CHAPTER 1
INTRODUCTION

In the present contemporary world, organizations are looking out for ways that enable their long term business sustainability. Indeed in order to meet the pressure of competition, organizations are attempting to find out ways and means that provide them competitive advantage at market place (Huber et al., 2001). In this regard, focus of the organizations on providing superior customer value has been viewed as one of the most effective source of competitive advantage in the market place (Hamid, 2012). Customer value defined as the utility derived by the customers from the use of the product or services enables organization to differentiate them among the other competitors (Sheth et al., 1991a). Especially in service organizations, where customers are the end users of the organizational offerings, i.e., services, perception of the customers regarding the services has been considered as one of the most effectual aspect in gaining competitive advantage in the market place (Srinivasan et al., 2002). When customers get the desired output from using the services of the organizations, they tend to differentiate such services from the other competitive options available in the market and utilize same service time and again. This, in turn, provides competitive advantage to the organizations and enables service organizations to establish long term relationship with the customers.

Considering this role of customer value in long term organizational sustainability, banks have also started channelizing their strategic moves with the main focus of providing superior value to the customers (IDRBT, 2013). Among such moves, one of the most promising strategic moves is the introduction of technology-led services into the banking operations. The introduction of new and improved technologies into the banking operations are aimed at providing better quality cost-effective output through hassle free mode in order to stimulate customers for utilizing the services of same bank again and again (IDRBT, 2014). That is, to provide maximum utility to the customers against the resources employed by them with a view to differentiate the services with other competitive options in the market place. However, in this regards, Ho and Ko (2008) have stated that nature and scope of customer value as well as technology into
consideration should be examined. Doing so will provide clear insight into the aspects which needs to be focused while attempting to enhance customer value perception by introducing new and improved technologies.

1.1 Conceptual Framework of Customer Value

Although the concept of customer value has been examined for more than a decade, yet the literature has been found to be fallen short in providing universal conceptualization of it. This underlines the need to analyze the concept of customer value before focusing on it (Ivanauskiene et al., 2012). In this context, Khalifa (2004) have stated that customer value is the combination of utilitarian model, value components model and means-end models. As per utilitarian model, perceived value is the valuation of the customers regarding product or service on the basis of benefits and cost (Roig et al., 2006). Focus of utilitarian model on benefits and costs has also led towards the denotation of this model as benefits/costs ratio model (Kumar and Grisafe, 2004). Whereas, in the value components models, perceived value has been defined as the bundle of esteem value (‘want’), exchange value (‘worth’) and utility value (‘need’) (Kaufman, 1998). Furthermore, means-end model follows the assumption that the acquisition of product or service is done with the rationale of meeting favourable ends. In the means-end model, perceived value focuses on the relationship between features of the products, outcome of the consumption and personal values of the customers (Huber et al., 2001). Furthermore, various other researchers, such as, Leszinski and Marn (1997); Monroe (1990); Gale (1994); Woodruff and Gardial (1996); Groth (1994); Horovitz (2000), etc. have also defined customer value. All the perspectives of such kind have indicated that customer value has been considered either as uni-dimensional construct with focus on price and quality (Zeithaml, 1988; Kumar and Grisafe, 2004) or multi-dimensional construct (Holbrook, 1996 and Sheth et al., 1991a), thereby, enabling the researchers to consider the concept based on the product/service into consideration (Sweeney and Soutar, 2001). However, the multi-dimensional approach of customer value has been viewed as more appropriate approach because the said approach focuses on interrelated dimensions of customer value, thereby, providing more comprehensive insight into the phenomenon of value perception of the customers (Sheth et al., 1991a; 1991b).
Recognizing this role, banking sector world-wide including India has also started focusing on multi-dimensional nature of customer value with the aim to maximize total utility derived by the customers from using different technologies offered by the banks for serving their banking needs. In this regards, one of the popular attempts made by Roig et al. (2006) and Roig et al. (2009) has put forth six dimensions of customer value, namely, functional value of the installation of the establishment (bank entity), functional value of the contact personnel in banks, functional value of the service (i.e., service quality), economical value, emotional value, and social value with reference to retail banking. Whereas, Izquierdo et al. (2006) have classified customer value into three categories, namely, functional value, affective value and saving value with reference to retail banking. In the study, functional value has been referred as the utility obtained from the banking services through brand’s warranty, reliability, etc. While, affective value reflected perceived social and emotional benefits gained from frequency contact between customers and banks’ personnel and saving value was created when the customers perceive that the retail banking services are cost effective.

Further, Ivanauskiene et al. (2012) have highlighted customer value as blend to three sub-values, namely, functional, social and emotional value. Functional value has been defined as the tangible outcomes related to price, quality of outcome etc. Whereas, emotional value includes intangible outcomes such as comfort, reliability, satisfaction, positive emotions, etc. Like emotional value, social value also includes non-physical aspects, such as, enhancing social standing of the customers, improving their social image, etc.

These views on customer value dimensions in banks have made it obvious that the value perception of the customers depend on different aspects, such as, quality of output provided by the technologies, price of using the services, etc. Further, these views on value perception have also indicated the need to assess nature of technologies as all the aforementioned value dimensions cannot be held relevant for all kinds of different banking technologies. To illustrate, the value dimension, namely, functional value of the establishment may not be relevant while focusing on the enhancement of the value perception of the customers regarding technologies, such as, mobile banking, internet
banking, etc. instead the functional value of services can be more relevant in case of these
technologies. Thus, it becomes imperative for the banks to analyze nature of banking
technologies before focusing on customer value perceptions. In view of that, the
forthcoming paragraphs discuss status of technological developments with reference to
India where the technological developments are much recent in comparison with
developed nations, such as, Europe, United States, etc.

1.2 Status of Technological Developments offered by Banks in India
Technological developments have been initiated by the banking sector in India in late
1990’s and early 2000 with emphasis on the adoption of core banking solutions (CBS) for
centralization and automation of banking operations. Moving from a manual set up to
technology-oriented set up which allows banks to operate globally, it is hard to envisage
previous scenario when a simple deposit or withdrawal would require a whole day.
Further, an outlook at distinct banking technologies offered by the banks will make the
nature of different banking technologies more lucid.

1.2.1 Automated Teller Machines (ATMs)
Launched in India in 1987 by HSBC, ATM services are appeared to be one of the oldest,
popular and convenient channels of service delivery throughout India. It has been
introduced to facilitate customers in accessing their money anytime without visiting banks
with the help of plastic cards (commonly known as ATM cards), thereby, replacing
hassles involved in withdrawing money by visiting banks personally. Started with the
basic services including cash withdrawal, balance enquiry, etc., use of the ATMs have
been extended to include activities, such as, mini statement, coupon dispensing, money
transfers, ticket booking in railways & airlines, mobile recharges, bill payments, cash
deposit, check deposit etc. (Kumar et al., 2011).

Further, the ATM industry in India is experiencing exponential growth. Since past
five years, the ATM services have witnessed growth rate of 30 per cent (Hota, 2013). Not
only this, ATM terminals are also expected to face 25 per cent compounded average
growth rate between 2011 and 2015 (Hota, 2013). Furthermore in the year 2011, total
number of ATMs (including both onsite and offsite) were 74,505 which is 100.5 per cent
of the total bank branches (RBI, 2013). Whereas, the total number of ATMs (includes both
onsite and offsite) has also been raised to 100042 by July 2012 (RBI, 2013), thereby, depicting the story of fast penetration of ATM services in India. Currently, attempts are also being made by the banks to make ATM services available to rural and remote parts of the nation. Also, banks are attempting to provide multilingual ATMs for enhancing the convenience level of the customers belonging to different regions.

1.2.2 Internet Banking (IB)

The other type of banking technology that has transformed the structure and nature of banking is Internet Banking (IB). It has transformed banks from brick-mortar set up to a click-mortar set up, wherein, the bank accounts can be accessed with one click via internet (Chau and Lai, 2003). It presents customers with the facility to carry out their banking transactions online owing to which it has been adding on to its popularity among the banking customers (Rahim and Li, 2009). Specifically in the present era, where use of the technology has been viewed as a medium that saves time and efforts, the introduction of IB has opened new avenues for the banking customers to operate their bank account and carry out their banking transactions from their laptops, desktops, palmtops, etc. (Elavarasi and Surulivel, 2014).

Introduced in India in 1998 by ICICI bank, IB has emerged as the most effective forms of banking technology which offers many benefits to banks and their customers including cost savings, reaching new segments of the population, enhancing efficiency of the banking operations, enhancement in the banks’ reputation and better customer service & satisfaction (Jayawardhena and Foley, 2000). It also enable banks to operate across the boundaries. Consumers all over the world have relatively easy access to their accounts 24 hours a day, seven days a week. With reference to IB, Mols (1998) has stated that IB has initiated the concept of three A’s, i.e., ‘anywhere’, ‘anytime’ and ‘anyhow banking’, wherein, customers can manage their banking affairs when they want, and at the same time, they can enjoy more privacy while interacting with their banks.

Further, IB is catering to the banking needs of all kinds of banking customers, such as, financial institutions, customers, users, corporate, etc. The catalogue of services offered by IB includes fund transfer, bill payments, loan applications, trade stocks, mutual funds, etc. Not only transactional tasks, IB also offers non-transactional services, such as,
checking account balances, downloading bank statements, ordering check books, etc. (Sikdar and Makkad, 2013). To add more, customers can even view actual images of their cheques or deposit slips submitted by them while visiting banks (Karjaluoto et al., 2002).

A study conducted by Internet and Mobile Association of India (IAMAI) during 2006 has revealed that 23 per cent of the online users prefer IB for carrying out their banking transactions, which makes it second most preferred banking technology after ATM (as ATM is preferred by 53 per cent of the customers). Further, the statistics published by RBI (2014a) has depicted that 44 per cent out of the 800 million online transactions are being made through IB, thereby, indicating enhanced acceptability of IB services among the banking customers for serving their banking needs.

1.2.3 Mobile Banking (MB)

Another technological catalyst for banking sector is Mobile Banking (MB). It has been defined as the provision of availing banking services with the help of mobile devices. The extensive penetration of mobile phones in India over and above internet has laid the foundation of MB. In India, the mobile subscriber base is 811 million while only 200 million people have bank accounts (Tare, 2014). It signifies that 68 per cent of the total population of 1.2 billion people are having mobile phones which provide an attractive opportunity for the banks to utilize MB platform for reaching the unbanked population and providing them anytime and anywhere banking solutions (Jamaluddin, 2013). Launched in 2009 in India, the transactions carried out with the use of mobile mode of banking has witnessed 13 times increase in volume and value terms (Jamaluddin, 2013). According to the reports published by RBI (2014), 3 per cent of the total transactions out of 800 million transactions are being made through MB mode of banking. This depicts that the usage of MB services is still low (IDRBT, 2013) though the key players, such as, banks, mobile network operators and mobile payment service providers are attempting to promote mobile mode of banking as an alternative form of banking mechanism to the banking customers (Karnouskos, 2004; Taga and Karlsson, 2004; Sharma, 2011; Anckar and D’Incau, 2002).
1.2.4 Phone Banking (PB)
Alike MB, banks also offer another facility to the customers to serve their banking needs, i.e., Phone Banking (PB). It operates through an Interactive Voice Response System or telebanking executives hired by the banks for addressing issues of the banking customers. In case of telebanking, customers can access information about their bank accounts through a telephone call and by providing the coded Personal Identification Number to the bank. But this kind of technology is limited to certain purposes, such as, balance enquiry, transaction enquiries, instructions pertaining to stop the payment made through cheques or through fund transfers (which is limited to per transaction limit of ₹ 2500 and on overall capital of ₹ 5000 per day per customer), blocking of debit/credit cards, etc. (Dun and Bradstreet India, 2009).

1.2.5 Credit Cards (CC)
Credit card provides an option to the customers of the banks to utilize money of the bank upto a certain specific limited amount which they have to pay back to the bank within a specific period of time (Mailcontractor, 2013). This way, CC provides a platform that allows post paid service to the banking customers, wherein, the CC card holder can utilize money of the bank which is not actually in their bank account. Instead, it works as a creditor which allows the customer to meet their financial requirements at the time of necessity and the same amount can be returned to the bank within the specific time limit and with some specific amount of interest.

1.2.6 Electronic Clearing Services (ECS)
ECS has been introduced in 1995 in India by the leading authority of banks, i.e., RBI. It has been defined as the technology that allow to make payments which are repetitive and periodic in nature, such as, payment of dividends, interest, salary, pension, electricity bills, etc. (RBI, 2012). Fundamentally, ECS facilitates bulk money transfers from one bank account to many bank accounts and vice versa. It has two variants, i.e., ECS debit and ECS credit, wherein, the former is utilized for raising debts by an entity to a large number of accounts, such as, investors in mutual funds, payment of electricity bills, etc. Whereas, ECS credit is used by an entity for affording credit to a large number of beneficiaries, such as, payment of dividend to shareholders, salary to employees, etc. Further, the reports
have highlighted that amount of ECS based credit has been increased from ₹ 98 million to ₹ 121.5 million from the year 2009-10 to 2011-12 and for the same period, the ECS based debit transactions has also reported an increase from ₹ 149.3 million to 164.7 million (Gupta and Gupta, 2013).

1.2.7 National Electronic Funds Transfer (NEFT)
NEFT refers to an electronic system of funds transfer that has been implemented in 2005 in India. Indeed, it is the outcome of innovation made in electronic fund transfer system (EFT). EFT was operationalised in 1995 and covers 15 branches where RBI managed the clearing houses. Thereafter, a new variant, namely, Special EFT was introduced in 2003 for enlarging the area of coverage of the scheme to facilitate quick transfers of the funds. This special EFT facility was made available to the banks which have computerized operations and are connected through network. Further, innovations have been made to this scheme which has resulted into a new variant named as NEFT with the main focus on the widening of the coverage of the scheme for enhancing smooth transfers of the funds. With the introduction of NEFT, use of special EFT scheme has been limited for the Government payments only.

Further, NEFT has allowed integration of Structured Financial Messaging Solutions of the Indian Financial Network. It facilitates one-to-one fund transfer facility to users, firms, corporates, etc. and no maximum or minimum limit has been set for the amount that can be transferred. However, amount per transaction has been limited to a maximum of ₹ 50,000 for cash-based remittances (RBI, 2015). The success of NEFT scheme can be estimated from the growth statistics which depicts that the volume of NEFT has grown from ₹ 66.3 million in 2009-10 to 226.1 million in 2011-12 (Gupta and Gupta, 2013).

1.2.8 Real Time Gross Settlement System (RTGS)
RTGS refers to a system that facilitates settlement of the transactions at gross basis. Introduced in 2003 by RBI, RTGS ensures that the payments (with minimum limit of ₹ 1,00,000) should be settled with no credit risk (Gupta and Gupta, 2013). Hence, this system is essentially introduced for larger payments. Further, it facilitates inter-bank as
well as customer payments and can be provided by the branches which have CBS facility only.

Besides, RTGS is different from NEFT. It has been introduced primarily for large volume transactions, whereas, NEFT facilitates relatively small volume of transactions. But alike NEFT, the use of RTGS has also witnessed growth. From the year 2009-10 to the year 2011-12, volume of transactions made through RTGS has been reported to increase from ₹ 33.2 million to ₹ 49.3 million (Agarwal and Jain, 2013), thereby, depicting enhanced usage of this system for large volume transactions by the banking customers.

The above mentioned technologies are indicative of the technological initiatives taken by the banks to enhance ease of their customers and to provide them with more accurate and speedy solutions for serving their banking needs with the aim to enhance their value perception. Apart from the technologies mentioned above, there are various other technologies, such as, prepaid debit cards, Kissan credit cards, etc. which are the variants of any of the above mentioned technologies.

The above discussion pertaining to the different latest banking technological developments have made it evident that almost each and every activity in the banks is being carried out with the help of the technology (IDRBT, 2013). Among all these technologies, electronic mode of carrying out banking transactions play major role in the banking operations. Popularly, known as e-banking (Moenaert and Lievens, 2000), it has been defined as the delivery of the services of the banks to the customers with the help of different delivery platforms that can be used with distinct terminal devices, such as, desktop software, telephone, etc. (Turban et al., 1999). It refers to a system which enhances bank’s capacity to provide customer with access to their accounts to carry out their banking activities via electronic communication channels. Such channels include ATMs, Tele-Banking, MB, IB, CC, Debit Card and other services, such as, RTGS, ECS, NEFT, etc. (Jamaluddin, 2013; Keyes, 1999; Pikkarainen et al., 2006 and Daniel, 1999). Among such technologies, ATMs, MB and IB are the technologies which involves direct customer-technology interface. Since direct interface of the technology with the customer is involved, success of such technologies will depend mainly on the customers. Whereas,
the other technologies, such as, ECS, NEFT, etc. require involvement of banks’ personnel as they act as a mediator between customer and technology for meeting banking requirements of the customers. Although this indicates role of banks’ personnel in the success of such technologies, yet customers do cause imperative impact on the success of these technologies as these technologies are meant to provide customers with more fast and effective output. On account of involvement of customers (either directly or indirectly) in the success of different kinds of technologies offered by the banks, it becomes imperative for the banks to analyze the technology adoption behaviour of the customers.

1.3 Technology Adoption Behaviour of Customers

Technology adoption behaviour presents an insight into the technology adoption decision of the customers and various facets related with it. Adoption refers to the act wherein customers accept the technology and decide to use the same willingly for their serving their needs (Saga and Zmud, 1994). An insight into the adoption behaviour will enlighten banks regarding different facets that affect the decision of the customers towards accepting and utilizing the technologies for serving their banking needs. Doing so will also facilitate banks in exploring the facets that affect the value perception of the customers regarding the latest banking technological developments (Ho and Ko, 2008). Thus, it is required to review the behaviour of the customers towards technology adoption.

With this notion into consideration, Ratchford and Barnhart (2011) have stated that customers, being individuals with different values, beliefs and motivation levels, have distinct personal characteristics which may affect their decision relating to technology adoption. Further, the socio-economic characteristics of the customers, such as, age, educational qualification, etc. may also exhibit significant role in shaping their behaviour towards technology adoption (Lassar et al., 2005). Besides customer-specific attributes, characteristics of technology may also affect the decision of the customers to adopt the technology. The decision of the customers to adopt the technology may also depend on the quality of output provided by the technology, level of efforts required to operate the technology, etc. (Davis et al., 1989). Further, presence of supporting conditions may also induce the technology adoption decision of the customers (Venkatesh et al., 2003).
Considering this, the present study has been framed to analyze the dynamics of technology adoption behaviour of the customers comprehensively with the aim to examine its association with customer value perception regarding the technology.

1.4 Organization of the Study
The study has been segregated into eight chapters including the present one. The present Chapter is introductory in nature indicating the conceptual and theoretical background concerning the dynamism of technology adoption in banking sector.

The second Chapter reviews the existing theoretical as well as empirical literature assessing technology adoption phenomenon of the customers and the same has been divided into two sections, wherein, the first section discusses antecedents of technology adoption decision of the customers. While, the second section focuses on piercing the literature for analyzing relationship between technology adoption and customer value.

Further, database and research methodology have been taken in Chapter 3, wherein, the need to conduct the study alongwith the description of research questions and research objectives have been discussed. It also describes universe of the study, sampling methodology, sampling units, techniques of data analysis and limitations of the study. Furthermore, results and discussion have been carried out from Chapter 4 to 7. The Chapter 4 describes the development of Technology Adoption Index (TAI) manifesting personal disposition of the customers towards technology adoption.

The Chapter 5 discusses the development of Integrated Technology Adoption (ITA) model. The ITA model attempts to explore different technology adoption facets that affect customer value perception regarding the latest banking technological developments. Widening the analysis of the dynamics of technology adoption, an attempt has also been made to explore the usage pattern of banking technologies from micro-perspective and the same has been presented in the Chapter 6. Further, the Chapter 7 attempts to explore the determinants of varied level of technology adoption propensity of the customers. Finally, the last Chapter, i.e., Chapter 8 presents summary of findings of the present study. The chapter also presents theoretical as well as policy implications based on the analysis of the results. Adding more, probable future research directions are also being discussed in this chapter.