ROLE OF BANKING TECHNOLOGY IN CUSTOMERS SERVICES

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ABSTRACT

Peter Drucker said that “The purpose of a business is to create customers”. In the present situation, every business house facing the competition, whether it is a public sector or a private one. Nowadays, the customers’ prefer quick and quality services. The vendor or any service providing organization should tune-up their products or services in line with the expectation of customers. To meet the expectations of the customers the information technology along with ‘personal touch’ will be necessary for any organization to retain the existing clients and to attract new ones.

This paper made an attempt to study the technological developments in the banking sector to serve its customers with quality and effective services. The analysis is made on the usage of various electronic products in the banking services. In the recent past there are variety of bank services, viz., ATM services, Debit and Credit cards, online payment system, net banking services, etc. which are possible due to the technological advancement in banking operations. The analysis of the study is made on the basis of data collected from a sample of 229 respondents out of 250 selected from Guntur in the state of Andhra Pradesh, India through a mailed questionnaire.

1. INTRODUCTION

Internet is one of the technologies, which really brought information revolution in the country. Advent and adoption of internet has removed the constraints of time, distance and communication making the globe truly a small cyber village. The consumer oriented applications are mainly: (i) remote banking (ii) home shopping (iii) home entertainment (iv) micro transactions of information. In order to provide quick and spontaneous services, banks introduced ATMs to automate two functions - deposits and cash withdrawals. As the transactions are growing slowly, banks found that ATMs resulted in real cost saving. With the help of this technology, customers can access their bank accounts in order to make cash withdrawals and check their account balances as well as purchasing mobile cell phone prepaid credit. Thus, the
plastic card is replacing cheque, personal attendance of the customer, banking hours restriction, paper based verification, etc. Further, these technological advancements provide information about customers account and operate in on-line with server based system and internet.

In on-line mode, the ATM provides banking facilities from anywhere and anytime. Further, it also helps as an Electronic Fund Transfer terminal capable for handling cash deposits, transfer between accounts, balance enquiries, cash withdrawals and pay bills, Whereas, the conventional system of banking operations is time consuming and expensive because the commercial transactions are carried out through the paper work and physical delivery of payment of cash. The explosive growth of internet and faster broadband width developments revolutionized the technological growth of e-Commerce. The e-Commerce transactions process has been changing dynamically from MICR technology/FAX to Credit card, Electronic Fund Transfer (EFT), Debit card and Automated Teller Machine (ATM). The electronic payment system is becoming an essential to on-line business process innovation, as the companies willing to provide fast services to the customers at low price. In the recent times, the online banking facilities have been growing at a phenomenal rate in India.

Internet Usage:

Table-I presents the data on the internet users in different nations at the global level during the year 2012. It can be seen from the data in table-I that among the various nations, South Korea ranked first followed by Japan and United States of America. Three-fourth of their population is making use of the internet. On the other hand, France, Germany and European Union are moderate users of the Internet with two-thirds of their population using the facility, whereas, about one-fourth of the population of Brazil, Russia and China are making use of the internet facility. It can be said that all other nations are not able to use the internet below the world's average of 25.6 percent. It is surprising to note that India is not able to make use of the internet facility even 10 per cent of its population, though it is claiming there was so much of the technological advancement achieved in the country.

<table>
<thead>
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<th>Table-1</th>
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<td><strong>% of Internet Users in different leading Countries at global level during the year 2012</strong></td>
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Electronic Payment Systems:

Now, it is reviewed various the types of electronic payment systems and discuss what is being transmitted over the network and also analyze the differences of each electronic payment systems in India by taking requirements, characteristics and assess the applicability of each system.

The electronic payment technology emerged in 1970 as Electronic Fund Transfer (EFT) and this system utilizes the computer and telecommunication components both to supply and to transfer money. Function at EFT can be categorized into banking payments, retailing payments, online electronic payments. Further, the banking payments can be classified as large scale or wholesale payments (bank to bank transfer), small scale or retail payments (automated teller machines and cash dispensers), Home banking (bill payment). Credit cards (VISA or Master Card), Debit cards, Charge cards (American Express) comes under the category of retailing payments. Token based payment systems (electronic cash, electronic checks) and credit card based payment systems comes under the category of online electronic payments. Large scale payments between banks and business houses are done through EDI (Electronic Data Interchange). There are number of different payment systems available for the online merchants, which include digital-wallets, e-cash, mobile payment and e-checks. Another form of payment system is allowing a 3rd party to complete the online transaction for another person. The companies, which are providing these services called as Payment Service Providers (PSP), a good example is PayPal or World Pay.

In India there are two major organizations, National Informatics Centre (NIC) and Videsh Sanchar Nigam Limited (VSNL) which established EDI-VAN services making use of the EDI. Whereas, the organizations like National Association of Software Services Companies, NASSCOM, Federation of Indian Export Organizations (FIEO) and All India Management Association developing and promoting various e-Commerce applications.

India has about 90 million user base of Internet, which makes India 5th largest country in the world to make use of this facility as seen in Table-1. The G7 countries have more internet user base of 80% of its population, the broad connective is also quite high, but in India, broadband connective is slow. During the year 2012, only 11 million users in India have broadband connectivity and still penetration of internet is quite good as is seen in graph-1.
The Indian credit card industry has been growing at a 31 per cent compounded annual growth rate (CAGR) during the last decade. In fact, the growth in the past three years has been higher than what the industry saw between 2000 and 2007. The total number of credit cards in India was around 12 million by the end of 2010. Both CITI and ICICI Banks claimed to have card user base of over 2 million during the same period of study. To get more people in the fold of credit card, another strategy is launching more and more co-branded cards. The ICICI bank has six co-branded cards and eight affinity cards. Whereas, the HDFC Bank and SBI have issued two co-branded cards each and Citibank has 29 co-branded and affinity cards. The public sector oil companies, mobile telephone players, retail chains and even airlines are joining hands with banks to float the co-branded cards. The total card spend is only around Rs 12,000 crore per month. On an average, a credit card holder spends between Rs 1,500 and Rs 2,000 on a card in a month.

The banks do not earn interest on the total spending, but it is earned only when a customer rolls over the credit (that is, one chooses to pay only the minimum amount required to carry forward the credit). At best, 25 to 30 per cent of the total credit is rolled over. On the whole, about 0.6 per cent of personal consumption expenditure in India is through credit cards, which means for every Rs. 100 spent on consumption, only Rs. 0.60 is routed through credit cards. This is only 16 per cent when compared to USA.

2. CREDIT CARDS:

Credit cards have been dominating the e-Commerce scenario in developed countries for the last twenty years. In developing countries like India, merchants and banks can increase credit card usage by increasing the distribution of terminals. There are less than one lakh electronic data capture (EDC) terminals used by merchant establishments that accept credit cards. These terminals process payments through credit and debit cards issued by banks or players like VISA. The HDFC Bank had set-up about 27,000 EDC terminals, ICICI Bank about 25,000 and Citibank about 24,000.

When we look at the imported EDC terminal costs, it varies between Rs 18,000 and 25,000, depending on the bulk of the order. The cost has come down from Rs 32,000 over the past few years because banks are aggressively placing orders to them. The Hyderabad-based Tele systems has recently started manufacturing these terminals and brought down the cost to less than Rs 10,000, which helps increase the number of terminals manifolds. The banks can now afford to put-up EDC terminals even in stores or malls as the break-even point for these terminals has come down to less than Rs 50,000 worth of transactions a day from Rs 100,000.

3. ELECTRONIC PAYMENT METHODS

The ease of purchasing and selling products over the Internet has helped the growth of electronic payments services, which are convenient and efficient way of doing financial transactions. The current e-payment technologies depend on the use of traditional methods that are common to non-electronic systems. Due to the nature of Internet, security and authenticity of payments and participants cannot be guaranteed with technologies that are not specifically designed for electronic commerce. We need an e-payment system that would not only provide secure
payments but also have properties like online customer and merchant authentication, unforgivable proof of transaction authorization by the customer both to the merchant and the bank, privacy of customer and transaction data. In this context, the following are the expectation of the electronic payment methods.

a) Innovations affecting consumers include credit and debit cards, automated teller machines, stored value cards, and e-banking.

b) Innovations enabling online commerce are e-cash, e-checks, smart cards, and encrypted credit cards. These payment methods are not so popular in developing countries and they are employed by a few large companies.

c) Innovations affecting companies pertain to payment mechanisms that banks provide their clients, including inter-bank transfers through automated clearing houses allowing payment by direct deposit.

4. E-PAYMENT TECHNOLOGIES:

There are various electronic gadgets, through which the electronic payments are making, which are discusses as under:

![Credit Card - Business Model](source: Daniel L Silver)

4.1 Credit Cards

Credit cards have become one of the most common and popular forms of payment for e-commerce transactions. In North America almost 90% of online B2C transactions were made with credit cards. According to the recent survey, more than 85% customers have been paying with credit cards on purchases.

A credit card, such as Visa or Master Card, has a limited base on the user’s credit. Bank set a fixed amount credit based on the financial background and transactions processing of a customer and allows the customer to spend at any place and any time if the vendor accepts. Increased security measures such as the use of the card verification number (CVN) which detects fraud by comparing the verification number and signature strip on the back of the card with the
information on file with the cardholder's issuing bank. Also online merchants have to comply with stringent rules stipulated by the credit and debit card issuers, which means that merchants must have security protocol and procedures in place to ensure transactions are more secure. This can also include having a certificate from an authorized certification authority (CA) who provides PKI infrastructure for securing credit and debit card transactions.

Even though the credit cards are vigorously using in North America, there are still a large number of countries such as China, India, Russia and Brazil that have some problems to overcome in regard to credit card security. Online credit card purchases are similar to telephone purchases in that the card holder is not present and cannot provide proof of identity. Online and telephone purchases are often called card not present transactions and both require an extra degree of security.

4.2 Debit Card

Debit Card uses the available funds from the account of the customer. Every time a customer uses this card, money transferred from the bank of the customer to the bank of the vendor via internet banking system. Customer has to open an account with a bank and then bank gives debit card with a Personal Identification Number (PIN) after verification. In this system, customer never overspends money in the bank, but in a credit card system if the customer does not pay the money given due to credit, the bank faces a default situation. This is a key variable for the rise of debit cards over credit cards. According to the RBI in India, there are over 15 crores debit and 2 crores credit cards.

4.3 Smart Cards

A Smartcard is similar to a credit card; however it contains an embedded 8-bit microprocessor and uses electronic cash which transfers from the consumers’ card to the sellers’ device. A popular smartcard initiative is the VISA Smartcard, through which one can transfer electronic cash to their cards from their bank account and then they can use that card at various retailers and on the internet.

4.4 e-Wallets

This is established by financial institutions in partnership with member e-Commerce sites. It allows customer to submit billing and shipping info with one click at member sites. Also, it can store e-Cheques, e-Cash and Credit Card information and they are not as popular as originally designed. Entry point’s Info Gate offers an e-wallet.

4.5 Peer to Peer Method

In this method “Digital cash” arrives via email (e-Cash.com). PayPal.com is digital payment system and acts as a trusted third party. Sender sets up an account and requests to send payment. Sender places payment into the receiver’s account by credit-card. Then receiver is notified of payment via email. Receiver can transfer funds to bank account or request a cheque. There is also a request payment method (Daniel).
Table-2 presents the data on different modes of e-payment systems and their ranks. It can be seen from the data in table-2 that the credit card stood first among the various types of e-payments in India followed by debit card. It is noted in this context that cash on delivery ranked third and all other types of e-payments are very insignificant and none of the customers are opting their transactions in prepaid card and convenience store forms.

<table>
<thead>
<tr>
<th>E-Commerce Payment Systems</th>
<th>%</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Credit Card</td>
<td>35</td>
<td>1</td>
</tr>
<tr>
<td>Debit Card (Smart Card)</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>Cash on Delivery</td>
<td>24</td>
<td>3</td>
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<tr>
<td>Bank Transfer</td>
<td>9</td>
<td>4</td>
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<tr>
<td>Money Transfer</td>
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<td>5</td>
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<tr>
<td>Postal Transfer</td>
<td>1</td>
<td>6</td>
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<tr>
<td>Prepaid Card</td>
<td>0</td>
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<tr>
<td>Payment through Convenience Store</td>
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<tr>
<td>Total</td>
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Source: Sumanjeet (2008)

4.6 Micro Payments

Long distance phone call charge is an example of a micro-payment. Digital Equipment Corporation (DEC) researchers originally envisioned MPs such as payment per newspaper article ($0.005), payment by stock quote ($0.001), payment per click (Q-pass, Inc). Micro payment method failed because overly complicated for customer and business – technology and accounting. Income is very dependent on customer use (difficulties in cash flow management). Customer anxiety – could act as deterrent, difficulties in standardization – lots of different approaches, variant media.

4.7 Scrip

Scrip is another limited use payment medium. Scrip is digital cash minted by a company instead of by a government. Most scrips cannot be exchanged for cash. It must be exchanged for goods or services by the company that issued the scrip. Scrip is like a gift certificate that is good at more than one store.

4.8 Charge Card

Charge card offered by American Express. Charge cards do not involve lines of credit and do not accumulate interest charges (Gary 2008). By using radio frequency identification - or RFID - the systems automatically identify customers, who have set up credit or debit accounts with the issuer, and charge them for their purchases. The RFID payment systems are similar in some
ways to stored-value cards and the programmable "smart cards". Those cards automatically deduct money for purchases from prepaid accounts or charge them to a personal account. Among all those Internet Payment Cards, major cards using in India are Credit and Debit cards only. The e-commerce market in Korea is expected to double annually in the next five years. Since Korea is the world’s second-fastest-growing IT market, EPS will play an important role in executing wide-ranging activities and actively confronting changing economic conditions (Changsu Kim, 2009). Irrespective of the type of payment mechanism adopted, digital payment mechanisms have to exhibit certain characteristics, to meet the basic requirements becoming a viable alternative to traditional payment mechanisms (Bharat Bhaskar, 2009).

5. PROCESSING E-PAYMENT CARD TRANSACTION:

A consumer first had to establish an account at a bank that was using e-cash system. Once the account is established, the consumer then downloaded the e-wallet software onto his/her computer’s hard drive. Then consumer could request a transfer of digital cash. Once the digital wallet had cash, the consumer could spend that cash at merchants who were willing to accept it. The software would deduct the cash from digital wallet and transfer it to the merchant. The merchant could then transfer the cash back to the bank to confirm that it had not been double spent. The bank would cancel the e-coins or credit the merchant account at bank. Credit cards store a single charge account number in the magnetic strip on the back, smart cards can hold 100 times more data, including multiple credit card numbers and information regarding health insurance, transportation, personal identification, bank accounts and loyalty programs, such as frequent flyer accounts. This capacity makes them attractive alternatives to carrying a dozen or so credit and ID cards in a physical wallet of an individual.

There are several companies for example Internet Secure called payment processing service providers. The service providers concentrate on business while it provides secure payment card services. Internet Secure supports payments with Visa and MasterCard for Canadian and US accounts. The company provides risk management and fraud detection and handles transactions from online merchants using existing, bank-approved payment card processing infrastructure, secure links and firewall.

Internet Secure notifies the merchant of all approved orders and also supplies authorization codes to buyers of digital content; one can download their purchases upon payment card approval. Internet Secure ensures that the transactions it processes are credited to the correct merchant’s account. Services like ICVERIFY and Web Authorize connect directly to a network of banks called the Automated Clearing House and to credit card authorization companies.

6. MODEL OF INTERNET PAYMENT SYSTEM:

ICICI Bank started as a wholly owned subsidiary of ICICI Limited, an Indian financial institution, in 1994. It’s head office located in Mumbai. As of December 31, 2011, ICICI is India’s second-largest bank, boasting an asset value of Rs. 3,744.10 billion and profit after tax Rs. 30.14 billion, for the nine months, that ended on December 31, 2011. ICICI Bank has a wide network both in Indian and abroad. In India alone, the bank has 1,420 branches and about 4,644 ATMs. Its sales are amounted to US $9.84 billion. Services and products of ICICI Bank are
categorized into personal banking, business banking, and NRI banking. On January 1, 2012, a full-page advertisement in newspapers of Mumbai ICICI Bank has promoted activities and facilities with the user base of two million credit cards.

The ICICI Bank payment gateway ‘Pay seal’ enables organizations to accept secure online Credit Cards payments over the Internet. Pay seal is the online real-time payment gateway. It makes electronic commerce more convenient and offers ease and security of accepting payments on the Internet. It provides that trust and security which customers require. Pay seal offers 128-bit SSL encryption, an established security technology protocol. It can process Visa and MasterCard Credit Cards issued around the globe. Pay seal requires easy installation, operation and management. Pay seal works unified architecture supporting the Internet's widest range of secure payment options. Funds can transfer between ICICI Bank accounts and non-ICICI Bank accounts.

7. CONCLUSION:

The world of transactions has been going through rapid change through technological innovations such as software development, internet, networking, broadband and mobile phones. Physical cash is no longer better option than credit card or online transaction. Governments of Andhra Pradesh and Kerala have been promoting and increasing usage of online or debit or credit card use to make all utility payments. One can use debit or credit cards for paying petrol bills, mobile phone bills, insurance premiums, airlines and railway tickets, besides other consumer goods. But there are many other payments that cannot be made through credit cards even now. For instance, school tuition fees, water tax and other municipal taxes, electricity bills and fees for doctors and clinics. But penetration of computers with internet and good broad band will change all this. Of course, security is a major concern.

Total mobile subscriber base in India has gone over 800 million as of February 2011, second largest in the world. There are over 200 million debit or credit card holders in the world. ATM market in India is considered the hottest for players as well as consumers in five years. So the growth of e-Commerce is going to be phenomenal. India has been ranked in the top 10 among global manufacturing goods. All this leads to the point of Indian ascent to the top three economic giants of the world.

REFERENCES


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