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E-Banking: Evolution, Status and Prospects

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Abstract: *The beginning of the E-Business age has been shivering the business environment and breaking out innovative and unconventional ways of doing business. One of the latest outcomes of this E-Business is internet banking or E-Banking. Banking sector is now reengineering it to adopt the change and to be in the race of globalization. Thus it has become imperative for the banking industry to better gauge the E-Banking phenomenon. This study painstakingly attempts to bestow the evolution, competitive forces, strategy, present status, and prospect of E-Banking, so that the existing banks and potential e-banks could better understand this opportunity and could reap the best benefit from it.*

Keywords: *E-Banking, E-Commerce, E-Business, Competitive Forces, Online Banking, ATM.*

Introduction

The advent of E-Business accompanied wi th technological innovations and globalization is constantly propelling the businesses organization to redefine their business operations in terms of value chain reengineering and restructuring business models. Likely, the financial sector is metamorphosing under the impact of competitive, regulatory and technological forces (Jeevan, 2000). Financial institutions especially the banking sector is currently in a transition phase (Cronin, 1998). The banks have put themselves in the World Wide Web to take advantage of the internet's power and reach, to cope with the accelerating pace of change of business environment. The famous quote by Bill Gates that banking is vital to a healthy economy, but banks themselves are not (Serwer 1995; Jeevan 2000; Varma 2001) highlights the crucial nature of the electronic forces that are affecting banks more than any other financial service provider group. This transition of business operations by banks have crated new mode of operation called E-Banking.

This paper represents the E-Banking phenomenon from its scratch to its future states. The first section of this study contains a guideline as what to expect from the paper. The second section contains a detailed analysis on the theory, evolution and present condition of E-Banking world

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wide. The last section contains some effective recommendations for the government on developing and maintaining an effective enabling environment for E-Banking and for existing banks and potential e-banks on how to develop and be successful in E-Banking business.

Objective of the Study

E-Banking has been shaking and shaping the financial sector world wide. Thus it has become imperative to know the issue E-Banking in-depth: evolution, status and prospect. Thus the objectives of the study are to:

- To understand the issue E-Banking and its evolution.
- To analyze the viability and finding out suitable business model.
- To state the present situation of E-Banking worldwide.
- To recommend the government role on establishing E-Banking.
- To suggest the existing banks and potential e-banks on how to deal effectively with this new opportunity.

Methodology

A brief history of the banking industry worldwide, using document analysis has revealed concepts, evolution, competitive forces, business models, major barriers, impediments and drivers for the rapid transition of the banking sector and uptake of E-Banking. Neuman (1997) attributed document analysis to the systematic analysis of a particular topic, using newspapers, annual reports, employment records, unpublished and published articles, industry and consultancy reports, ongoing academic working papers, government white papers reports and white papers. Besides those sources internet is used ext ensively as a source of information.

Objectives	Methods
E-Banking Literature E-Banking Business Model E-Banking Viability	***Secondary Data:*** newspapers, annual reports, , unpublished and published articles, industry and consultancy reports, ongoing academic working papers, government white paper reports and white papers
Present Status of E-Banking	United Nations Conference on Trade and Development Report: 2000-2004

E-Banking

The term Internet Banking or E-Banking Internet both are used as supplement. E-Banking is the one of the major part of E-Financing. Hertzum et al. (2004) defined E-Banking as web-based Banking. In other words E-Banking refers to the banking operations, which is done over World Wide Web. However, more comprehensive and well-established definition is given by the United Nations Conference on Trade and Development (UNCTAD). This definition covers almost all area of E-Banking.

Internet banking refers to the deployment over the Internet of retail and wholesale banking services. It involves individual and corporate clients, and includes bank transfers, payments

and settlements, documentary collections and credits, corporate and household lending, card business and some others (UNCTAD, 2002).

E-Banking information architecture is modeled as client-server architecture. A client operating through a PC linked to Internet opens the special E-Banking site of his bank and then, using a set of special secure numbers, gets access to his bank accounts and has the opportunity to consult them, as well as to make all necessary payments and transfers form his personal accounts. When the transaction number is exhausted the bank sends him a new set of numbers for his individual transfer sessions. In some cases the bank provides customized software. The bank software program can also be utilized offline, for example for preparing the payment orders offline and then making the actual order online. The client receives all numbers separately, mainly by mail. The bank also provide clients with similar facilities in its premises so that clients can use the bank equipment such as an ATM or a special facility linked to the main terminal facility called Multimat, permitting them to effect the same account examination, payment and transfer operations without consulting the bank staff.

Evolution

Since the late 1990s E-Banking has developed from virtual insignificance to tens of millions of users worldwide (OECD, 2001). However, E-Banking is the product of different generations of electronic transactions. The current web-based internet or E-Banking is the latest of several generations of systems: *Automated Teller machine (ATMs), Phone Banking, PC or House Banking.* Automated teller machines (ATMs) were the first well-known machines to provide electronic access to customers where as in phone banking, users call their bank's computer system on their ordinary phone and use the phone keypad to perform banking transactions. PC banking superseded phone banking and allowed users to interact with their bank by means of a computer with a dial-up modem connection to the phone network. Phone and PC banking entailed maintenance costs associated with keeping up to date with diverse modems and with avoiding prohibitively complex installation procedures.

After those generations Deutsche Bank launched the very first Internet banking project in Latin America in 1996 and Citibank has developed a special "e-toolkit" across all its branches worldwide (UNCTAD, 2002). E-Banking uses the web browser for the user interface and the Internet for data transfer and download of software, and so has a potential for reducing maintenance costs. For users, E-Banking provides current information, 24-hours-a-day access to banking services. The primary services provided by e-banks are transferring money among one's own accounts, paying bills, and checking account balances. Loans, brokering, share trading, service bundling, and a host of other financial services are being added to these primary services (Dewan & Seidmann, 2001).

E-Banking is widely used in, among other places, the Nordic countries. In 2001, E-Banking was used by more than 25% of the population in Norway, Sweden, and Finland, and by 15% of the population in Denmark (OECD, 2001). In 2004, E-Banking usage in Denmark had

grown to 45% (Statistics Denmark, 2004). Jeevan (2000) notes that with rigid controls giving way to deregulation, banks are gearing up their communications infrastructure to obtain a competitive edge from E-Banking, hich is fast becoming a reality in India. Nair (1999) points out that E-Banking is fast becoming a strategic necessity for most commercial banks, as competition increases from private banks and NBFIs.

E-Banking Opportunity and Challenges

According to the "E-Commerce beyond 2000", the banking and finance sector has been a rapid adopter of E-Commerce because its products could easily be virtualized and the product had priority over place (NOIE, 2000). Yerkes (1998) observes that banks can generate revenue through increased account access fees, and benefit from promotional opportunity to cross-sell products such as credit cards and loans.

Whereas Stamoulis (2000) observed that banks initially promoted their core capabilities, such as products, channels and advice, through the Internet, Yerkes (1998) argues that, due to the relative newness of this rapidly growing industry, banks as well as consumers had serious concerns about the security of Internet access to client accounts, which was the biggest challenge (Denny 2000). The advances in Internet security and the advent of relevant protocols such as Integrion, OFX, SET, etc. has put banks in perspective again as financial intermediaries and facilitators of complete commercial transactions via electronic networks and especially via the Internet (Stamoulis, 2000).

Consumers are increasingly looking for services they can access from a single entry point. As Denny (2000) observes, awareness of competition has motivated banks to move aggressively in seeking alliances and establishing joint ventures to maintain their claim to this part of the E-Commerce infrastructure. Like there are alliances in the ATM network, Group Network, Money Transfer Network etc. This is also creating segmentation of networks where the customers of this networks sometimes unable to access to others' network. Seitz and Stickel (1998) note that consumer behavior in banking changed partly as a result of changes in the amount of spare time available to individuals. Mobility, independence of time and place, and flexibility has become key words in consumer banking.

Timmers (2000) supports this view, highlighting the key features of the Internet – such as 24 hour availability, almost immediate access, and the absence of physical borders. Indeed, the Internet has been one of the key drivers in promoting E-Commerce in the banking sector (Jeevan, 2000). The opportunities for banks in the Internet arena are varied (Stamoulis, 2000). Despite this plethora of opportunities, threats to the e-banks abound. One major threat to banks is the "Internet only" virtual banks. With US$ 2 million, one can set up a fully-functional, Internet Only bank and provide payment services on the Internet.

The Internet banks serve also as gateways offering identification and authorization services to a number of third party service providers. There are user-friendly opportunities for conducting business over the Internet with telephone companies, Energy Company, tax board and other

institutions. Demand for those services influences also the usage rates of Internet banks. For example in 2002 in USA, 81867 private individuals submitted electronic tax declarations 79727 of them did it through Internet banks and 2140 through tax board's own home page. (20.3% of declarations were submitted electronically). This is increasing the benefits of Internet banks for the consumers and is a win-win situation for the banks and service providers.

Regulatory barriers in many countries are on the wane (Sathye, 1998). As the Internet gains momentum, governments are under pressure to reduce the barriers to competitive activity in the financial sector still further, to allow existing banks to remain competitive with their newer rivals (Carew, 1998). It is evident that banks can obtain an advantage by exploiting their existing, E-Commerce-ready infrastructure, through leveraging it on the Internet (Fellenstein and Wood, 2000), but this opportunity must be seen in the context of a highly competitive, rapidly-moving market-place in which new rivals are emerging from many different directions.

Several studies including Schultz et al. (2001) suggest that security measures that are inconvenient for users may weaken E-Banking prospect, for example because of lack of user acceptance or outright resistance. Dourish and Redmiles (2002) propose a distinction between theoretical and effective security. Theoretical security concerns the level of security that is technically possible; whereas effective security concerns the level of security achieved in practice, and is typically lower than theoretical security. Several studies including Jih et al. (2005) indicate that user adoption of E-Banking is affected by perceived security. This supports a view of security as crucial to the overall usability of E-Banking systems.

E-Banking Competitiveness

E-Banking is developing gradually and it is getting acceptance globally. But, whether this field is lucrative for entry can be judged by industry and competitive analysis. Like other industry, Porter's Five Forces Model of Competition (Porter, 1985) can also be applied to understand E-Banking competitiveness.

Rivalry among Competing Parties

As there is no single internet only bank exist in this world, the current rivalry among the competitor or banks in the banking industry should be considered. Banking institutions are countering their competitors by leveraging E-Commerce technologies and various service offerings online (Morath, 2000). This is a major shift from the early days of Electronic Funds Transfer (EFT), when large organisations introduced electronic banking to simplify the management of their salary and payroll problems (Crede, 1995; Carew 1998). Stamoulis (2000) observes that the Internet is increasingly considered a strategic weapon by banks, which are leveraging it as a distribution channel to offer complex products at the same quality they can provide from their physical branches, at a lower cost, to more potential customers, without boundaries. E-Banking is used to augment their current value chain, offering new product and compete for the customers.

New Entrants

At present, the entry barriers to Internet banking appear to be much higher for new entrants than was the case during the early days of this type of banking. The barriers stem from customer attitudes and the very nature of banking services and products. The traditional banks with a strong customer base have a competitive advantage over newcomers. However, Li (1997) argue that one of the critical factors – barriers to entry – no longer exists in banking. Foster et al (1999) have also observed that competitors can come from any industry to "disintermediate" banks (i.e., eliminate banks as the interface between customers and suppliers). Product differentiation is very difficult for banks, since most of the products sold in retail banking are constrained by legal or industry regulations and, in any case, are readily imitated (Nemzow, 1999). Many countries have de-regulated their banking sector (Lyell, 1997; Carew 1998; Lucia and Peters, 1998) so government policies no longer form an entry barrier to banks' competitors. Technological know-how in banking also provides low protection to existing banks (Stemper, 1990). As Li (1997) argues, the only significant entry barrier is likely to be the brand name of the service providers in retail banking.

Suppliers

Supplier has much bargaining power in this industry, as there are a small number of large players in the industry (Kotler and Armstrong, 1997). Dial (1995) observes that banking demonstrates the typical attributes of an oligopoly – such as risk avoidance and relatively undifferentiated customer service – which have made it susceptible to encroachment by software giants such as Microsoft, who are attempting to replace banks as intermediaries (Kalakota and Frei, 1998).

Buyers

As Mishra (2001) has noted, the Internet has levelled the playing field: the bargaining power of consumers is increasing, switching costs are becoming lower (with Internet banking gaining momentum), and consumer loyalties are harder to retain (Nemzow, 1999). Some specific factors that have conspired to create the new competitive environment for banking include: changing consumer needs and perceptions, globalisation, technological innovations, and competition from non-banking entities (Aveling, 1989; Kalakota and Whinston, 1997; Morath, 2000). Though many banks offered 'home banking services' from a PC during the 1980s and 1990s, the concept was initially a failure due to the lack of a critical mass of PCs and computer literate customers, as well as to the somewhat limited user interfaces initially available (Lucia and Peters, 1998). Home banking, however, is gaining in popularity with increasingly literate consumers, a wider installed PC base (Stemper, 1990; Fellenstein and Wood, 2000) and more generic features together with the user-friendly interface the Web enables (Denny, 2000; Sathye, 1998).

Substitutes

The threat of substitutes to banking in terms of competition from the non-banking, financial, and micro credit sector is increasing rapidly. As Viermetz (1998) observes, the major credit card issuer in the US is not a bank but rather Dean Witter of Discover Card fame. Huggins

(2001) points to the fact that traditional boundaries in banking are disappearing. Using E-Business methods, major retailers and telecom providers are starting to offer financial services to their clients. Attitudes are also shifting from direct transactions to savings and investment, as the baby boomers reach their forties and fifties, and prepare for retirement (Carew, 1998). Increasingly, consumers expect online services from their financial institutions (Constantine, 2000). The trend toward electronic delivery of products and services is particularly important to the financial services industry, where the shift is partly a result of consumer demand, but is also partly a result of the ruthlessly competitive environment (Geyer, 1997).

The analysis of the current state of E-Banking reveals that the field is getting fierce day by day. Every member of this industry is participating to some extent in E-Banking. Substitute products by non-banking sectors, disintermediay issues, brand preference, increased buyer barging power, change of preference made the competitive environment unfavorable for the new entrants. However, to survive existing banking sectors must embrace E-Banking.

E-Banking Strategy

Several model of E-Business were tried by different banks all over the world to get them involved in the E-Banking vicinity. The most used E-Business model were *Internet Only, Brick-and-Click or Click-and-Mortar*. However, 'Internet Only' model failed to survive. Security First Net Bank (SFNB) which was formed in 1996 in the US (Humphreys, 1998) and claims to be the first Internet-only bank in the world. But it was acquired by the Royal Bank of Canada in 1998 (Pratt, 2000; Arora 2000), suggesting that customers may still want the comfort of a physical presence. The present trend is 'Brick and Click' or 'Click and Mortar', where banks serve their customers through internet having physical operations simultaneously. Progress in information technology has reduced transportation costs (Vesala, 2000), transaction cost and thus Jeevan (2000) suggests that the Internet enabled banks to offer low-cost, high value-added financial services.

Although price incentives can play significant role in getting customers online the service needs to be based on quality rather than price only. Developing technological solutions should was not done with a product or line of business in focus but with a customer relationship focus with integrated delivery of products and services. Success or failure in Internet banking is greatly determined by the integration of technology infrastructure with the business processes.

E-Banking World Wide

Since its inception, Internet banking has experienced strong and sustained growth. World Bank report on leapfrogging in e-finance pointed out that the three countries with impressive progress in information technology in this sense are Estonia, Republic of Korea and Brazil (Claessens et al 2001). Creation of the world's leading electronic banking systems has been done at a remarkably low cost compared to other world-class internet banks (Sahlen 2002).

As a result, Internet banking operations currently represent between 5 per cent and 10 per cent of the total volume of retail banking transactions both in the United States and in Europe. According to Jupiter Media, Internet traffic for all United States banks grew by 77.6 per cent between July 2000 and July 2001, compared with overall World Wide Web traffic growth of 19.8 per cent over the same period. Another source estimated that the share of United States households using Internet banking will increase from 20 per cent in 2001 to 33 per cent in 2005, and that by 2010 there might be 55 billion users.

In the European Union, 60 million people, representing 18 per cent of the adult population, use online banking (Forrester Research 2003a). In France, the number of online banking accounts is recording an annual growth rate of 75 per cent. However, Estonia is a country that has become a leader in Internet banking (which now reaches 18 per cent of the population), not only among Eastern European countries but in world rankings, through a combination of easy-to-use software, free-of-charge transactions and behavior changes resulting from the influence of the Nordic countries' IT culture on Estonia.

A sector in which Latin America is seems to be performing better than in other industries is online retail banking. Growth in this area has been driven by traditional banks, which have used the online channel to generate customer loyalty and improve their operating margins. Two Brazilian banks, Bradesco and Banco do Brasil, have thus achieved more than 4 million online customers each (E-Marketer 2002b). Mexico is another leader of Internet banking in Latin America. It adopted legislation providing for the development of both E-Commerce and e-finance. In Mexico, the number of online bank users more than tripled from 700,000 in 2000 to 2.4 million in 2001, and it could reach 4.5 million in 2005 (E-Marketer 2002b). One reason for the success of Latin American banks' online ventures seems to be the attention they have paid to providing retail customers with multiple ways to access their accounts (Internet, telephone, wireless). However, given that the share of the total population that actually has a bank account is relatively small, the expansion of Latin American online banking may be facing a bottleneck.

According to the "Banking on the Internet" report (NOIE, 2000), Australia has a strong platform for E-Banking growth, with 37.7% of the population willing to engage in home Internet Banking. Statistics reveal that the largest increase for the period 1998-2000 was in the use of the Internet banking/bill payment category, which increased from 0.6% in May 1998 to 8% in May 2000 an increase of 81.0%. Banks in Australia have responded to customer demand by providing interactive services (NOIE, 2000) through account-monitoring and management services, other value-added services such as Insurance Management, online securities trading, foreign currency transactions and electronic reminders. All banks offering E-Banking also offer security for transactions using firewalls, virus protection, 128 bit (or higher) encryption, verification by means of digital certificate and state limits to customer liability for unauthorized use of access codes. However, Batt (2001) argues that Internet banking is yet to reach a scale that offers material cost savings to banks. Compared with overall Internet usage estimated at 4.4 million in Australia, the major banks together have attracted only 1.2 million to online banking.

The Internet is a global phenomenon and so is e-finance. Its deployment is not limited to developed countries, and indeed some developing countries – such as India and the Republic of Korea – are experiencing particularly strong growth in E-Banking. Thailand's e-payment strategy 2002–2004, under the leadership of the Bank of Thailand, has created an industry payment body to involve other stakeholders, in particular from commercial banks, which take leading responsibility for the development of e-payment systems and technologies.

In Asia one of the most impressive records has been achieved by the Republic of Korea. Internet banking in that country has increased at a rapid pace, the number of online users having risen from 2 million in 2000 to 5.3 million in December 2001. The country is a leader in the region with 54 per cent of users having multiple online banking relationships (Korea Times Infotech, 2002). The Republic of Korea is also leading in online brokerage and in mobile banking. In South-East Asia Internet banking is also developing rapidly in Thailand, Malaysia, and Singapore and to a lesser extent, in the Philippines.

Jeevan (2000) notes that with rigid controls is giving way to deregulation, banks are gearing up their communications infrastructure to obtain a competitive edge from E-Banking, which is fast becoming a reality in India. A. Nair (1999) point out that E-Banking is fast becoming a strategic necessity for most commercial banks, as competition increases from private banks and NBFIs. Though de-regulation may have had an impact on the banking industry in general, the Indian infrastructure itself is plagued by a lack of PC penetration (there is an estimated 2 million units for a population close to 1 billion according to Gupta and Storey, (1999) and low telephone penetration (19.1 million in 1999). Thus India has got low E-Banking adoption rates, low labor costs and "free" existing branches, there is a better price discovery process as more and more markets gain integrated real-time and improved access to these trading and data-dissemination platforms. At the same time, however, many changes are still required in technology, access infrastructure and banking regulation

In Bangladesh there is a large gap between the computerization of foreign banks and that of local commercial banks (the gap is particularly great in respect of local public commercial banks) and as regards the state of their intra- and inter-branch online networks. However, 75 per cent of local banks are planning to introduce E-Banking, which implies very dynamic improvements in their ICT use indicators. Virtually all banks use banking software at their head offices and during the past few years around one third of local banks has become SWIFT members. Credit card and point of sale services (POS) are already provided by a quarter of local banks, while ATM and internet banking are expanding rapidly especially in major cities (Raihan, 2001).

Apart from North and South Africa the Sub Saharan Africa is the region that is seriously lagging behind in Internet banking, although it is giving to the rest of the world the good example of microfinance developments. The latest available estimates of African E-Commerce were published in the E-Commerce and Development Report 2002. Those figures, which correspond to market research forecasts published in 2001, are $4 million of online retail in 2002, growing to $70.6 million in 2003 (Forrester Research 2001).

Conclusion and Recommendations

Web based banking service or E-Banking, the latest generation of electronic banking transactions, has opened up new window of opportunity to the existing banks and financial institutions. It permits business process re-engineering, serving borderless market, to achieve zero latency leading to improvements in customer service levels and better risk management because of real-time settlement. Since its evolution in 90 th decade, it is having unprecedented growth. The growth rate is higher in Developed Countries, and comparatively lower in LDCs countries.

The E-Banking sector is highly prohibitive for the new entrants although the inception cost is lower with high growth rate. The brand preference of the customer, existing network, physical existence, security and safety, supplier bargaining power, substitute product of non-banking sectors have made the way thorny. However, new comer with innovative idea and strategy definitely can make position in this sector. The analysis of the evolution and present status of E-Banking make us some room to make commandments for the government, new entrants and existing e-banks for effective utilization of the opportunity to accelerate the economic growth.

- Internet penetration is a major factor for the growth of E-Banking. A research by OECD indicated that there is a strong positive correlation between Internet usage and E-Banking usage. The trend is usually logarithmic and the take off phase of Internet banking needs at least 30% Internet usage among the population (Christiansen, 2001). However, Internet penetration alone does not guarantee online banking penetration. In this situation, like Mexico, companies can give incentives, subsidizing the surfing cost, free training, multiple access facility (web, telephone, ATM etc.), motivation programs to the user and the population as a whole.
- Standard or Common and Mature technology is always a problem in this Hi-Tech age. In Finland, for example, there are multiple technological standards for some E-Banking services that complicate fast spreading of these innovations (Kerem et al., 2002). Setting up electronic banking requires substantial investments and it is very complicated to move from old technologies to new ones. Thus banks can cooperate closely in the field of developing standards to offer services to third parties.
- E-Banks must take aggressive marketing effort. It has been seen that the marketing efforts made to promote Estonian Internet banking have been continuous and aggressive in different media channels and in bank branches. Avlonitis et al (2000, p 37) have made a comprehensive research showing that innovative products, which have been promoted extensively, have a higher chance of success in the market than similar products without the communications support.
- All of the efforts to establish an 'internet only' model E-Banking of business has not been succeed yet. Thus there must be a physical existence of the bank and E-Banking could be an extent to that operation. It will give the customers an impression of security and safety. Besides analysis showed that the senior citizens all over the world like to account with brick and mortar banks. Avoiding them, the e-banks would loose a large portion of their customers.

- Using *State-of -Art* technology enables the organizations to avoid problems of legacy systems and any inefficiency. For example, rapid adoption of new technologies has helped the Estonian banks to leapfrog some of the traps that have slowed down the process of development in countries with better starting position.
- E-Banks must try to expand their network as soon as possible. Because most of the cases customers uses E-Banking facility to pay bills, shopping etc. As more and more third party will involve in the network, they could attack more customers.
- Governments' main role is enhancing the enabling environment, as it is known that the direct intervention into financial markets may have poor results. In general, the Estonian government has taken a laissez faire approach to the regulation and supervision of the economic policy (Kalkun, Kalvet, 2002). Governments' own usage of ICT has generated positive publicity, which has fostered positive attitudes nationwide.
- Last but not least, the e-banks must try to achieve critical mass. Achieving critical mass is key success factor in electronic banking development. This can be achieved when there is substantial Internet penetration and banks are able to provide services, which have very broad demand. In this case, the satisfied users will serve as endorsers and marketers of the service. The power of person-to-person communication and word of mouth can never be underestimated.❐

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