Chapter 2

REVIEW OF LITERATURE

Research on electronic banking of recent (Walker, 2005; Lee, 2007; Singh and Malhotra, 2004; Al-mudimigh, 2007; Net4India, 2001; Seroor, 2005; Barako and Gatere, 2008; Mahmood, 2009; Siam, 2006; Singh, 2008; Nyangosi et al., 2009) has taken a centre stage with the aim of informing the understanding of the impact and the infusion of technology into services counters, attitudes and behavioral response of customers required to make use of them. This chapter deals with review of empirical studies related to perceptions towards e-banking. This review has been undertaken to observe the areas of e-banking which has been explored and which need further investigation in order to formulate objectives and undertake productive research. The review also has been undertaken to unveil the problem areas related to perceptions towards e-banking as well as to study current status and challenges facing e-banking on the emerging economies and developed economies. Besides, studies would provide an insight into the various efforts directed towards better understanding of the complexities of the e-banking channels.

It has been noted from the review of these studies that e-banking research is still in the early stages all over the world and other authors have started to explore this area though most of the studies are only centered on two channels namely, internet banking and mobile banking. In India and Kenya, only few studies could be found and hence this chapter includes studies from other parts of the world. For the greater insight, the review of literature has covered those studies related to e-banking in general and those studies which are related with individual electronic channel like internet banking, ATM, Credit Cards etc.

Yang (1997) argues that the future of e-banking will be a system where users will be able to interact with other banks worry-free and banks will operate under one common standard.

Aiyer (1998) in his paper, “Down the information By-lane Kenya and electronic commerce.” has provided that the current environment is not conducive for Kenya to benefit from electronic commerce. This is due to commercial integrity and crime in Africa, traditional forms of doing business, poor infrastructure, inordinately high prices
and un-favored prevalent perceptions and policies. The study finds that e-commerce suffers because it is taxed with super normal prices and the parastatal suffers because its service level leaves large unexploited capacity which leads to the optional profitability. Since internet is insecure place to do business, some traditional commercial institutions which deal with highly-critical and valuable information have developed their secure channel of communication which includes SWIFT. It is an important network in the banking sector. The spread of its connectivity leads to development in e-banking.

**Diniz (1998)** in his study, “*Web banking in USA*”, found that most of the websites surveyed were at basic or intermediate level. On the basis of the survey, it was found also that they offer mostly information to customers, transactional channel and it was seen to be the best tool of customer relations management. Despite non-restriction by technology, it is seen that they offer no advanced products.

**England et al. (1998)** a USA based study titled “Banking over the net”, shows that, usage of internet banking is still relatively small factor in banking industry. However, depositors have been predicted in one year time to shift to these banks offering internet banking facility. The study reveals that the customer demands internet banking. This shift of customer paradigm will mark the hallmark in the world of electronic commerce.

**Furst et al. (1998)** a federal USA study titled “*Technological innovation in payment for banks; trends and implications*” shows a significant shift by consumers and business to electronic payment in response to the development in remote banking and e-payments, banks have greatly increased their investment in technology more particularly in retail banking. The study argues that, the gains from the technological advancement in banking and payments are likely to be substantial both from the point of view of individual financial institutions and economy wise in this environment.

**Mantel (2000)** in his study, titled “Why don’t consumers use e-banking products? Towards theory of obstacles, incentives and opportunities,” proposes a framework for describing why consumers use electronic banking products and develops a framework of evaluating consumer electronic usage. The framework suggests that consumers do exhibit rational payment preferences and behaviors. Consumer’s behaviors are consistent with their preferences which vary but may include convenience, incentive, control, privacy,
security and personal involvement. The study finds that financial position and nature of specific transactions also have significant impact on consumers’ decision making pertaining to payment instrument choice. The study suggested that, to the degree of electronic payment carry the broader features similar to those of checks and credit cards; hence consumer will migrate towards e-payments at an increasing rate.

Santha et al. (2000) in the study titled “Electronic banking in Malaysia: A note on evolution of services and consumer reactions,” shows various delivery channels and types of electronic banking products provided by banks in Malaysia and the consumer reaction. It was found that though the country has internet network, banks are more rooted to ATM connections than internet banking. However, the studies shows that over less than half of the respondents, have internet connection at home and hence creates a better base for future personal computer and internet Banking. Human telephone is important in Malaysia since insecurity and regulation is a climbing mountain for bankers and consume.

Owen (2000) in his paper titled, “Internet banking, e-commerce, and the related supervisory challenges” pointed out some of the recent developments in internet and e-commerce, the issues arising from them, and challenges faced by regulators as this new type of business evolves. The study found that none of the member countries in the Caribbean region had legislative provision in place to specifically accommodate e-commerce or internet banking activities. A few jurisdictions were, however, at various stages in the process of examining any necessary adjustment to the legislative arrangements and the drafting of appropriate new e-commerce laws. It was clearly pointed out that as a result of the above reasons, no internet banks had been licensed to operate in any of the member jurisdiction. Six regional banks were identified by the survey to be involved in some form of internet banking activity but using the existing banking laws and regulations in the supervision of those activities. The survey revealed that there were about 37 internet service providers operating in the Caribbean region, with the dominant telecommunications provider, cable and wireless, being represented in almost all of the territories surveyed. It happened that the region had the necessary technological and physical infrastructure in place to accommodate e-commerce business. Member supervision need to develop the necessary in-house expertise in the area, while
sensitizing bank supervision staff at all levels to the related issues. Owen concludes after stating challenges like improper laws and regulations, specifically for e-commerce and internet banking that, it is important as regional supervisors, to understand the issues and risks involved with a view to designing an appropriate regulatory framework to ensure that the stability of the financial system is maintained. At the same time as banks regulators, they should take account of the importance of innovations in financial engineering, when designing our regulatory regime. The supervisors must find their regulatory environment to new technology, and not adapting new technology to old regulating rules. This does not mean abandoning the principles on which financial services regulation has been built. The same principles of consumer’s protection, transparency and disclosure should apply.

Munck et al. (2001) in their study, “E-commerce in the banking sector” observed the effects which open architecture of the internet have upon both established and new forms of financial services networks. The emphasis was on development with regards to horizontal expansion and what we could call diagonal expansion. In this study, the five major institutions in the Netherlands’ banking sector were interviewed using the comprehensive protocol. Four were banks and the other was an intermediary body in the banking sector that is significant in the e-commerce context. The interviewed companies stressed, however, that the internationalization trend is not specifically attributable to e-commerce. Rather, it stems from the general trend for many large business customers to be active in several national markets. From the interview, it was also pointed that development of new markets for intermediaries in the e-commerce environment, motivated in the first instance by the lack of standardization in payment methods used in different parts of Europe and throughout the world. The lacks of standardization coupled with the administrative demands of internationalization made the prospect attractive to banks to outsource as many of these processes as possible to one intermediary. From the study, various advantages and disadvantages were projected when trying to identify various factors that facilitate and impede the adoption of e-commerce process in the banking sector. This includes; extensive existing banking sector experience and capability with its systems, pro-active management and strength of brand image and client trust. On the other hand, the main obstacles were lack of standardization for
particular banking system and human factors. The study concluded that application of e-commerce in the banking sector is progressive and incremental rather than revolutionary – building to varying extents upon existing business and technology trajectories.

Net4India (2001) tried to investigate the benefits of e-banking. The study presents porter’s 5 forces in E-banking. Application of Porter’s model to the banking industry clearly shows that this sector has reached the mature stage of its life cycle. The trend towards e-delivery of products and services is particularly important to the financial industry. The five forces which tend to drive down the profitability of any industry comprise threat of competitors, barriers to entry; bargaining power of suppliers, bargaining power of buyers and threat of substitutes. The study brings the light to the benefits including, reduced cost of e-banking, convenience, variety of services, time saving and execution and conformation of transition instantaneously. Security challenges have been highlighted including transactional, access security and account holders vigilance. It is found further that e-banking in India is at initial stage whereby only 51 banks are offering any kind of internet banking services, out of which 55% were of entry level sites, offering little more than company information and basic marketing materials. There is a prediction that customers who want to use online banking will increase, which could lead to high street banks offering personalized services and better online customer care.

Unnithan and Chandana (2001) found their comparison between Indian and Australian experiences of e-banking adaptation and viability, the cost of transacting business has been reduced overall by creation of dot.com entities and catch-up, fall behind, forge ahead theory to gain an economic perspective. The fact more particularly has motivated both customers and bankers, to adaptations and use of e-banking and migration from conventional banking.

Singh et al. (2002) by applying the revised technology lifecycle to the two discontinuous e-banking innovations (ATMs and Internet banking), established that the life cycle provides a useful outline for successful strategies that can be adopted by banks and other financial institutions as technology revolves.

Furst et al. (2002) analyzed in his study titled, “Internet banking Developments and prospects” and provided that the revolutionary developments in information and
communication technology have had and will continue to have a profound impact on the banking and financial services industry. He provided a comparative study of internet and non-internet banks in USA and found that institutions with internet banking outperformed non-internet banks in profitability. Also, banks in all categories of size offering online banking tended to rely less on interest yielding activities and deposit than non-internet banks did. The study shows that the level of demand for internet banking in the future remains an open question. One interesting aspect of banks perceptions of future demands is that as of quarter 3, 1999, just under half of all national banks (46.2 per cent) had no plans to offer internet banking. Almost all the banks without plans to offer it were in the smallest size category.

**Corrocher (2002)** in the study titled “Does internet banking substitute traditional Banking Evidence from Italy,” tries to investigate the relationship between the internet banking and the traditional banking in order to find if the two financial services delivery systems can be substituted. He then finds after an empirical analysis that Italian banks seem to perceive online banking as a substitute, although there is evidence that banks providing innovative financial services are more inclined to adopt the innovation than traditional banks. The study highlights the vital determinants of electronic banks. This include site of the firm, cost of transaction, prosperity to innovate, market demand and the statue or corporate governance which are positive and branch intensity and interest margin gross income ration being negative. The study suggests that the main issue for banks is to understand the real value of innovation which is not a substitute but means of increasing flexibility, widening and customizing the range of services provided on the market.

**Bojinov (2002)** in his empirical investigation on “What Bulgarian banks offer via Internet.” finds that all banks are represented on the internet. Websites indicate that banks estimate to potential and competitive advantages of the new medium. 61% of the presented information describes mainly products and services, 45% describes products, services and their prices. Online application is presented by 16% and internet banking by 9% which are offered by three banks. It is further revealed that the new online bank products and services is relevantly delayed, because the legal framework in this area does not exist. The emergence and successful functioning of the private non-banks internet
payment system showed that the status of Bulgarian banks, as financial intermediaries is not guaranteed. Hence, they must change their services to keep their positions in the new economy.

**Bughin (2003)** in his study titled “The diffusion of internet banking in western Europe” models transactional internet banking diffusions for a sample of largest 100 western European banks for the period of 5 years (1997 to 2001). Bughin finds that internet literacy is the major factor underlying online banking penetration to western Europe. The study also discovers that banks’ variable like size, or its overall cost efficiency, helps to explain large part of the differences currently observed in online banking diffusion in western European countries.

**Yibin (2003)** in his study titled “E-banking status, trends, challenges and policy issues,” explored the current situation, major application new challenges of e-banking and policy implications from the perspectives of society, banks and regulatory authority as well as government. The paper finds that e-banking products and services are getting more and more advanced and increasing in variety, volume of share and customers’ base is getting bigger. In India, over 50 banks are offering online banking services where ICICI bank is impressing in its e-services. The study further shows that e-banking is a complementary and should be combined with traditional banking to provide good results; some challenges have been seen including e-security regulatory and local requirements.

**Rajadurai (2003)** in the study, “E-banking and customer satisfaction”, it is evident that the new technology is creating a profitable ground to banking industry and saving of time and money to customers. Consumers are shifting to this as they enjoy all benefits of banking anywhere and anytime. This response, results to high profits, cost reduction and easy to interact with e-customers for the sake of satisfaction and continuity of business.

**Market Intelligence (2003)** the banking survey conducted in Kenya covers all banks and it is evident that 15% of rural area branches closed between 1989-2000 and the main reason being rationalization strategy. This was done without paying any attention to clients. The report recommended that the Government should provide alternative service to customers in places where branches have been closed and they should supply the information showing places which have banking services to concerned authorities.
Special training and knowledge should be given to these customers by the government and also provide alternative services like post banking service.

Madhu (2003) in his study titled “E-banking: An emerging perspective of the regulatory and taxation issues”, tries to charter the evolving sphere of e-banking and the innovations both technological and conceptual, which are sweeping the financial services industry in India. The study has examined the issues and challenges offered by the growth of E-banking with reference to regulations and taxation. In this case, India is among the younger adopters of e-banking and hence no laws have been framed for this case. It was found that it is difficult also to tax transaction made online as it is impossible to know where, when and which transaction are taking place since e-banking has no boundaries. It was evident from the study that, E-banking in India is gradually merging with its international counterparts, while the private sector and foreign banks have been fast in adopting internet technology in client serving. There is a gradual trend for the major public sector and numerous co-operative units to move in the same direction. A mix of policy support and security assurance should propel further e-banking adoption in India.

Mittla (2003) in the study “Factors affecting mobile banking services,” has evaluated the factors affecting the adoption of mobile banking services with the aim of forming a model describing consumer behavior patterns. She tries to find the drivers and inhibitors of using m-banking. The study shows that the typical user is male 25-34 years and, married, has secondary level education and average income. 88% were found not using m-banking but they have affixed-lined internet connection on use. She reveals that in general, over 90% of the population in Finland has internet connection on use. Some of the factors necessary were found to be reduced cost which was most vital followed by faster transaction, authentication, anytime and anywhere and curiosity towards using the services. From the study, it is evident that financial institutions are currently the most active diffusion agent for customer as well as written information from financial institutions is likely to increase the probability of adopting electronic banking innovations such as mobile banking services.

Lustsik (2003) in his study titled “E-banking in Estonia” has examined the reasons and benefits of rapid growth of e-banking in Estonia. The study finds that e-
banking and innovative banking technologies have rapidly been introduced in recent by Estonian banks. Number of new e-banking services has been introduced. Lustsik argues that Estonia has achieved a significant success in the implementation of electronic banking, and reasons being price concessions, sales of bank service packages as well as offering non-banking additional services. The study shows that Estonia is on the top of the emerging markets in this area and even overtaken the achievements of some developed countries.

**Basel (2003)** in the study titled *“Management and supervision of cross-border electronic banking activities”* tries to express supervision expectation and incidence as to banks carrying out electronic banking activities as well as their home and host supervisors. The study contains refinements to the risk management principles concerns, responsibility of banks to conduct appropriate due diligence and risk assessment, provide adequate disclosures and establish an adequate ongoing risk management. Oversight process prior to engaging for cross-border e-banking, home country banking supervisor should be satisfied that their banks have due diligent risk management and disclosure policies and practices which are adequate for the intended cross-border e-banking activities. They further suggest that, the local supervisor should consider the facts and circumstances of the cross-border e-banking activity with local residents and the effectiveness of home country supervisor, before making determinants on as to whether they need to take action in the role of local supervisor and the nature of such actions.

**Aggarwal (2003)** in his study *“E-banking for comprehensive e-democracy: an Indian discernment,”* has explored the avenues where banking can play important role in e-democracy. He finds that with the development of synchronous technologies and secured electronic transaction technologies, more banks and departments are using internet for transactional and information medium. Users of e-banking can perform common banking tasks. Hence, e-banking is poised to become most promising part in e-governance process. The study shows clearly that the initiatives such as ‘e-seva’ (Online Bill Payment System in Andhra Pradesh) and ‘FSC’ (Farmers Service Center) are the milestone towards achieving comprehensive e-governance.

**Soleriou et al. (2003)** in their study *“Delivering e-banking service: an emerging internet business model and a case study”,* reviewed some of the changes of the world of
financial services and developed and presented on internet business model that process on e-banking and which can provide the foundations for successful e-banking strategies. The study examined both supply and demand forces that shape the drive for internet based financial services, paying particular attention to Italy. The author found that the basic premise of emerging e-banking model presented in the study is that a successful implementation of any e-banking system can only be guaranteed by an orchestrated integration of all the dimensions. The way managers handle information, navigation; support and financial intermediation affect perceptions of trust, which in turn is a primary driver for customer loyalty in e-banking services. The author argues that, although some skepticism still exists regarding the future of e-banking, most recent studies reveal a growth of both internet usage and e-banking adoption. This growth, even though not as explosive as some might have expected at the term of the millennium, is there and so is the potential of e-banking. The study concludes that it is now clear and well accepted that e-banking can indeed lower operating costs and pass these savings unto consumers. A number of other advantages including faster service, mass customization through product bundling etc, have been reported in the literature.

Cracknell (2004) in the study “Electronic banking for the poor-panacea, potential and pitfalls”, argues that e-banking promises to extend low-cost virtual bank accounts to a large number of currently un-banked individual world-wide. Further, in the study it is stressed that change is being driven by falling cost of technology, competition and by ability of electronic banking solution to offer customer an enhanced range of services at a very low cost. This study examines the types of e-banking technology which are open to micro finance institutions and how various e-products might be attractive to the poor customers in terms of improved accessibility, affordability and case of use. From the financial institutions point of view, the functionality of e-cards, pricing of e-solutions, the segmentation of different products for different clients groups and possible partnership all need to be considered. Cracknell, has also focused on the environment which can support e-solutions in financial and retail sectors. He argues that the extent of financial literacy, policy and regulatory environment should support the development of e-solutions. The author quotes examples of South Africa which is favorable for electronic banking. There are well-developed banking and retail sectors, a supportive central bank,
good communication and a generally positive policy environment. The environment for electronic banking is influenced by the evolution of the financial and retail sectors, by level of financial literacy and by the supportive regulatory and policy environment. This study finally suggests principles for donor involvement in this sector and this include the following:

- Donor subsidies should focus on building shared infrastructure and consider scalability, rather than subsidizing individual pilots.
- The recipient should be able to cover the current costs of the e-banking initiative.
- A careful cost-benefit analysis should be conducted before an e-banking initiative is launched.
- Donors should document the lessons learned from the successes and failure of existing and previous initiatives.
- Donors should help the government understand and develop appropriate policy environments in which e-banking initiative can flourish.
- Donors can invest in promoting e-literacy. The un-banked will need to see the new system as safe and convenient mechanism. Due to higher levels of illiteracy among the un-banked, innovative mechanisms for disseminating information will have to be developed.

Kolodinsky et al. (2004) applied the theories of technology acceptance and the diffusion of innovations to the adoption of three e-banking technologies: Automatic Bill payment, phone banking and PC banking. Empirically, they examined whether and how the characteristic that describes the adoption of the new innovations were related to consumer adoption of e-banking technologies. Using a Federal Reserve Board commissioned dataset, it was found that relative advantage, complexity, simplicity, compatibility, absorbability and risk associated with adoption were mostly affecting e-banking adoption. The study further highlighted that, personal income, personal assets, education, age, gender and marital status also affected adoption. It was absorbed that, adoption changed overtime, but the impacts of other factors on adoption did not change. In the study, it is mentioned clearly that some e-banking technologies were mature in USA while others were truly new, for example, ATM had been in use for 30 years while PC banking had not yet become mainstream. In USA, it was found that approximately 91
percent of 100 household have a bank account, of these, 93% have one or more EFT features associated with their accounts. In 2003, the number of ATM transactions stood at 902 million per month, up slightly from 2002. In addition, by 2003, the number of point of sale debit transaction stood at 495 million per month, up 21% up from 2002. On the other hand, reports indicated that consumers were less than receptive to using e-signature technology and 90% of household were not using PC banking.

This study provides the banking industry with some insights into factors that will likely affect consumer acceptance of e-banking technology and highlights areas of special consideration in the adoption of these new technologies. Relative advantage and compatibility jump to the top of the list of characteristic of e-banking technologies to highlight for consumers. The authors concluded that, both the financial services market place and the available technologies are evolving quickly and although it appears that a broad range of consumers are adopting these technologies, and that arising tide does lift all boats. Monitoring these changes and their implications for consumers will be an ongoing challenge.

Anguelov et al. (2004) in the study, “US consumer and electronic banking 1995-2003” examined changes in consumer use of e-banking technologies between 1995 and 2003, a period of substantial change and growth in the electronic financial services market place, and shifts in perceptions in recent years. By combining data from two nation-wide surveys, the Board’s survey of finances and the University of Michigan survey research center’s survey of consumers. This was conducted to look at consumer use of e-banking technologies, particularly the relationship between consumer demographic characteristics, perceptions and characteristic of selected e-banking products and services.

Anguelov found that there was a consistent increase over the past eight years in the proportion of consumers using a variety of electronic banking technologies, from such long-available products and services as ATM cards and direct deposit to such new technologies as debit cards and computer banking. It was further argued that, the use of some products, particularly debit cards, has become more democratized over time, but it is still the case that most e-banking products tend to be used by higher income, higher asset, younger, and better educated house holds. In light of the growth in the proportion
of consumers using e-business technologies, it was seen not to be surprising that the annual volume of electronic payments was expected to exceed the volume of checks for the first time in 2003. However, not all banking services may be adaptable to electronic delivery. For variety of reasons, some related to the product and for some will probably remain more traditional it was argued in the study. The authors concluded that e-banking technologies are continuing to evolve, and many new products and services are on the horizon. The department of treasury, for example, is moving towards an all-electronic treasury and has several programs in place or in planning stages.

The study concluded that, e-banking technologies hold the promise of helping families manage their money pay their bills on time, and avoid overextending themselves with credit. To take a full advantage of these technologies, consumers need to be aware of the evolving array of e-banking technologies available to them and to understand how efficient technologies fit with their financial management needs. Financial planners and consumer educators, working with both families and financial institutions, can help this promise become reality.

Singh and Malhotra (2004) shows in the study titled “Adoption of internet Banking: An empirical investigation of Indian banking sector”, that on the basis of the study conducted, in the Q 1 of 2004, 17% of scheduled commercial banks offered internet banking. Further, foreign and private net banks offered a broad range of services over the net where public sector banks lay behind with 48% banks offering online banking. The study shows from the point of profitability that online banks in foreign sector are more profitable than non-internet banks. However, online banks in the private sector are significantly less profitable than non internet banks some case to public sector hence it is evident that online-banking is not a vital determinant in explanation. The authors found that there was a lot of scope for banking institutions to expand their online banking services to have more sophisticated customers.

Sundar and Padmanapar (2004) in the study titled “The IT revolution in the banking sector”, shows that technological innovations is fast changing the scenario in the industry while private banks have taken a stake in the battle ground and technology due to fast moving to adoption. Public sector banks are slow towards this; however, RBI is doing its best to join all banks through its system and Real Time Gross Settlement
Chapter 2

(R.T.G.S.)

**Perumal and Bala (2004)** the study titled “Internet banking a boon or a bane,” examines the advantages and disadvantages on banking through the net. Internet banking is viewed as another powerful tool for improving customer satisfaction and increasing cross-selling opportunities. But bank must keep in mind that every electronic channel has its shortfalls which can have major consequences. Keeping track of the ever changing banking industry and the latest update in internet technology, banks need to equip themselves for competitions. Even though there are opportunities ahead, banks should not forget bricks and mortar banks since they cannot accomplish by electronic impulses the numerous aspect of banking.

**Radha et al. (2004)** in their study titled “Preventing technology based bank frauds.” showed that, though banks are rushing towards the technology with a view to have a large stake in the new banking arena, opportunities are arising to thieves supported by the new technology since it has spread and affected all areas. The study discusses some electronic frauds and their prevention and it is clear that though it is impossible to prevent 100%, there is a need for an authority which authorizes by electronic service to specify norms, standards and business practices for conducting business online. Also, other organizations can be set up for different functionalities like, certifying authority, security and incident responses, information sharing, consultancy and training etc, which keep banks in their outgoing efforts to adopt the technology and live with technology.

**Beethika (2004)** in the study titled “Consumer adoption of online banking: Does distance matter”, tested and found that, the distance to the closest bank does not affect the likelihood of online banking use by a household, the financial account that a household has with its financial institutions, however, is a significant predictor of online banking use, implying that household are likely to use online provision more for same account than others. The result suggested that, online channel may be perceived as supplemented to other more traditional channels.

**Jones (2004)** in the study titled “Jamaica and e-banking,” tries to explore the evolution of e-banking and its effect to the economy. He finds that Jamaica is on the road to ultimate digital revolution as banks across the country are introducing new products. Jamaican banks almost all of them have introduced stored visa/master card which are
contributing to the progress of e-world. Jones argues that the innovation in e-banking is the adoption of internet banking, which has an important implication for monetary policy. After the study has considered all the possibilities, the most likely scenario appears to be that e-banking will give the economy a repeated mild stimulus while gradually weakening the effectiveness of monetary policy. On the other hand, it remains to be seen whether sound, safe and profitable private e-money providers can thrive outside the imagination of economist.

Al-Sabbagh (2004) in their study titled “Adoption and use of Internet banking in the Sultanate of Oman, an exploratory study” has explored the factors that affect Oman consumers adoption and use of internet banking. After collecting data, through a survey administered in Oman during September to November 2003, by distributing questionnaires containing 25 questions, 500 bank customers were approached and 225 usable responses were collected. The result shows that in Oman only two banks were offering internet banking services to customers and out of 175 internet users data set, 85 (49%) are banking with this two big banks offering internet banking services, however, only 25 respondents are using internet banking. The study indicates that the main drivers of adoption appear to be compatibility, usefulness and easy to use. The extent of use is affected by lack of government support, poor quality of connection and page loading speed. Trust and face-to-face personal banking preference have been found as major inhibitors of internet banking adoption.

Lymeropoulos et al. (2004) I their study “Branch employees perception towards implication of e-banking in Greece” based on the 14 potential implications of e-banking adoption identified in the literature review, using this implications in the construction of a theoretical framework, to investigate branch employees attitudes towards e-banking adoption and whether their attitudes vary in relation to respondents personal characteristic and those of their employees. At first level, analysis of branch employees perceptions that there is general acceptance of the effects that have been recognized through the literature. Data factor analysis resulted in the identification of four distinct factors, namely, bank’s “hard advantages”, “market effects”, “risk and banks”, soft advantages” factors. At further level analysis, it become evident that branch employees’ perception of the relative importance was a function in their work experience,
their position in branch hierarchy, and educational qualification as well as their employer’s size and type of ownership. The authors argued that, in order to facilitate the promotion of e-banking services use, bank managers responsible for strategic marketing should make a systematic effort in exploiting internal marketing practices such as continuous education and flow of information management. Specifically, perceptions of their branch employers could be made by communicating the benefits of e-banking and helping them perceive this view distribution channel as an opportunity rather than a threat. The study suggests that human resource managers when recruiting, or branch managers when selecting branch employees for positions which require, maximum personal contact with customer, such as accounts officer, should target employees with right profiles. Also, if the banks consider the internet as a major channel in their distribution strategy, they should try to exploit all potential ways to promote its use through an effective communication mix. This could go beyond the branch and include advertising and publicity addressed directly to customers in order to boost demand for e-banking services. The paper concludes that online banking acceptance by the public could be facilitated by banks efforts to introduce new processes that would directly exploit electronic medium, e.g. by offering the opportunity to Greece clients to apply for the use of e-banking services via the internet or telephone.

Cunningham et al. (2005) investigated in their study “Perceived risk and e-banking services: An analysis from the perspective of the customer”, the promise that purchasing e-banking services is perceived to be riskier than purchasing traditional banking services. Thus, exploratory study examined the dynamics of perceived, risk throughout the various stages of the consumer buying process. A survey of 159 respondents reveals a risk premises for e-banking services that follows a systematic pattern throughout the consumer buying process. When viewed as dynamic process, perceived risk for e-banking services shows more radical changes in risk levels than traditional banking services. The analyses indicates that financial risk drives the risk premium while psychological, physical and time risk play ancillary roles as risk drivers at certain stages of the consumer buying process. Major implication of Cunningham et al’s study is that these risk premiums for e-banking services and the risk premium permeates all stages of the consumer buying process.
Bondugula and Matti (2005) in the study titled “SWIFT: can this elephant dance,” analysed the offering of various players who are competing with SWIFT (Society for World Wide Inter-Bank Financial Telecommunications). The SWIFT aims to provide low cost competitive financial processing and communication service while maintaining high level of quality, integrity, reliability and security. The study shows that swift faces strong competition from numerous vendors as it provides messaging services to multiple segments of financial services. However, SWIFT has stepped ahead with strategies which will enable it to cope with this competition and still lead the market.

Zheng and Zhong (2005) examined the trend in the internet revolutions that have set the Chinese banking sector in motion and the Factors which have influenced the adoption of IB in china. It was revealed that internet availability, awareness, attitude towards change, computer and internet access, cost, trust in ones bank, security concerns, ease of use and convenience were the major factors affecting the adoption.

Brown and Mola (2005) in their study, “Determinants of internet and cell phone banking use in South Africa,” have explored the factors that affect internet and Cell Phone banking adoption in South Africa and compared the difference in the perception of internet banking and cell phone banking. Findings indicate that both the adoption intent and the perception of internet users differ markedly from cell phone banking users. The perception of internet banking is more positive amongst internet users, than of cell phone banking which explains the lower level of cell phone banking adoption. The result points out the need for providers of cell phone banking to consider closely the social concept of the innovation and subsequent banking need of the typical user. However, cell phone banking holds the promise for the future.

Awamleh and Fernandes (2005) in their study, titled “Internet banking. An empirical investigation into the extent of adoption by banks and determinants of customer satisfaction in the United Arab Emirates,” has investigated websites of banks in the United Arab Emirates and evaluated factors that are significant in determining the satisfaction of customers using internet banking. The study finds that internet banking is in infant stage in UAE though the banking sector is a regional leader. They suggest that Internet banking is yet to be properly utilized as a real added value tool to improve customer relationship and to attain cost advantages. They found that UAE has an internet
banking potentiality as internet penetration rate is very high with 33% compared to 6.1%. According to internet world status 2004, 1.1 million out of a population of 3.4 million are regular internet users. This shows a great potentiality to internet banking. However, only 21% of internet users have adopted internet banking. This study identifies factors important for Internet banking customer satisfaction, which includes security and convenience. This formed a base while infrastructure, design and interface of internet banking developments will encourage the customer.

Vijayan et al. (2005) examined the consumer’s intention to adopt themselves to multimedia banking based on three commonly used theories known as Technology Acceptance Theories (TAT). The study finds that multimedia banking channels and traditional banking channel are not perfect substitutes, certain banking transactions such as checking an account balance, transferring funds, paying bills and applying for credit cards does not actually require personal contact or a large physical space and hence well suited for delivery over the internet. On the other hand, setting up, applying for business loan, retirement planning, closing mortgage, and other complex transactions often require a person-to-person communication and existence of the bank physically. Vijayan highlights that even though customers are beginning to accept multi-media banking, it may not be easy to achieve their goals as they are so much accustomed to the traditional way of conducting banking transactions. The author also points out that designing a comprehensive and activated technology, multimedia banking framework is also a vital aspect for banks to consider due to the elements of competitions. The study concludes that it is vital for banks to maintain both types of banking system because as mentioned earlier it is not possible to conduct transactions entirely on electronic mode.

Gupta (2005) identified and discussed the migration path for the multi-channel services from the existing architecture to service based architecture. In his opinion, Gupta argued that the progress is restricted due to the rapid changing mobile technology and protocol, enhancement in capabilities of the mobile device, non-use friendly user interface or limited flexibility in user interface and little reuse of existing investment made by banks for internet banking capabilities. The author also emphasize that, banks need to revisit their multi channel a different presentation layer than that of the internet banking or branch banking but sharing same information and transaction functions. When
trying to highlight the various challenges facing mobile banking solution, he includes interoperability which means lack of common technology standard, security, scalability and reliability, application distribution and personalization, to be the major challenges. In this study, the author concludes that service oriented architecture can help banks to offer true multi-channel banking.

Sulaiman et al. (2005) provided an overview of e-banking adoption in Malaysia in their study, “Prospects and challenges of e-banking in Malaysia”, by analyzing the local banks websites using a model introduced by Chung and Payter. The study examines different types of e-banking products used by adopters before finally describing the characteristic of e-banking adopters using 550 questionnaire responses. The result of the study finds that, most of the Malaysian banks offering e-banking facilities had high overall scores, indicating that their websites were of high quality at all three functional and interactivity levels. All the ten anchor banks in Malaysia scored full marks on the information components. Further, the study showed that 53.9% of the respondents used e-banking. 292 of the 542 respondents went online to conduct banking transactions compared to 250 who went to bank counters or ATM machines to bank the conventional way. Out of 53% who used e-banking, 85% used the saving account facility and 55.8% use the current account facility. The next most popular items were bill payment (37%), followed by visa/master cards with 35.3% and third party fund transfer 30.8%. Among the e-banking products and services, account balance inquiry was rated most useful by e-banking adaptors. Authors have illustrated that e-banking adopters carry out their e-banking transactions either from their homes or offices and that most users have used e-banking for between six months to 2 years. It was also found that nearly 37% of the adopters used e-banking only when necessary and 53% of them were influenced to adopt e-banking by friends/colleagues/peers. This study also discovered that age, income and positions held influenced e-banking adoption. There are higher levels of adoption among younger persons, persons with higher income and those holding higher positions. The authors argue that despite high percentage of e-banking adopters in this study not everyone in Malaysia is ready and willing to do every banking transaction electronically. Customers may value the assurance of personal contact with lesser time, and location related conveniences. The study has illustrated that many e-banking adopters use the
basic banking facilities such as balance inquiries, saving and current account facilities and view summaries of report transactions. Only a small percentage uses other facilities such as personal investment, loan and housing mortgage related services. This is perhaps because the respondents feel that these require more measured decision making and the reassurance of face to face interaction. It can be concluded that when advice and measured decision making is involved, e-banking should give way to more traditional banking means.

Rao et al (2005) in their study entitled “A framework for evaluating e-business models and productivity analysis for banking sector in India”, tried to draw together some of the e-business models and real-life experiments that has been circling around the e-business models. To study the sweeping changes brought about by e-initiative measures in the banking sector, some banks were chosen, from public sector like State Bank of India, Bank of Baroda etc. and from private sector like ICICI, HDFC. The study analyses a comparison of various models using metric method. The different elements of the metric include revenue generation, value proposition, infrastructure etc. A mathematical model taking into consideration various ranking and weightings to the elements of the metric has been developed to analyze whether investment in e-initiative increases productivity and profitability in the Indian banking industry.

Saroor (2005) in the study, “Implementation of a secure internet/mobile banking system in Iran” discussed the security of today’s electronic banking system in Iran. The author focused on internet and mobile and presented an overview and evaluation of the techniques that are used in current Iranian systems. This survey was based on publicly available information. It was focused on the user side of the systems, and the interaction between the user and the bank. The security of the e-banking systems of 7 Iranian banks and around 30 world wide banks was investigated. This seven member subset seems to be representative with respect to the security offered by all current Iranian online banking systems. In trying to highlight the general security requirement applied to e-banking systems, the author identified the following:

- Confidentiality which ensures that only authorized entities have access to the content of the exchanged information.
• Entity authentication: Users should be sure that they are communicating with the real bank before sending sensitive information to it. Banks should know the identity of a user before processing its transaction.

• Data authentication: This means data origin authentication and data integrity which allows one to detect manipulation and replay of data, by unauthorized parties’ substitution. For example, the users and the banks want to be sure that data or information they receive is genuine and fresh not replayed.

• Non-repudiation prevents an entity from denying previous commitments or action e.g. a bank should be able to prove to a third party that a user performed a certain transaction, in case that the user denies having performed it. In this study, the author stressed that a proper balance should, therefore, be made between the investment in security measures and the potential costs that a bank might have to cope with, due to remaining risks without these measures.

From a security point of view, public key cryptography is the best solution and the only one providing non-repudiation. However, the client’s private key is in practice of stored in software and only protected by e-password. Smart cards constitute a solution that still seems to be too expensive or complicated for Iranian. The author argues that the best practice in Iran, i.e. with proper balance between security and cost, therefore, it is probably the use of other hardware tokens, such as Digi-pass, that generates responses to unpredictable challenges of the bank and that are able to calculate message authentication code or tokens such as a smart card that is already used in other applications are in, for example, an electronic purse. Lastly, the authors conclude that security is all about risks and associated costs in a typical Iranian electronic banking system, the cost of security measures at the client side is reduced as much as possible, which keeping a minimal level of protection.

Mburu et al. (2006) in the study “Perception of smart card on e-tailing in Botswana” addressed customer perception of small cards. The banks point of view is sought to identify the banks expectation and perceptions of smart card usage and to investigate, if they are satisfied by the rate at which customers are adopting smart cards. In order to achieve the objectives, various properties like, speed, swapping points, efficiency and security were looked at to provide insight on how they could improve the
services. Again to awareness and usage was investigated to determine the necessity of educating the customers. The discussion was presented by using the service Quality Gap model developed by Parasuraman et al. (1985). Casually, it was observed that in Botswana the adaptation of the new technology in the banking sector has not been fully absorbed by the customers as many of them are still in view that the use of smart cards is with suspicion. The authors argue that though money technology has evolved and methods of payment have charged, the customers still prefer cash as a method of payment. The study pointed out that bank’s perception of the customer is that, customers have proper information about usage of smart cards both in local and international market, but the result showed that customer don’t use smart cards in both local and foreign market mostly because of lack of proper information of what the smart cards can do for them. This study suggest the underlying problems of e-commerce and internet in different continents (Europe and Africa) and simply that the resulting research in one continent especially from the developed countries cannot be superimposed to be generalized to the African continent conditions. In this study, the smart cards trend does not seem to carry much weight in the bank’s perception. This is demonstrated by their advertisements which usually display smart cards being safer than using cash. The authors conclude by suggesting that there is a need for proper public education on e-tailing by all the stakeholders. This would enable development of e-commerce not only on consumption but also on trade. The result clearly shows the difference between the customers and banker’s perception of service quality. To close this gap the bank need to address the basic gaps in the service Quality Gap model, in order to satisfy the customers when using e-tailing and to try building long term relationship with them.

Goi (2006) examined various factors that influence the development of e-banking in Malaysia. The author found that, the development of e-banking is mainly caused by new marketing strategies especially to create e-customer relationship management and enforce banking activities. The other factors responsible were found to be the development of technology applications and tools as well as support by the Government. The author argues that, Banks began to look at e-banking as a means to replace some of their traditional branch functions for two reasons. Firstly, branches were very expensive to set up and maintain due to the large overhead associated with them. Second, e-banking
products/services like ATM and electronic funds transfer were a source of differentiation for banks that utilized them. Further, the study reveals that the transformation from traditional brick and mortar banking to e-banking has been momentous. Since the advent of ATM, the retail banking industry has witnessed such significant and extensive change. Formally e-banking comprises various formats or technologies, including phone banking, direct bill payment, P.C. banking and Internet banking. This study arguably reveals that banking platforms need to cope with continuously changing business environments and continuous flood of new requirements while staying sufficiently agile. Two critical factors face the financial services industry as it enters the third Millennium. First consumers continue to demand individualized goods and services and to demand them faster than ever. Second, the world is undergoing a knowledge revolution whose consequences will dwarf even those of the industrial revolution. These two trends converge in the new digital media that will allow everyone to interact and transact with their banks from virtually anywhere. Further the author emphasized that in order for e-banking to continue to grow, the security and the privacy aspects need to be improved. With the security and privacy issues resolved, the future of e-banking can be very prosperous. The study concludes that, with rapid growth of Information and Communication Technology (ICT), especially in internet based services, with supports from the government. There has been increased interest in e-banking service and finally the future is not in ICT or Technology that only facilitates transaction but in relationship technology.

The study of Ahmad (2006) entitled “policies and regulations for expanding e-banking to the poor”, tried to point out the factors that are affecting the adoption in the developing countries. The author grouped them in three layers as infrastructural layer which includes telecommunication and power. Two service layers which include service structure, business models, systems and standards related to economics etc. The third is application layer which pertains to systems components, software and items that are used by the various service channels to comfort business activities. The study argues that a better infrastructure layer can ensure advance digital services and access to local, regional and global resources in a cost effective manner. The author suggests that the setting up and expansion of a high quality infrastructure can be achieved by a dynamic corporation
between the public and private sector. An appropriate policy and regulatory environment is of immense importance for introducing and expanding electronic channels such as e-banking. The study also traces evolution of e-banking in Pakistan and found that Pakistan is among late entrants into e-banking. It is found that currently, there are networks of more than 1000 ATMs all over Pakistan and the banking system is taking advantage of the global network of service providers and has obtained connectivity to SWIFT. The study concludes that, for the poor to benefit from ICT, there is a need for public private partnership vis-à-vis policy intervention and investment that embraces infrastructure, service, application, technology and human resource. The other important aspect is about bringing the disadvantaged population into the realm of mainstream economic development by extending the infrastructural and social service facilities to rural and remote areas. The paper suggests that policies that can have a great impact in facilitating e-banking and e-commerce services, to the poor should be directed towards, attracting private sector. Investment in ICT, facilitate accessibility and cost effectiveness of ICT services and equipment, computer literacy and general awareness, transaction security and consumer protection and conflict of laws. To keep pace with the advancement in technology and to minimize the digital divide, developing countries need to put ICT on their priorities list, follow policies of creating conducive environment for technological innovation and its effective use in all sectors including the financial sector. A number of countries and organizations have already produced better results in making effective use of e-services hence e-business can benefit from their work and experience.

Maumbe (2006) in the study, “Digital financial service delivery to poor communities in South Africa: Preliminary Assessment” describes the emerging pro-poor digital financial services in South Africa and their delivery to poor. The study also tries to highlight key developments in the banking industry in South Africa, which includes new mergers and acquisition, ICT-driven service innovations, implementations of the financial services charter Black Economic Empowerment (BEE) and proliferation of new financial regulations. He also points out how these changes with collectively enhance access to banking services by previously neglected mobility poor who remains unknown. The author argues that the changes will alter the strategic direction of the industry and unleash new opportunities to save disadvantaged communities that have not relieved such
services define. The emerging “information society” offers hope to poor communities to access financial capital required to help alleviate poverty and enable them to participate in the mainstream economy. This study further argues that pro-poor digital financial services help to eliminate social exclusion, entrance accessibility, and uplift living standards for the mobility poor. The switch to digital technologies is expected to improve customer satisfaction and loyalty by adding value to the banking experience. However, it is important to understand clearly, the factors that drive the demand and supply for these digital services/products before consumers can fully reap the benefits brought about by the ICT revolution. To minimize the problem of law up take, digital service provision should articulate the needs of the community and in particular their views about the technology options. In conclusion of the study Maumbe suggests that besides acquainting the poor with the new ways of banking and improving their computer/financial literacy by educational companies, banks need to recognize of inclusive financial services. In this regard, research is needed to identify factors affecting adoption of digital financial services in South Africa, provide insights on diffusion of digital financial services to abroad base of urban and rural-based clients and investigate e-risk management strategies to enhance access and the utility derived from digital financial service delivery to poor communities.

Al-mudimigh (2007) evaluated the success of e-business model and strategy implemented by Citi bank in the UAE in offering its retail internet banking services and found out clearly that e-business strategy is complementing the e-business model used.

Lee (2007) that financial –performance, risk dimensions were the most silent concern for their sample. Trust also had stronger influence on the adaptation behavior of mobile banking than perceived usefulness which was used as an important variable in the conventional technology adoption model (TAM) variables.

Al-Hajri (2008) examined various factors that might act to determine whether a given technology is likely to be adopted by the banking industry in developing country such as Oman, by comparing it with a developed country such as Australia. The result indicated that relative advantage, organizational performance, Customer organizational relationship and ease of use, can shed light on the reasons for adoption of Internet technology.
An exploration done by Singhal and Padhmabhan (2008), revealed that utility request, security, utility transaction, ticket booking and funds transfer were major factors contributing to internet banking adoption.

Tat et al. (2008) examined predictors of intention among users of internet banking to continue using IB services. It was revealed that trust was the strongest predictor followed by compatibility and ease of use.

Barako and Gatere (2008) investigated outsourcing practices of the Kenyan banking sector and by applying Regression analysis method to find out the determinants of outsourcing, concluded that the bank size measured as total assets was statistically associated with outsourcing decisions. Bank performance measured as return on Assets and ratio of Non-performing loans (NPL) was not associated with the outsourcing decisions. Also bank wage bill and total operating expenses were not significant determinants of outsourcing decisions.

Mirza et al. (2009) revealed a significant difference between demographic and attitude of users and non-user groups. The majority of customers were very comfortable and willing to use IB services. Security concerns, lack of technological knowledge and awareness stood out as being obstacles to the adoption of Internet Banking.

Yuttapong et al. (2009) investigated the factors impacting the adoption of internet banking and found that complexity had a negative relationship with intention to adopt the internet banking in Thailand. Further, it was indicated that compatibility had a high positive relationship with intention to adopt Internet Banking.

Al-ghamdi and King (2009) explored how IB affects the relationship between customers’ trust and their loyalty. The study also examined how factors may affecting IB usage can be different in UK and Saudi Arabia. The study considered privacy aspects, communication, customer experience, usefulness, self-efficacy and ease of use as major factors trust and customer loyalty.

Mahmood (2009) analyzed the attitudes towards the use of e-banking and found that the main reasons for using e-banking were convenience, availability and saving of time. He also suggested that, with time online use will increase and security is no longer a main issue not to adopt e-banking, against the opinion of Goi, (2006) who opined that in
order for e-banking to continue growing, the security and privacy aspects need to be improved.

Nyangosi et al. (2009) in his comparative study of India and Kenya, investigated customer’s perspectives and established grounds for e-banking adoption in both countries. The study indicated that customers from India and Kenya who were surveyed have developed positive attitude and they attach more importance to the emergence of e-banking.

When a survey of service quality was conducted by Khan (2009) in India, It was found that customers are satisfied with quality service on the four dimensions Viz. Reliability, accessibility, privacy/ security, responsiveness, and fulfillment, but least satisfied with the user-friendliness dimension.

The result of all these studies appears to be similar though approaches were different due to the use of different statistical tools and techniques. The empirical evidence from the studies conducted from various parts of the world, have yielded to findings on the perception towards e-banking. From the findings of literature review, it was noted that most of the studies were conducted in either developed countries (For example, U.S.A, UK and EU) or fast developing countries. This indicated that additional studies need to be conducted to shed more light on the issue, particularly in developing economies like India and Kenya. Any study was hardly found in Kenya which empirically tests the e-banking perspectives
Some of the areas which need extensive and comprehensive study include: the emergence of e-banking services, Customer relation Management (CRM) in e-banking, impact of e-banking on bank profitability and drivers of e-banking adoption from both banking and customer perspective (Figure 2.1). The present study is one of the first attempts to empirically investigate and compare the perception towards e-banking in India and Kenya.