent [Raihan, 2001b]. The credit card service is available from VISA, MasterCard and VANIK. Some foreign banks provide electronic fund transfer services. Microchips embedded Smart Card is also becoming popular in the country, particularly for utility bill payment.

**Table 3. Electronic Banking Services in Bangladesh [% of Banks]<sup>4</sup>**

<b>EBS</b>	<b>1998</b>	<b>2000</b>	<b>2001</b>
Tele Banking	14	20	24
Online corporate banking	...	8	12
Electronic Fund Transfer	15.4	15	18
ATM	14	15.4	28
Credit card	10	23	-
Debit card	-	3.8	18
Merchant account service to merchant	-	3.8	12
Internet Banking	...	7.6	12

Source: Raihan, 2001b.

Note: "...” denotes service unavailability, “-” denotes data unavailability.

Only a limited number of customers get access to the international credit card and thus to e-business transaction due to the limitation in foreign exchange regulation act.

Due to the lack of robust technology infrastructure of commercial financial institutions capable of supporting online authorization and settlement of e-business transactions, the businesses use payment server located out side Bangladesh for settlement. Many B2C sites are already functioning using this model. There is no regulation at this moment restricting electronic settlement of e-business transactions or the use of electronic payment technologies.

Last couple of years shows dramatic improvement in the awareness situation in the banking community regarding the comprehensive application of ICT . The experts forecast that ICT penetration in the banking sector will improve dramatically by 2005. Majority of banks is planning to introduce ICT for integration of banking services and new e-finance services, which will play a vital role in bringing efficiency in the financial sector. Among the banks surveyed 75 percent of banks have strategic plan to implement ICT and e banking [Raihan et al., 2000].

In absence of robust e-payment system the rapid growth of Internet services, software industry, human resource development institutions, some business –to – commerce sites require some interim solution for payment. The payment system has a mission critical role for e-business transaction.

<sup>4</sup> Column for 2001 not included in the main paper.

## ***V. E-finance Initiatives in Bangladesh***

E-finance initiatives in Bangladesh can be grouped as follows: (a) Steps to introduce innovative e-finance services specially designed for SMEs; (b) Foundation building initiatives for robust functioning of e-finance.

### *V.1. Innovative E-finance Initiatives for SMEs*

While there are some initiatives by banks to provide e-finance services only for valued customers within available infrastructure, some innovative programs are under process of implementation which are especially designed for the SMEs.

#### *V.1.1. E-finance for Self Employment*

Grameen Bank, the successful innovator of micro-finance programs for poor is going to implement its ambitious e-finance program for self employment.

Grameen Bank has taken an initiative to introduce smart cards for the micro finance and SME clients throughout the country. Bangladesh is the pioneer in bringing the poor under the network of financial services aiming improving their livelihood. Millions of borrowers are getting financial services from the MFIs. Grameen Bank plans to introduce initially POS terminals in different villages of Bangladesh, where Grameen members are located. These terminals will enable transactions similar to credit cards used in the cities. The user of these cards will be able to read and record entries enabling cash deposit and withdrawal. The POS network will gradually expanded for other MFI members and SMEs and other businesses. Grameen Bank plans to set up this network throughout the country using a combination of network technology and various sources of energy including solar energy.

#### *V.1.2. Secured Transaction Law and Electronic Collateral Registry*

Like traditional finance e-finance also faces some regulatory, legal, technical and risk oriented challenges. The major barriers for getting access to finance in Bangladesh particularly for SMEs are lack of collateral for the demand side. Collateral is the most serious barrier of access to credit, mentioned both by the borrowers and non-borrowers (79.4 percent) in a survey performed by BIBM [Choudhury and Raihan, 2000]. The major barriers to provide finance to SMEs were interest rate ceiling and high risk involved in providing finance against movable property. The interest rate ceiling has been removed in 1999, and created a viable opportunity for commercial banks to go for SME financing. Many private commercial banks have initiated to provide credit to SMEs through traditional channels with immovable collateral security. Various research works identified that credit against movable can ensure greater access for SMEs to credit facilities. However, financial institutions do not feel enthusiasm to go for such provision. A legal framework is required which can ensure effective enforcement of credit obligations arisen from credit against movable assets. JOBS, an initiative of USAID implemented by IRIS of University of Maryland, USA is in the process of implementation of an Electronic Secured Transaction Registry System (ESTRES<sup>5</sup>). This system will facilitate access to finance against immovable property secured by law. Side by side, the draft of Secured Transaction Act, 2001 is in

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<sup>5</sup> This is an unofficial acronym

process of enactment by the parliament. The new law would provide with consistent, codified rules governing security in movable property and the resolution of completing claims to such property. The ESTRES would create an inexpensive, electronic public records system allowing individuals to retrieve information about all movable property claims. The law would strengthen the enforcement system for creditors. The purpose of ESTRES is to maintain a country wide centralised database of security interests in movable goods, which is accessible for verification, automatic foreclosure in case of default and other business purposes. A modern registry system will serve two purposes. First, it will warn creditors of prior claims on assets. Second, in the absence of any prior claims, it will establish the creditor's priority on collateral [JOBS, 2001].

The feasibility study of the whole system has already been completed in September 2001. The system is planned to be launched in 2003. The system will bring confidence among the financial institutions to drive for large SME market segment. The registry system will act as a foundation for building a nation-wide system of registry with centralised database, which will ultimately be a component of integrated e-finance system. The system will resolve the problem of absence of reliable information on SMEs. It will also encourage them to switch from informal to formal system of functioning.

The system will run by private entity under government license. Major clients of the system will be: (a) commercial banks, credit organization and other financial companies; (b) leasing companies; (c) local law firms;(d) office of notary public; (e) government ministries, departments and agencies and any other interested parties. The business plan shows that the system will be highly profitable and will not require any government subsidy.

### *V.1.3. Specialised Bank Getting ready for E-finance*

A specialised bank *Bank of Small Industry and Commerce (BASIC Bank)* has started to implement a *multi-channel banking project*, which is envisaged to provide with e-finance services to SMEs through high volume credit card, any branch banking, EFT, and internet banking services. As a specialised bank it is already providing financial support to more than 100, 000 SMEs.

## ***VI. Building Foundation for E-finance***

### *VI.1. Online Business Information Services*

One of the major handicaps for the entrepreneurs, in particular SMEs, is lack of reliable and validated, business-related information, which is required for judicious investment decisions, efficient management and competitive marketing. The information gap is related at least to the following areas: the procedure of business, legal issues, cost and process of products and services, market and industry average information and sensible business contact information. Other actors (like local and foreign investors, banks, leasing companies, micro finance institutions, insurance companies, and other financial institutions, business institutions, research organizations, venture capitalists, NGOs, ministries and government agencies,

revenue and tax authorities, international development financial institutions) also hesitate or sometimes take excessive risks in making investment decisions due to lack of information.

GTZ, the German technical cooperation agency is providing technical assistance for building an ICT based business information services [BIS] to fill the gap through the development of a business information system, which will be accessible from anywhere of the country. This information system will also play a significant role in building the foundation of robust e-finance superstructure. Starting in 2002 the whole BIS project will be implemented in stages by 2008.

### *VI.2. E-Credit Information*

Third party credit information services are scarce in LDCs for proper evaluation of credit risk. In the recent past some private credit risk intelligence services have emerged in the market place. They are at the take-off stage with some probing by private banks. One of the agencies *Credit Risk Information Services Limited (CRISL)* has passed the test of time and gradually invokes confidence among the creditors. CRISL is planning to go online with credit information services.

## **VII. Challenges of E-finance for LDCs**

### *VII.1. Capacity Building*

As we have already mentioned that e-finance has emerged from the simless transaction demand of e-business, the challenges for developing such system are many. We are more or less aware of the technical challenges related to security and privacy. However, there are some institutional and resource constraints which sometimes become mission critical for developing such system. In bringing positive changes the central bank should play a championing role in developing appropriate legal and regulatory framework. Unfortunately, due to lack of know how often central banks fail play that role which impede the development of e-business and facilitating e-finance. It is obvious without forward looking cyber law and digital signature law along with other related legal updates it is not possible to bring confidence among the potential market players. Only central bank can play a positive role by in-house capacity building, by technical upgradation of services provided by the central bank to the subordinate market players and also by creating appropriate regulatory framework which facilitate swift inter-city and inter state transactions. Technical assistance in technological upgradation and preparing legal framework is essential for the developing and least developed countries.

### *VII.2. Monetary Policy*

Among other hurdles there are some monetary policy related issues like international reserve of a country and currency convertibility, which hinder e-finance growth. The countries with weak BOP situation do not dare to go for full fledged e-business and e-finance fearing money laundering and currency crisis. Often this sort of perceptions is not based on proper analysis of the probable scenarios. There are some scenarios, where the BOP situation can only be improved through exercising e-business and e-

finance. Here, we need research and pragmatic steps for reviewing existing misperception.

### *VII.3. Investment Shortfall*

Investment shortfall is another problem faced by many countries to go for infrastructure development for e-business and e-finance. For example, to develop country wide telecommunication network Bangladesh need around 7 billion USD within next four years. It is not possible for the government or domestic private sector to pool such huge fund. International support can also be very timely through investment for developing the telecom sector.

For SMEs in developing and least developed countries, ICT based business can make a difference in enhancing GDP and alleviating poverty. For greater access to ICT, the concept of ICT intermediary should be developed further which can resolve the cost-benefit issues of ICT use by SMEs. International organisation like UNCTAD can play a very significant role in this regard.

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