PROJECT REPORT ON

E-BANKING

SUBMITTED BY

ALQUAMA SIDDIQUI

TY BMS SEMESTER –V

PROJECT GUIDE

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SUBMITTED TO

UNIVERSITY OF MUMBAI

THROUGH

SMT. KAMALADEVI GAURIDUTT MITTAL

COLLEGE OF ARTS & COMMERCE

2011-2012

DECLARATION

I, **ALQUAMA SIDDIQUI** OF **SMT. K.G.MITTAL COLLEGE** OF T.Y.B.M.S (SEMESTER--V); HEREBY DECLARE THAT I HAVE COMPLETED THE PROJECT ON **E-BANKING** IN THE ACADEMIC YEAR 2011-2012.

THE INFORMATION SUBMITTED IS TRUE AND ORIGINAL TO THE BEST OF MY KNOWLEDGE...

Date:

_____

(ALQUAMA SIDDIQUI)

GUIDE CERTIFICATE

I, PROF. **ALQUAMA SIDDIQUI** HEREBY CERTIFY THAT **ALQUAMA SIDDIQUI** OF SMT. K.G.MITTAL COLLEGE T.Y.B.M.S (SEMESTER--V) HAS COMPLETED PROJECT ON **E-BANKING** IN THE ACADEMIC YEAR 2011-2012.

SHE HAS COMPLETED THIS PROJECT UNDER MY GUIDENCE & SUPERVISION AND THE INFORMATION SUBMITTED IS TRUE AND ORIGINAL TO THE BEST OF MY KNOWLEDGE.

_____ _____ _____

PROF.A.VMANDKE. **PROF. LEENA GADKARI**
DR. JOHN D'MELLO

(PROJECT GUIDE) **(BMS CO-ORDINATOR)**
(COLLEGE PRINCIPAL)

DATE:

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My thanks are also due to all my friends and well wishers who have helped me at various levels. I once again thank all of them whole heartedly.

ALQUAMA SIDDIQUI

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E-BANKING

EXECUTIVE SUMMARY

This project encloses information about the new technologies and innovations used in the Banking Sector in today’s world.

It contains information on the introduction of the Indian Banking Sector and the various changes in the different eras in the Banking Sector.

The impact of technology has drastically changed the way how Banks function and operate. With the advent of technologies various new banking Products are now available which were not available before.

With the help of core banking networking between banks and branches have now become possible due to which banks can now operate much faster and efficiently.

The use of ATM, Online banking, Phone Banking, have has increased the functionality of banks, it has created ease of usage of banking functions and activities.

Due to technological innovations major changes have taken place both in financial services been offered as well as in the manner in which customers are accessing them.

More banking services are now being accessed remotely rather than through Branch banking. Banks need to improve and

differentiate the customer banking experience to attract and retain customers more profitability.

There are various drawbacks of e-banking, such as the increasing number of frauds happening. Frauds usually takes place while banking through the internet.

There are various types of frauds that happen.

This projects explains the means used in Banking and the working and the history of current Banking techniques, along with improvement which can be achieved to better the service.

CHAPTER 1: INTRODUCTION TO E-BANKING

Banking in India originated in the last decades of the 18th century. The first banks were The General Bank of India, which started in 1786, and Bank of Hindustan, which started in 1790; both are now defunct. The oldest bank in existence in India is the State Bank of India, which originated in the Bank of Calcutta in June 1806, which almost immediately became the Bank of Bengal. This was one of the three presidency banks, the other two being the Bank of Bombay and the Bank of Madras, all three of which were established under charters from the British East India Company. For many years the Presidency banks acted as quasi-central banks, as did their successors. The three banks merged in 1921 to form the Imperial Bank of India, which, upon India's independence, became the State Bank of India.

Internet banking (or E-banking) means any user with a personal computer and a browser can get connected to his bank -s website to perform any of the virtual banking functions. In internet banking system the bank has a centralized database that is web-enabled. All the services that the bank has permitted on the internet are displayed in menu. Any service can be selected and further interaction is dictated by the nature of service. The traditional branch model of bank is now giving place to an alternative delivery channels with ATM network. Once the branch offices of bank are interconnected through terrestrial or satellite links, there would be no physical identity for any branch. It would a borderless entity permitting anytime, anywhere and anyhow banking.

The network which connects the various locations and gives connectivity to the central office within the organization is called intranet. These networks are limited to organizations for which they are set up. SWIFT is a live example of intranet application.

CHAPTER 2:

ONLINE BANKING

The precursor for the modern home online banking services were the distance banking services over electronic media from the early 1980s. The term online became popular in the late '80s and referred to the use of a terminal, keyboard and TV (or monitor) to access the banking system using a phone line. 'Home banking' can also refer to the use of a numeric keypad to send tones down a phone line with instructions to the bank. Online services started in New York in 1981 when four of the city's major banks (Citibank, Chase Manhattan, Chemical and Manufacturers Hanover) offered home banking services[1] using the videotex system. Because of the commercial failure of videotex these banking services never became popular except in France where the use of videotex (Minitel) was subsidised by the telecom provider and the UK, where the Prestel system was used.

The UK's first home online banking services[2] was set up by Bank of Scotland for customers of the Nottingham Building Society (NBS) in 1983.[3] The system used was based on the UK's Prestel system and used a computer, such as the BBC Micro, or keyboard (Tandata Td1400) connected to the telephone system and television set. The system (known as 'Homelink') allowed on-line viewing of statements, bank transfers and bill payments. In order to make bank transfers and bill payments, a written instruction giving details of the intended recipient had to be sent to the NBS who set the details up on the Homelink system. Typical recipients were gas, electricity and telephone companies and accounts with other banks. Details of payments to be made were input into the NBS system by the account holder via Prestel. A cheque was then sent by NBS to the payee and an advice giving details of the payment was sent to the account holder. BACS was later used to transfer the payment directly.

Stanford Federal Credit Union was the first financial institution to offer online internet banking services to all of its members in October 1994.[citation needed]

Today, many banks are internet only banks. Unlike their predecessors, these internet only banks do not maintain brick and mortar bank branches. Instead, they typically differentiate themselves by offering better interest rates and online banking features

CHAPTER 3:

CORE BANKING

Core Banking is normally defined as the business conducted by a banking institution with its retail and small business customers. Many banks treat the retail customers as their core banking

customers, and have a separate line of business to manage small businesses. Larger businesses are managed via the corporate banking division of the institution. Core banking basically is depositing and lending of money.

Nowadays, most banks use core banking applications to support their operations where CORE stands for "centralized online real-time exchange". This basically means that all the bank's branches access applications from centralized datacenters. This means that the deposits made are reflected immediately on the bank's servers and the customer can withdraw the deposited money from any of the bank's branches throughout the world. These applications now also have the capability to address the needs of corporate customers, providing a comprehensive banking solution.

A few decades ago it used to take at least a day for a transaction to reflect in the account because each branch had their local servers, and the data from the server in each branch was sent in a batch to the servers in the datacenter only at the end of the day (EoD).

Normal core banking functions will include deposit accounts, loans, mortgages and payments. Banks make these services available across multiple channels like ATMs, Internet banking, and branches.

Core banking solutions

Core banking solutions are banking applications on a platform enabling a phased, strategic approach that is intended to allow banks to improve operations, reduce costs, and be prepared for growth. Implementing a modular, component-based enterprise solution facilitates integration with a bank's existing technologies. An overall service-oriented-architecture (SOA) helps banks reduce the risk that can result from manual data entry and out-of-date information, increases management information and review, and avoids the potential disruption to business caused by replacing entire systems.

Core banking solutions is new jargon frequently used in banking circles. The advancement in technology, especially Internet and information technology has led to new ways of doing business in banking. These technologies have cut down time, working simultaneously on different issues and increasing efficiency. The platform where communication technology and information technology are merged to suit core needs of banking is known as core banking solutions. Here, computer software is developed to perform core operations of banking like recording of transactions, passbook maintenance, interest calculations on loans and deposits, customer records, balance of payments and withdrawal. This software is installed at different branches of bank and then interconnected by means of communication lines like telephones, satellite, internet etc. It allows the user (customers) to operate accounts from any branch if it has installed core banking solutions. This new platform has changed the way banks are working.

Gartner defines a core banking system as a back-end system that processes daily banking transactions, and posts updates to accounts and other financial records. Core banking systems typically include deposit, loan and credit-processing capabilities, with interfaces to general ledger systems and reporting tools. Strategic spending on these systems is based on a combination of service-oriented architecture and supporting technologies that create extensible, agile architectures.

CHAPTER 4: ADVANTAGES & DISADVANTAGES OF E-BANKING

Advantages:

Internet banking does offer many benefits for both banks and their customers. So the banks are doing what they can to encourage customers to try it.

1. An internet banking account is simple to open and use.

You just enter a few answers to questions in a form while sitting comfortably in your own home or office. To access , you establish security measures such as and passwords. To complete the set up of your account, you just print, sign and send in a form.

2. Internet banking costs less.

Because there are fewer buildings to maintain, and less involvement by salaried employees, there is a much lower overhead with . These savings allow them to offer higher interest rates on savings accounts and lower and service charges.

Even traditional brick and mortar banks offer better deals such as free bill paying services to encourage their customers to do their banking online.

3. Comparing internet banks to get the best deal is easy.

In a short time, you can visit several online banks to compare what they offer re savings and checking account deals as well as their interest rates.

Other things you can easily research are what credit cards are available, credit card interest rates, loan terms and the banks own rating with the .

4. Bouncing a check (accidentally) should be a thing of the past because you can monitor your account online any time, day or night.

You can track your balance daily, see what checks have cleared and when and know when automatic deposits and payments are

made. This is all possible by simply going online to the banks website and logging into your account.

5. You can keep your account balanced using your computer and your .

Your account information can be downloaded into such as Microsoft Money or Quicken, making is easy to reconcile your account with just a few mouse . The convenience of the data capture online makes it much easier to budget and track where your money goes. Your internet bank account even allows you to view copies of the checks you have written each month.

6. With the ability to view your account at anytime, it is easier to catch fraudulent activity in your account before much damage is done.

As soon as you log into your account, you will quickly see whether there is anything amiss when you check on your deposits and debits. If anyone writes a check or withdraws funds from your account and you know it wasn't you, you will see it right away. This lets you get started on correcting the problem immediately rather than having to wait a month to even have a clue it is happening as would be the case with a traditional bank.

7. Internet banking offers a great deal more convenience than you could get from a conventional bank.

You aren't bound by 'banker's hours' and you don't have to go there physically in your car. Time is not wasted when you have work to do because you can do your office's banking without leaving the office. No matter where you are or what time it is, you can easily manage your money.

There are sound reasons why internet banking is growing. The

economic advantages have encouraged banks to provide an increasing range of easy to use services via the internet.

Customers have found simple and speedy and have become very comfortable with the arrangement. Internet banking gives people more control over their money in a very convenient way that they find enjoyable and reassuring.

Disadvantages:

Internet banking or electronic banking allows customers to access their accounts at any time from any computer or smart phone. This banking style has a lot of advantages, including 24-hour account monitoring, the ability to bank from anywhere and fast transactions. However, this system has some distinct disadvantages, too.

Identity Confirmation

- Federal regulations require that financial institutions confirm each customer's identity. This may present a logistical issue, as copying and faxing documents is sometimes necessary.

Security Concerns

- With hacking and identity theft on the rise, Internet banking customers have to place a certain amount of trust in the bank that their account information and personal information are safe.

Customer Service

- If you bank at a traditional bank, you can go to the bank and speak to someone face to face about your problem but, with an Internet bank, you will likely spend a lot of time on the phone being passed around and placed on hold.

Accessibility

- If the Internet goes down in your area or the area of the banking office, you will be unable to access your accounts. This includes being unable to withdraw money from ATMs or to use your debit card.

Fees

- Many Internet banks don't have ATMs, which means you will have to pay ATM fees. This can cost you more money than paying the regular monthly fees at a brick and mortar bank.

CHAPTER 5:

CREDIT CARDS

Meaning and history:

A **credit card** is a small plastic card issued to users as a system of payment. It allows its holder to buy goods and services based on the holder's promise to pay for these goods and services. The issuer of the card creates a revolving account and grants a line of credit to the

consumer (or the user) from which the user can borrow money for payment to a merchant or as a cash advance to the user.

A credit card is different from a charge card: a charge card requires the balance to be paid in full each month. In contrast, credit cards allow the consumers a continuing balance of debt, subject to interest being charged. A credit card also differs from a cash card, which can be used like currency by the owner of the card. Most credit cards are issued by banks or credit unions, and are the shape and size specified by the ISO/IEC 7810 standard as ID-1. This is defined as 85.60 × 53.98 mm (3.370 × 2.125 in) ($3^3/_8 \times 2^1/_8$ in) in size.

The concept of using a card for purchases was described in 1887 by Edward Bellamy in his utopian novel *Looking Backward*. Bellamy used the term *credit card* eleven times in this novel.

The modern credit card was the successor of a variety of merchant credit schemes. It was first used in the 1920s, in the United States, specifically to sell fuel to a growing number of automobile owners. In 1938 several companies started to accept each other's cards. Western Union had begun issuing charge cards to its frequent customers in 1921. Some charge cards were printed on paper card stock, but were easily counterfeited.

The Charga-Plate, developed in 1928, was an early predecessor to the credit card and used in the U.S. from the 1930s to the late 1950s. It was a 2½" × 1¼" rectangle of sheet metal related to Addressograph and military dog tag systems. It was embossed with the customer's name, city and state. It held a small paper card for a signature. In recording a purchase, the plate was laid into a recess in the imprinter, with a paper "charge slip" positioned on top of it. The record of the transaction included an impression of the embossed information, made by the imprinter pressing an inked ribbon against the charge slip. Charga-Plate was trademarks of Farrington Manufacturing Co. Charga-Plates were issued by large-scale merchants to their regular customers, much like department store credit cards of today. In some cases, the plates were

kept in the issuing store rather than held by customers. When an authorized user made a purchase, a clerk retrieved the plate from the store's files and then processed the purchase. Charga-Plates speeded back-office bookkeeping that was done manually in paper ledgers in each store, before computers.

In 1936, American Airlines and the Air Transport Association simplified the process even more with the advent of the Air Travel Card. They created a numbering scheme that identified the Issuer of card as well as the Customer account. Even today, the modern UATP cards all start with the number 1. With an Air Travel Card passengers could “buy now, and pay later” for a ticket against their credit and receive a fifteen percent discount at any of the accepting airlines. By the 1940s, all of the major domestic airlines offered Air Travel Cards that could be used on 17 different airlines. By 1941 about half of the Airlines Revenues came through the Air Travel Card agreement. The Airlines had also started offering installment plans to lure new travelers into the air. In October 1948 the Air Travel Card become the first inter-nationally valid Charge Card within all members of the International Air Transport Association.

The concept of customers paying different merchants using the same card was expanded in 1950 by Ralph Schneider and Frank McNamara, founders of Diners Club, to consolidate multiple cards. The Diners Club, which was created partially through a merger with Dine and Sign, produced the first "general purpose" charge card, and required the entire bill to be paid with each statement. That was followed by Carte Blanche and in 1958 by American Express which created a worldwide credit card network (although these were initially charge cards that acquired credit card features after BankAmericard demonstrated the feasibility of the concept).

However, until 1958, no one had been able to create a working *revolving credit* financial instrument issued by a third-party bank that was generally accepted by a large number of merchants (as opposed to merchant-issued revolving cards accepted by only a few merchants). A

dozen experiments by small American banks had been attempted (and had failed). In September 1958, Bank of America launched the *BankAmericard* in Fresno, California. BankAmericard became the first successful recognizably modern credit card (although it underwent a troubled gestation during which its creator resigned), and with its overseas affiliates, eventually evolved into the Visa system. In 1966, the ancestor of MasterCard was born when a group of California banks established Master Charge to compete with BankAmericard; it received a significant boost when Citibank merged its proprietary Everything Card (launched in 1967) into Master Charge in 1969.

Early credit cards in the U.S., of which BankAmericard was the most prominent example, were mass produced and mass mailed unsolicited to bank customers who were thought to be good credit risks. But, “They have been mailed off to unemployables, drunks, narcotics addicts and to compulsive debtors, a process President Johnson’s Special Assistant Betty Furness found very like ‘giving sugar to diabetics’.” These mass mailings were known as "drops" in banking terminology, and were outlawed in 1970 due to the financial chaos that they caused, but not before 100 million credit cards had been dropped into the U.S. population. After 1970, only credit card applications could be sent unsolicited in mass mailings.

The fractured nature of the U.S. banking system under the Glass–Steagall Act meant that credit cards became an effective way for those who were traveling around the country to move their credit to places where they could not directly use their banking facilities. In 1966 Barclaycard in the UK launched the first credit card outside of the U.S.

There are now countless variations on the basic concept of revolving credit for individuals (as issued by banks and honored by a network of financial institutions), including organization-branded credit cards, corporate-user credit cards, store cards and so on.

Although credit cards reached very high adoption levels in the US, Canada and the UK in the mid twentieth century, many cultures were

more cash-oriented, or developed alternative forms of cash-less payments, such as Carte bleue or the Eurocard (Germany, France, Switzerland, and others). In these places, adoption of credit cards was initially much slower. It took until the 1990s to reach anything like the percentage market-penetration levels achieved in the US, Canada, or UK. In some countries, acceptance still remains poor as the use of a credit card system depends on the banking system being perceived as reliable. Japan remains a very cash oriented society, with credit card adoption being limited to only the largest of merchants, although an alternative system based on RFIDs inside cellphones has seen some acceptance. Because of strict regulations regarding banking system overdrafts, some countries, France in particular, were much faster to develop and adopt chip-based credit cards which are now seen as major anti-fraud credit devices. Debit cards and online banking are used more widely than credit cards in some countries.

The design of the credit card itself has become a major selling point in recent years. The value of the card to the issuer is often related to the customer's usage of the card, or to the customer's financial worth. This has led to the rise of Co-Brand and Affinity cards - where the card design is related to the "affinity" (a university or professional society, for example) leading to higher card usage. In most cases a percentage of the value of the card is returned to the affinity group.

WORKING OF CREDIT CARDS:

How credit cards work

Credit cards are issued by a credit card issuer, such as a bank or credit union, after an account has been approved by the credit provider, after which cardholders can use it to make purchases at merchants accepting that card. Merchants often advertise which cards they accept by displaying acceptance marks – generally derived from logos – or may communicate this orally, as in "Credit cards are fine" (implicitly

meaning "major brands"), "We take (brands X, Y, and Z)", or "We don't take credit cards".

When a purchase is made, the credit card user agrees to pay the card issuer. The cardholder indicates consent to pay by signing a receipt with a record of the card details and indicating the amount to be paid or by entering a personal identification number (PIN). Also, many merchants now accept verbal authorizations via telephone and electronic authorization using the Internet, known as a card not present transaction (CNP).

Electronic verification systems allow merchants to verify in a few seconds that the card is valid and the credit card customer has sufficient credit to cover the purchase, allowing the verification to happen at time of purchase. The verification is performed using a credit card payment terminal or point-of-sale (POS) system with a communications link to the merchant's acquiring bank. Data from the card is obtained from a magnetic stripe or chip on the card; the latter system is called Chip and PIN in the United Kingdom and Ireland, and is implemented as an EMV card.

For card not present transactions where the card is not shown (e.g., e-commerce, mail order, and telephone sales), merchants additionally verify that the customer is in physical possession of the card and is the authorized user by asking for additional information such as the security code printed on the back of the card, date of expiry, and billing address.

Each month, the credit card user is sent a statement indicating the purchases undertaken with the card, any outstanding fees, and the total amount owed. After receiving the statement, the cardholder may dispute any charges that he or she thinks are incorrect (see 15 U.S.C. § 1643, which limits cardholder liability for unauthorized use of a credit card to $50, and the Fair Credit Billing Act for details of the US regulations). Otherwise, the cardholder must pay a defined minimum proportion of the bill by a due date, or may choose to pay a higher amount up to the entire amount owed. The credit issuer charges interest on the amount

owed if the balance is not paid in full (typically at a much higher rate than most other forms of debt). In addition, if the credit card user fails to make at least the minimum payment by the due date, the issuer may impose a "late fee" and/or other penalties on the user. To help mitigate this, some financial institutions can arrange for automatic payments to be deducted from the user's bank accounts, thus avoiding such penalties altogether as long as the cardholder has sufficient funds.

Advertising, solicitation, application and approval

Credit card advertising regulations include the Schumer box disclosure requirements. A large fraction of junk mail consists of credit card offers created from lists provided by the major credit reporting agencies. In the United States, the three major US credit bureaus (Equifax, TransUnion and Experian) allow consumers to opt out from related credit card solicitation offers via its Opt Out Pre Screen program.

Interest charges

Credit card issuers usually waive interest charges if the balance is paid in full each month, but typically will charge full interest on the entire outstanding balance from the date of each purchase if the total balance is not paid.

For example, if a user had a $1,000 transaction and repaid it in full within this grace period, there would be no interest charged. If, however, even $1.00 of the total amount remained unpaid, interest would be charged on the $1,000 from the date of purchase until the payment is received. The precise manner in which interest is charged is usually detailed in a cardholder agreement which may be summarized on the back of the monthly statement. The general calculation formula most financial institutions use to determine the amount of interest to be charged is APR/100 x ADB/365 x number of days revolved. Take the annual percentage rate (APR) and divide by 100 then multiply to the amount of the average daily balance (ADB) divided by 365 and then take this total and multiply by the total number of days the amount

revolved before payment was made on the account. Financial institutions refer to interest charged back to the original time of the transaction and up to the time a payment was made, if not in full, as RRFC or residual retail finance charge. Thus after an amount has revolved and a payment has been made, the user of the card will still receive interest charges on their statement after paying the next statement in full (in fact the statement may only have a charge for interest that collected up until the date the full balance was paid, i.e. when the balance stopped revolving).

The credit card may simply serve as a form of revolving credit, or it may become a complicated financial instrument with multiple balance segments each at a different interest rate, possibly with a single umbrella credit limit, or with separate credit limits applicable to the various balance segments. Usually this compartmentalization is the result of special incentive offers from the issuing bank, to encourage balance transfers from cards of other issuers. In the event that several interest rates apply to various balance segments, payment allocation is generally at the discretion of the issuing bank, and payments will therefore usually be allocated towards the lowest rate balances until paid in full before any money is paid towards higher rate balances. Interest rates can vary considerably from card to card, and the interest rate on a particular card may jump dramatically if the card user is late with a payment on that card or any other credit instrument, or even if the issuing bank decides to raise its revenue.

Benefits to customers

The main benefit to each customer is convenience. Compared to debit cards and cheques, a credit card allows small short-term loans to be quickly made to a customer who need not calculate a balance remaining before every transaction, provided the total charges do not exceed the maximum credit line for the card. Credit cards also provide more fraud protection than debit cards. In the UK for example, the bank is jointly liable with the merchant for purchases of defective products over £100.

Many credit cards offer rewards and benefits packages, such as offering enhanced product warranties at no cost, free loss/damage coverage on new purchases, and points which may be redeemed for cash, products, or airline tickets.

Detriments to customers

High interest and bankruptcy

Low introductory credit card rates are limited to a fixed term, usually between 6 and 12 months, after which a higher rate is charged. As all credit cards charge fees and interest, some customers become so indebted to their credit card provider that they are driven to bankruptcy. Some credit cards often levy a rate of 20 to 30 percent after a payment is missed; in other cases a fixed charge is levied without change to the interest rate. In some cases universal default may apply: the high default rate is applied to a card in good standing by missing a payment on an unrelated account from the same provider. This can lead to a snowball effect in which the consumer is drowned by unexpectedly high interest rates. Further, most card holder agreements enable the issuer to arbitrarily raise the interest rate for any reason they see fit. As of December 2009, First Premier Bank is reportedly offering a credit card with a 79.9% interest rate.

Inflated pricing for all consumers

Merchants that accept credit cards must pay interchange fees and discount fees on all credit-card transactions. In some cases merchants are barred by their credit agreements from passing these fees directly to credit card customers, or from setting a minimum transaction amount (no longer prohibited in the United States). The result is that merchants may charge all customers (including those who do not use credit cards) higher prices to cover the fees on credit card transactions.[8] In the United States in 2008 credit card companies collected a total of $48 billion in interchange fees, or an average of $427 per family, with an average fee rate of about 2% per transaction.

Grace period

A credit card's grace period is the time the customer has to pay the balance before interest is assessed on the outstanding balance. Grace periods may vary, but usually range from 20 to 50 days depending on the type of credit card and the issuing bank. Some policies allow for reinstatement after certain conditions are met.

Usually, if a customer is late paying the balance, finance charges will be calculated and the grace period does not apply. Finance charges incurred depend on the grace period and balance; with most credit cards there is no grace period if there is any outstanding balance from the previous billing cycle or statement (i.e. interest is applied on both the previous balance and new transactions). However, there are some credit cards that will only apply finance charge on the previous or old balance, excluding new transactions.

Benefits to merchants

An example of street markets accepting credit cards. Most simply display the acceptance marks (stylized logos, shown in the upper-left corner of the sign) of all the cards they accept.

For merchants, a credit card transaction is often more secure than other forms of payment, such as cheques, because the issuing bank commits to

pay the merchant the moment the transaction is authorized, regardless of whether the consumer defaults on the credit card payment (except for legitimate disputes, which are discussed below, and can result in charges back to the merchant). In most cases, cards are even more secure than cash, because they discourage theft by the merchant's employees and reduce the amount of cash on the premises.

Prior to credit cards, each merchant had to evaluate each customer's credit history before extending credit. That task is now performed by the banks which assume the credit risk. Credit cards can also aid in securing a sale, especially if the customer does not have enough cash on his or her person or checking account. Extra turnover is generated by the fact that the customer can purchase goods and/or services immediately and is less inhibited by the amount of cash in his or her pocket and the immediate state of his or her bank balance. Much of merchants' marketing is based on this immediacy.

For each purchase, the bank charges the merchant a commission (discount fee) for this service and there may be a certain delay before the agreed payment is received by the merchant. The commission is often a percentage of the transaction amount, plus a fixed fee (interchange rate). In addition, a merchant may be penalized or have their ability to receive payment using that credit card restricted if there are too many cancellations or reversals of charges as a result of disputes. Some small merchants require credit purchases to have a minimum amount to compensate for the transaction costs.

In some countries, for example the Nordic countries, banks guarantee payment on stolen cards only if an ID card is checked and the ID card number/civic registration number is written down on the receipt together with the signature. In these countries merchants therefore usually ask for ID. Non-Nordic citizens, who are unlikely to possess a Nordic ID card or driving license, will instead have to show their passport, and the passport number will be written down on the receipt, sometimes together

with other information. Some shops use the card's PIN for identification, and in that case showing an ID card is not necessary.

Costs to merchants

Merchants are charged several fees for the privilege of accepting credit cards. The merchant is usually charged a commission of around 1 to 3 percent of the value of each transaction paid for by credit card. The merchant may also pay a variable charge, called an interchange rate, for each transaction. In some instances of very low-value transactions, use of credit cards will significantly reduce the profit margin or cause the merchant to lose money on the transaction. Merchants must accept these transactions as part of their costs to retain the right to accept credit card transactions. Merchants with very low average transaction prices or very high average transaction prices are more averse to accepting credit cards. In some cases merchants may charge users a "credit card supplement", either a fixed amount or a percentage, for payment by credit card. This practice is prohibited by the credit card contracts in the United States, although the contracts allow the merchants to give discounts for cash payment.

Transaction steps

- **Authorization**: The cardholder pays for the purchase and the merchant submits the transaction to the acquirer (acquiring bank). The acquirer verifies the credit card number, the transaction type and the amount with the issuer (Card-issuing bank) and reserves that amount of the cardholder's credit limit for the merchant. An authorization will generate an approval code, which the merchant stores with the transaction.

- **Batching**: Authorized transactions are stored in "batches", which are sent to the acquirer. Batches are

typically submitted once per day at the end of the business day. If a transaction is not submitted in the batch, the authorization will stay valid for a period determined by the issuer, after which the held amount will be returned to the cardholder's available credit (see authorization hold). Some transactions may be submitted in the batch without prior authorizations; these are either transactions falling under the merchant's floor limit or ones where the authorization was unsuccessful but the merchant still attempts to force the transaction through. (Such may be the case when the cardholder is not present but owes the merchant additional money, such as extending a hotel stay or car rental.)

- **Clearing and Settlement**: The acquirer sends the batch transactions through the credit card association, which debits the issuers for payment and credits the acquirer. Essentially, the issuer pays the acquirer for the transaction.

- **Funding**: Once the acquirer has been paid, the acquirer pays the merchant. The merchant receives the amount totaling the funds in the batch minus either the "discount rate," "mid-qualified rate", or "non-qualified rate" which are tiers of fees the merchant pays the acquirer for processing the transactions.

- **Chargebacks**: A chargeback is an event in which money in a merchant account is held due to a dispute relating to the transaction. Chargebacks are typically initiated by the cardholder. In the event of a chargeback, the issuer returns the transaction to the acquirer for resolution. The acquirer then forwards the

chargeback to the merchant, who must either accept the chargeback or contest it.

Secured credit cards

A secured credit card is a type of credit card secured by a deposit account owned by the cardholder. Typically, the cardholder must deposit between 100% and 200% of the total amount of credit desired. Thus if the cardholder puts down $1000, they will be given credit in the range of $500–$1000. In some cases, credit card issuers will offer incentives even on their secured card portfolios. In these cases, the deposit required may be significantly less than the required credit limit, and can be as low as 10% of the desired credit limit. This deposit is held in a special savings account. Credit card issuers offer this because they have noticed that delinquencies were notably reduced when the customer perceives something to lose if the balance is not repaid.

The cardholder of a secured credit card is still expected to make regular payments, as with a regular credit card, but should they default on a payment, the card issuer has the option of recovering the cost of the purchases paid to the merchants out of the deposit. The advantage of the secured card for an individual with negative or no credit history is that most companies report regularly to the major credit bureaus. This allows for building of positive credit history.

Although the deposit is in the hands of the credit card issuer as security in the event of default by the consumer, the deposit will not be debited simply for missing one or two payments. Usually the deposit is only used as an offset when the account is closed, either at the request of the customer or due to severe delinquency (150 to 180 days). This means that an account which is less than 150 days delinquent will continue to accrue interest and fees, and could result in a balance which is much higher than the actual credit limit on the card. In these cases the total debt may far exceed the original deposit and the cardholder not only forfeits their deposit but is left with an additional debt.

Most of these conditions are usually described in a cardholder agreement which the cardholder signs when their account is opened.

Secured credit cards are an option to allow a person with a poor credit history or no credit history to have a credit card which might not otherwise be available. They are often offered as a means of rebuilding one's credit. Fees and service charges for secured credit cards often exceed those charged for ordinary non-secured credit cards, however, for people in certain situations, (for example, after charging off on other credit cards, or people with a long history of delinquency on various forms of debt), secured cards are almost always more expensive then unsecured credit cards.

Sometimes a credit card will be secured by the equity in the borrower's home.

Prepaid "credit" cards

A **prepaid credit card** is not a true credit card, since no credit is offered by the card issuer: the card-holder spends money which has been "stored" via a prior deposit by the card-holder or someone else, such as a parent or employer. However, it carries a credit-card brand (such as Discover, Visa, MasterCard, American Express, or JCB etc.) and can be used in similar ways just as though it were a regular credit card. Unlike debit cards, prepaid credit cards generally do not require a PIN. An exception are prepaid credit cards with an EMV chip. These cards do require a PIN if the payment is processed via Chip and PIN technology.

After purchasing the card, the cardholder loads the account with any amount of money, up to the predetermined card limit and then uses the card to make purchases the same way as a typical credit card. Prepaid cards can be issued to minors (above 13) since there is no credit line involved. The main advantage over secured credit cards (see above section) is that you are not required to come up with $500 or more to open an account. With prepaid credit cards purchasers are not charged any interest but are often charged a purchasing fee plus monthly fees

after an arbitrary time period. Many other fees also usually apply to a prepaid card.

Prepaid credit cards are sometimes marketed to teenagers for shopping online without having their parents complete the transaction.

Because of the many fees that apply to obtaining and using credit-card-branded prepaid cards, the Financial Consumer Agency of Canada describes them as "an expensive way to spend your own money". The agency publishes a booklet entitled *Pre-paid Cards* which explains the advantages and disadvantages of this type of prepaid card.

Collectible credit cards

A growing field of numismatics (study of money), or more specifically exonumia (study of money-like objects), credit card collectors seek to collect various embodiments of credit from the now familiar plastic cards to older paper merchant cards, and even metal tokens that were accepted as merchant credit cards. Early credit cards were made of celluloid plastic, then metal and fiber, then paper,

Types of credit cards:

Just as there are too many credit card companies to count, there seems to be just as many different credit cards, all claiming to offer you the best possible deal. Since no two people are alike, not all programs and incentives will work the same for everyone. Finding the one that works best for you is key to maintaining responsible credit card use.

Types of Credit Cards

One of the more recent additions to the credit card world is the low-interest credit card. If you live anywhere in the U.S., you've probably already received information regarding this type of card. These cards offer a significantly lower interest rate than some of the older ones that you may already have. Also, most of these cards are also balance-transfer cards. They offer you the option of transferring a balance from a higher interest rate card and, for a specified period of time, your transferred balance will be at either 0% interest or something quite low. This can end up saving you a fair amount of money, particularly if your hope is to pay it off.

Since credit cards have gotten to be such a lucrative business, many corporations have jumped on the bandwagon. Even airlines now offer credit cards to customers that will come with a certain amount of frequent flyer miles attached to them, depending on your balance and purchases. If you do a fair amount of traveling, this can be a real bonus. Along these same lines, reward credit cards are growing in popularity. Competition is stiff and many card companies are now offering you many different reward or incentive options for using their card. Once you accumulate enough points, the rewards will pore in. These can be anything from travel insurance to small appliances and anything in between. If you use a card regularly, finding one that has a reward program can really pay off.

Another form of credit card is the instant approval card. Again, many of these applications come in the mail, some

even by e-mail. These cards offer you the opportunity to apply for a card and receive instant approval, meaning no wait time. Once you fill out the application, a quick background check will be done and you will have your approval almost immediately. Other cards can take up to two weeks to process and approve your application. Although you can get instant approval, this does not always mean you can get instant credit. Some companies will supply you with a temporary credit card number and allow you to begin making purchases immediately, while other will not due to an increase in credit card fraud potential.

Since there are so many options when it comes to choosing a credit card, do a little research before you apply. Decide what type of card will best fit your needs and apply for that one. Don't go over board though, applying for too many cards will negatively affect your credit score.

Different types of credit cards offer several different options, depending on what your needs are. Some are geared toward individual consumers, while others are set up in ways that work best for small business needs. To know what type of credit card fits your needs, let's review a few of your options.

Business Credit Cards

A business credit card offers the business owner the opportunity to keep business and personal expenses separate. The credit card may offer special business rewards and saving opportunities that go above and

beyond what the individual credit card owner may have. Since money management is essential in successfully running a business, the card may offer an expense management service that will allow you to keep track of the outgoing money. You can obtain additional credit cards for employees who may need them for travel expenses and such as well as have a higher credit limit than you normally would on an individual credit card.

Student Credit Cards

Many credit card companies will issue student credit cards that have lower credit limits and fewer incentives to help keep their spending in check. Still, take note. Many college students graduate with a credit balance that averages between $3,000 and $7,000 and with interest rates, this can be a real problem when trying to pay them off.

Prepaid Debit Cards

Prepaid debit cards are one type of credit card that has grown significantly in recent years. Although they work like a traditional credit card when making a purchase, that is where the similarities end. With prepaid debit cards, you have actually prepaid and set the credit limit by depositing money onto the debit card. Depending on how much you have deposited into the debit card's account depends on how much credit limit you want on that card. This is a great way to have the convenience of a credit card without the chance of charging more than you can afford to pay off.

Credit Cards For Bad Credit

It is possible, even with bad credit to obtain a credit card. These cards will come with some restrictions not typically found on other types of credit cards. Your credit limit will be lower and your interest rate higher. Some may require you to have a secured credit card, meaning you have to maintain a savings or some other type of account that will cover the expenses on the credit card. Once you have established that you will be responsible, some, if not all, of your restrictions may be lifted.

Cash Back Credit Cards

Many credit cards will now offer you cash back incentives for using their credit cards. Depending on how much your balance is and how often you use the credit card, you can earn cash back for your purchases. Some companies offer 1% off your balance while others, like Sears, will offer you cash off purchases made in their store. Either way, if you are planning on using a credit card, finding one that will offer you a cash incentive is a smart choice.

Features of credit cards:

Do you know anyone who doesn't have a mailbox overflowing with credit card offers? Open any of them up and you'll find in large print just what makes this card perfect for you. At first glance, this all looks good on paper, but it's the small print that you don't pay attention to that will come back and bite you in the end. All credit cards offer a variety of features. Knowing and understanding these features will help you to decide

which card is right for you.

Fees

Most credit cards charge fees for various things, and it is important to know what these fees are and how to avoid them.

The annual fee

Some credit card companies charge you an annual fee just for using their card. Because of stiff competition, you can often negotiate this fee away if you call and speak to a customer service representative.

Cash Advance Fee

Most credit card companies will charge you a fee for cash advances. These fees can vary but are usually somewhat hefty. Not only will they charge you a one-time fee, but the interest rate for this money will be at a considerably higher rate. Plus, unlike a regular purchase, where interest begins accruing after some grace period passes, cash advances accrue interest charges from day one.

Many card companies are competing for your business and are now offering an introductory cash advance and balance transfer rates for a specific amount of time. This lower rate can be applied to any balances you may wish to transfer from another card. Although it sounds good, some companies will charge you a fee for the transfer. Know what the fee is before you transfer any balances.

Miscellaneous Fees

Things like late-payment fees, over-the-credit-limit fees, set-up fees, and return-item fees are all quite common these days and can represent a serious amount of money out of your pocket if you get whacked for any of these fees.

Incentives

Since there are so many credit card companies, competition is stiff. Adding incentives to their offers is one of the more popular ways to tip the scales in their favor. Incentives like rebates on purchases, frequent flyer miles on certain airlines, and extended warranties on purchases are just a few of the bonuses that card companies will now offer.

For those of you who collect and use your frequent flyer miles, they also have added incentives like travel insurance and car rental insurance for your convenience. Of course, they are hoping that with all this traveling, you are using their card to foot at least some of the bill.

Rewards

Many card companies are looking to keep your business and are therefore making it worth your while to use their card. Just simply by using their card you can accumulate points that will in turn earn you rewards. What kind of reward depends solely on the amount of points you accumulate. Since you can't accumulate these points without charging things on your card, this is a classic

case of 'you have to spend money to save money.'

Bottom line is this: Know what you need and what you don't. No sense in paying for any features that you won't use.

Advantages & Disadvantages of credit cards:

Advantages:

1. They allow you to make purchases on credit without carrying around a lot of cash. This allows you a lot of flexibility.

1. They allow accurate record-keeping by consolidating purchases into a single statement.

1. They allow convenient remote purchasing - ordering/shopping online or by phone. They allow you to pay for large purchases in small, monthly installments.

1. Under certain circumstances, they allow you to withhold payment for merchandise which proves defective.

1. They are cheaper for short-term borrowing - interest is only paid on the remaining debt, not the full loan amount.

1. Many cards offer additional benefits such as additional insurance cover on purchases, cash back, air miles and discounts on holidays.

Disadvantages:

1. You may become an impulsive buyer and tend to overspend because of the ease of using credit cards. Cards can encourage the purchasing of goods and services you cannot really afford.
2. Credit cards are a relatively expensive way of obtaining credit if you don't use them carefully, especially because of the high interest rates and other costs.
3. Lost or stolen cards may result in some unwanted expense and inconvenience.
4. The use of a large number of credit cards can get you even further into debt.
5. Using a credit card, especially remotely, introduces an element of risk as the card details may fall into the wrong hands resulting in fraudulent purchases on the card. Fraudulent or unauthorized charges may take months to dispute, investigate, and resolve.

CHAPTER 6:
DEBIT CARDS

A **debit card** (also known as a **bank card** or **check card**) is a plastic card that provides the cardholder electronic access to his or her bank account/s at a financial institution. Some cards have a stored value with which a payment is made, while most relay a message to the cardholder's bank to withdraw funds from a designated account in favor of the payee's designated bank account. The card can be used as an alternative payment method to cash when making purchases. In some cases, the cards are designed exclusively for use on the Internet, and so there is no physical card.

In many countries the use of debit cards has become so widespread that their volume of use has overtaken or entirely replaced the check and, in some instances, cash transactions. Like credit cards, debit cards are used widely for telephone and Internet purchases.

However, unlike credit cards, the funds paid using a debit card are transferred immediately from the bearer's bank account, instead of having the bearer pay back the money at a later date.

Debit cards usually also allow for instant withdrawal of cash, acting as the ATM card for withdrawing cash and as a check guarantee card. Merchants may also offer cashback facilities to customers, where a customer can withdraw cash along with their purchase.

Types of debit cards system:

There are currently three ways that debit card transactions are processed: **online debit** (also known as **PIN debit**), **offline debit** (also known as **signature debit**) and the **Electronic Purse Card System**. One physical card can include the functions of an online debit card, an offline debit card and an electronic purse card.

Although many debit cards are of the Visa or MasterCard brand, there are many other types of debit card, each accepted only within a

particular country or region, for example Switch (now: Maestro) and Solo in the United Kingdom, Interac in Canada, Carte Bleue in France, Laser in Ireland, "EC electronic cash" (formerly Eurocheque) in Germany, UnionPay in China and EFTPOS cards in Australia and New Zealand. The need for cross-border compatibility and the advent of the euro recently led to many of these card networks (such as Switzerland's "EC direkt", Austria's "Bankomatkasse" and Switch in the United Kingdom) being re-branded with the internationally recognised Maestro logo, which is part of the MasterCard brand. Some debit cards are dual branded with the logo of the (former) national card as well as Maestro (for example, EC cards in Germany, Laser cards in Ireland, Switch and Solo in the UK, Pinpas cards in the Netherlands, Bancontact cards in Belgium, etc.). The use of a debit card system allows operators to package their product more effectively while monitoring customer spending. An example of one of these systems is ECS by Embed International.

Online Debit System

Online debit cards require electronic authorization of every transaction and the debits are reflected in the user's account immediately. The transaction may be additionally secured with the personal identification number (PIN) authentication system and some online cards require such authentication for every transaction, essentially becoming enhanced automatic teller machine (ATM) cards. One difficulty in using online debit cards is the necessity of an electronic authorization device at the point of sale (POS) and sometimes also a separate PINpad to enter the PIN, although this is becoming commonplace for all card transactions in many countries. Overall, the online debit card is generally viewed as superior to the offline debit card because of its more secure authentication system and live status, which alleviates problems with processing lag on transactions that may only issue online debit cards. Some on-line debit systems are using the normal authentication processes of Internet banking to provide real-time on-line debit transactions. The most notable of these are Ideal and POLl.

Offline Debit System

Offline debit cards have the logos of major credit cards (for example, Visa or MasterCard) or major debit cards (for example, Maestro in the United Kingdom and other countries, but not the United States) and are used at the point of sale like a credit card (with payer's signature). This type of debit card may be subject to a daily limit, and/or a maximum limit equal to the current/checking account balance from which it draws funds. Transactions conducted with offline debit cards require 2–3 days to be reflected on users' account balances. In some countries and with some banks and merchant service organizations, a "credit" or offline debit transaction is without cost to the purchaser beyond the face value of the transaction, while a small fee may be charged for a "debit" or online debit transaction (although it is often absorbed by the retailer). Other differences are that online debit purchasers may opt to withdraw cash in addition to the amount of the debit purchase (if the merchant supports that functionality); also, from the merchant's standpoint, the merchant pays lower fees on online debit transaction as compared to "credit" (offline) debit transaction.

Electronic Purse Card System

Smart-card-based electronic purse systems (in which value is stored on the card chip, not in an externally recorded account, so that machines accepting the card need no network connectivity) are in use throughout Europe since the mid-1990s, most notably in Germany (Geldkarte), Austria (Quick), the Netherlands (Chipknip), Belgium (Proton), Switzerland (CASH) and France (Mon€o, which is usually carried by a debit card). In Austria and Germany, all current bank cards now include electronic purses.

Prepaid debit cards

Prepaid debit cards, also called reloadable debit cards, appeal to a variety of users. The primary market for prepaid cards are unbanked

people, an umbrella term used to describe diverse groups of individuals who do not use banks or credit unions for their financial transactions.

The advantages of prepaid debit cards include being safer than carry cash, worldwide functionality due to Visa and MasterCard merchant acceptance, not having to worry about paying a credit card bill or going into debt, the ability for anyone over the age of 18 to apply and be accepted without regard to credit quality and the ability to direct deposit paychecks and government benefits onto the card for free.

Some of the first companies to enter this market were MiCash, RushCard and Netspend who gained high market share as a result of being first to market. However, in the past few years there have been several new providers that carry a number of other benefits, such as money remittance service, card-to-card transfers and the ability to apply without a social security number. An example of one of these providers is Goyow, a company based in New York who has grown substantially in the past 2 years as a result of their unique features and low fees.

Advantages &Disadvantages of debit card:

Advantages of debit cards

- A consumer who is not credit worthy and may find it difficult or impossible to obtain a credit card can more easily obtain a debit card, allowing him/her to make plastic transactions. For example, legislation often prevents minors from taking out debt, which includes the use of a credit card, but not online debit card transactions.

- For most transactions, a check card can be used to avoid check writing altogether. Check cards debit funds from the user's account on the spot, thereby finalizing the transaction at the time of purchase, and bypassing the requirement to pay a credit card bill at a later date,

or to write an insecure check containing the account holder's personal information.

- Like credit cards, debit cards are accepted by merchants with less identification and scrutiny than personal checks, thereby making transactions quicker and less intrusive. Unlike personal checks, merchants generally do not believe that a payment via a debit card may be later dishonored.
- Unlike a credit card, which charges higher fees and interest rates when a cash advance is obtained, a debit card may be used to obtain cash from an ATM or a PIN-based transaction at no extra charge, other than a foreign ATM fee.

Disadvantages of debit cards

- Use of a debit card is not usually limited to the existing funds in the account to which it is linked, most banks allow a certain threshold over the available bank balance which can cause overdraft fees if the users transaction does not reflect available balance.
- Many banks are now charging over-limit fees or non-sufficient funds fees based upon pre-authorizations, and even attempted but refused transactions by the merchant (some of which may be unknown until later discovery by account holder).
- Many merchants mistakenly believe that amounts owed can be "taken" from a customer's account after a debit card (or number) has been presented, without agreement as to date, payee name, amount and currency, thus causing penalty fees for overdrafts, over-the-limit, amounts not available causing further rejections or overdrafts, and rejected transactions by some banks.
- In some countries debit cards offer lower levels of security protection than credit cards. Theft of the users PIN using skimming devices can be accomplished much easier with a PIN input than with a signature-based credit transaction. However, theft of users' PIN codes using skimming devices can be equally easily accomplished with a debit transaction PIN input, as with a credit transaction PIN

input, and theft using a signature-based credit transaction is equally easy as theft using a signature-based debit transaction.

- In many places, laws protect the consumer from fraud much less than with a credit card. While the holder of a credit card is legally responsible for only a minimal amount of a fraudulent transaction made with a credit card, which is often waived by the bank, the consumer may be held liable for hundreds of dollars, or even the entire value of fraudulent debit transactions. The consumer also has a shorter time (usually just two days) to report such fraud to the bank in order to be eligible for such a waiver with a debit card, whereas with a credit card, this time may be up to 60 days. A thief who obtains or clones a debit card along with its PIN may be able to clean out the consumer's bank account, and the consumer will have no recourse.

Features of debit card:

Universal Acceptance
Use your InsTrust Visa Prepaid Debit Card at department stores, gas stations, grocery stores, restaurants and even places where cash can't go, such as bill payments over the phone, catalogue and internet shopping. Over 30 million merchants worldwide accept the InsTrust Visa Prepaid Debit Card.

Access to Cash Worldwide
Over 1 million ATMs worldwide accept InsTrust Visa Prepaid Debit Cards. Have access to your cash wherever you go. PIN is required for ATM use.

All-Access Direct Deposit
Save time and money by enrolling in FREE direct deposit. No more check cashing fees, waiting in lines, trips to the bank, or lost checks. No bank account required.

Free Account to Account Transfers
Customers can transfer funds from their InsTrust Visa Prepaid Debit Card account to any other InsTrust Visa Prepaid Debit Card account for

Free simply by logging on.
FDIC Insurance
All accounts are insured up to $100,000.

24/7 Account Access
Access your account balance, transaction history or report a Card lost or stolen online or via a toll free number 24 hours a day. 7 days a week.

Additional Cards
You can enjoy the added benefit of having up to 3 InsTrust Visa Prepaid Debit Cards on your account for friends or other family members. And best of all fund transfers between your Cards are FREE!

Reload Card Options
You can reload funds on your Card an unlimited number of times. In addition you will also enjoy the flexibility of the following options to load money on the Card:
Direct Deposit
Bank ACH Transfers
Retail Locations
PayPal Transfers

All-Access Bill Pay
Reduce the time consuming need to write checks and eliminate costly money orders by conveniently paying your bills online with your Prepaid Debit Card Account.

All-Access Wireless Alerts
A FREE service that allows you to always know your balance or be aware of any transactions made on your Card with alerts sent to your email or mobile phone.

InsTrust Visa Prepaid Debit Card National Savings
We've increased the savings rate to 5% through Decemeber 31st, 2008! There's never been a better time to start saving money. Save for a rainy day or special occasion with one of the best interest rates in the Nation.

You can even setup automatic transfers from your InsTrust Visa Prepaid Debit Card account to your savings account.

WORKING OF DEBIT CARD:

The working of debit cards is similar to that of credit cards in many ways. Debit cards allow the card holders to pay for their purchases directly from their account instead of paying in cash. Debit cards are also called as check cards or bank cards because the amount for which purchases are made is directly withdrawn in an electronic transfer from the account of the card holder.

The concept of using debit cards to pay is an alternative payment method to cheques, cash or credit card transactions.Whenever you purchase something and offer your debit card for payment, the receiver swipes your card through an electronic device. The device checks whether you have sufficient balance in the account and on confirming it, you are asked to enter the PIN.

The amount for which you are to be billed is entered and then the money is immediately transferred from your account to the account of the receiver. The major difference in this system of payment and credit card payments is the fact that there is no credit involved. Whatever is paid using your debit card is your money altogether which hasn't been taken as credit. In a credit card, you have to pay back the purchase amount in a period specified by your issuer. Whereas, a debit card is just another channel for payment in which the amount is directly debited from your check in account.

The efficiency of debit cards and the convenience that it provides to the card holders are the reasons behind it being used extensively by people across many countries. Also, debit cards are accepted almost everywhere due to their global presence. Even for shopping online and ordering something over the internet, debit cards can be safely used.

CREDIT V/S DEBIT CARDS:

Credit cards and debit cards are two modes of payment that have become important realms of trade and commerce across all industries and sectors. The best part about both these payment channels is the common benefit of convenience that they provide to people all over the world. Both, credit cards as well as debit cards have emerged as efficient alternatives to cash and check payment in the modern scenario. The only question that persists is, 'Which of the two is better?'

Working of credit cards and debit cards

Talking about credit cards, credit is involved in this payment system just as the name suggests. The card holder swipes the card for the purchases that are made at the point of sales. The amount of the purchase is received by the merchant from the credit card issuing company. The issuing company provides the card holder with a time period in which the concerned amount is to be paid back. To sum it up, this is how the credit card system works everywhere.

Coming to debit cards, it is yet another payment mode where no credit is involved. The processing of payment in a debit card system is quite similar to the way in which it works for the credit cards. The card holder has to swipe the debit card at the point of sales in order to pay for the purchases and then the respective amount is transferred to the merchant's account. The only difference as compared to credit cards is the fact that the money which is transferred completely belongs to the card holder; the issuing company is not paying any money on behalf of the card holder. This is the way in which a debit card payment is processed.

Comparing the two

While using a credit card, a benefit that it provides is the grace period within which the payments are to be made. But on the other hand, if the

dues are not paid off by the card holder before the due date, an interest is charged on the amount taken as credit. In case of debit cards, the amount that is paid or rather transferred to the merchant's account totally belongs to the card holder. There is no credit involved in the transaction, so, there is no question of interest charges arising. But, because there is no credit given to the card holder, only the balance amount in the account can be utilized. Whereas, unlike debit cards, a credit card holder is provided with a credit limit.

Another difference between credit and debit cards is the system of cash advances. A credit card holder can take cash advances against the credit card. But, in this transaction, the interest on the amount borrowed as an advance starts immediately. On the other hand, the debit card can also be used as an ATM card in most cases. In this way, cash can be withdrawn from the ATM whenever required and without any interest at all. Also, a debit card holder can take secured loans against the debit card for a short period of time during an emergency requirement of cash. After the given time span to pay back these loans, interest is charged as per the decided rate of interest.

An advantage of debit cards is the fact that anyone can apply for one even in case of bad credit. The credit rating and score of the applicant does not come into question when acquiring a debit card. Whereas, while applying for a credit card the issuing company checks the credit history and rating of the customer. If the required parameters are matched by the applicant, the credit card is approved. Another point associated with the credit rating emerges when the card holder fails to pay off credit card bills even after the grace period. This situation has an adverse effect on the credit history of the card holder which can prove to be a hindrance to acquire loans or mortgage in the future. As there is no involvement of credit in debit cards, the possibility of credit rating being downgraded is very less likely.

A common benefit that can be found in both, credit cards as well as debit cards is the gifts and rewards. There are special types of credit cards called as reward credit cards which provide the card holders the opportunity to

earn reward points on purchases. These points can then be redeemed for various gifts such as hotel stays, air tickets, jewelry and much more. Such schemes are also available with some debit cards wherein the customer can earn points according to the spent amount and redeem them later. Even cash backs are provided by issuing companies as reward offers in both these cards.

Which is better – credit card or debit card?

Credit cards and debit cards both have few advantages as well as disadvantages. A credit card can be a better option for some people compared to debit cards. Whereas, some people might not qualify for a credit card and in this case the debit card is the only suitable option towards plastic transactions. Claiming one of these two as having an upper hand over the other is indeed very difficult. Whether to apply for a credit card or a debit card actually depends on the requirements of the customer and the situations facing that person. Both these cards stand tall and useful at their respective places and one of them cannot be termed as superior to the other.

CHAPTER 7: ATM

An **automated teller machine** (**ATM**), also known as a **Cash Point** (which is a trademark of Lloyds TSB), **Cash Machine** or sometimes a **Hole in the Wall** in British English, is a computerised telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. ATMs are known by various other names including *automatic banking machine*, *cash machine*, and various regional variants derived from trademarks on ATM systems held by particular banks.

Invented by IBM, the first ATM was introduced in December 1972 at Lloyds Bank in the UK. On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smart card with a chip, that contains a unique card number and some security information such as an expiration date or CVVC (CVV). Authentication is provided by the customer entering a personal identification number (PIN).

Using an ATM, customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cellphone credit. If the currency being withdrawn from the ATM is different from that which the bank account is denominated in (e.g.: Withdrawing Japanese Yen from a bank account containing US Dollars), the money will be converted at a wholesale exchange rate. Thus, ATMs often provide the best possible exchange rate for foreign travelers and are heavily used for this purpose as well

Features of ATM:

ATMs all share the same basic features: a card reader and keypad to enter PIN codes, a screen to guide the user through the process, a cash dispenser to dole out the cash, and a printer to generate receipts

Cash dispenser

By far the most important consideration is the cash dispenser. Most dispensers feature single-denomination cash cassettes that can hold 700 to 1,000 notes. Using £10 notes, this translates to a stash of £7,000 to £10,000 – enough to handle approximately 300 average transactions.

Most retail ATMs sold these days come equipped with a removable cash cassette, allowing you to reload the cassette from the security of a back office. Non-removable cassette designs have recently been introduced, which helps reduce ATM costs, but raises potential security risks as it requires you to stack replacement notes into the cash box in an open environment.

High-traffic locations like casinos, shopping centres or airports may want to look into larger cash cassettes that hold up to 2,000 notes and multiple denominations. This can help reduce how frequently the cash machine needs to be restocked.

Connectivity

Most ATMs sold these days run on Windows-based PCs. To do their work, they need to be plugged into a power outlet and connected to cash machine processing networks.

Usually, cash machines dial into these networks via a basic 56 kbps modem connection, which requires a dedicated phone line. However, if you have an existing computer network at your location, you may want to look into TCP/IP compatible and wireless ATMs. One

advantage of this design is that it can result in faster transactions since it is always on. It also eliminates the need to pay monthly phone charges. Wireless ATMs have begun to emerge, though, which gives you greater flexibility in placing the cash machine anywhere you want, not just against a wall.

ATM basics

The rest of the machine is fairly straightforward with little in the way of choices. Basic cash machines use a 14.5 cm (5.7 inch) black and white **screen**. Some cash machines offer colour screens as large as 30 cm (11 inches) that can be used for advertising. Larger screens can also be useful if your ATM will offer more than just cash dispensing.. Expect to pay £150 - £225 more for the colour version of the same size screen.

Cash machine **keypads** do not vary much either, and as well as numbers have Braille on each button. Touch screen money machines are available, but at a cost of thousands of pounds. Many retail locations therefore opt for standard keypad entry instead.

Finally, make sure that it is easy to load paper into the printer. Receipt printers are highly reliable, but still rank as the component most prone to breakdown.

Non-cash features

The trend towards convergence has not escaped the ATM industry. As a result, some models now allow users to add minutes to prepaid mobile phones and deposit cheques, and more features are always in development.

Cabinets & locks

Underwriters Laboratories, an independent product-safety testing organization, has come up with a standard for cash machine security known as UL 291. For models designed to store cash only during business hours, it says that an ATM should be able to withstand a physical attack for a minimum of five minutes. This should be enough time for the shop assistant or manager to call the police. A business-hour cash machine that meets the UL 291 standard weighs about 115 kilos (around 250 pounds).

Weighing in at about 320 kilos (around 700 lbs), more sturdy UL 291 Level 1 ATMs, also called 24-hour safes, can hold cash unattended and withstand up to 30 minutes of attack. This comes at a price though – expect to pay about £600 more for an ATM with a vault-class safe.

Locks to open the cabinet are available as combination or electronic locks. Combination locks may cost less, but electronic ones are preferred because the code can be entered in faster than manipulating a mechanical lock. Plus, the code can be changed whenever required for security purposes. Some electronic locks have a five-minute time delay to deter thieves who cannot wait around for the machine to open after entering the code.

No matter what type of cash machine you purchase, it should be secured to a surface – ideally, a concrete floor – with 7.5 cm to 10 cm (3- to 4-inch) bolts. Having a surveillance camera to monitor activity can also help make the ATM more secure. (Get **free quotes for video surveillance systems**.)

GPS

Newer machines are often equipped with satellite tracking devices. These GPS (Global Positioning System) units make the machines easier to track should they be stolen.

Dye packs

Your cash machine can be equipped with an exploding dye pack to mark the money, as well as startling the thief. Check with the dealer for this popular feature.

Triple DES

Make sure that the cash machine you purchase is Triple DES-compliant. Triple DES (Data Encryption Standard) is a method of protecting customers' personal identification numbers and should now be part of all ATMs.

Advantages & Disadvantages of atm:

- ATM supports voice, video and data allowing multimedia and mixed services over a
- single network.
- High evolution potential, works with existing, legacy technologies
- Provides the best multiple service support
- Supports delay close to that of dedicated services
- Supports the broadest range of burstiness, delay tolerance and loss performance through the implementation of multiple QoS classes
- Provides the capability to support both connection-oriented and connectionless traffic using AALs
- Able to use all common physical transmission paths like SONET.

- Cable can be twisted-pair, coaxial or fiber-optic
- Ability to connect LAN to WAN
- Legacy LAN emulation
- Efficient bandwidth use by statistical multiplexing
- Scalability
- Higher aggregate bandwidth
- High speed Mbps and possibly Gbps

ATM disadvantages

- Flexible to efficiency's expense, at present, for any one application it is usually possible to find a more optimized technology
- Cost, although it will decrease with time
- New customer premises hardware and software are required

  Competition from other technologies -100 Mbps FDDI, 100 Mbps Ethernet and fast Ethernet
- Presently the applications that can benefit from ATM such as multimedia are rare
  The wait, with all the promise of ATM's capabilities many details are still in the standards process.

SECURITY:

Security

Security, as it relates to ATMs, has several dimensions. ATMs also provide a practical demonstration of a number of security systems and concepts operating together and how various security concerns are dealt with.

Physical

A Wincor Nixdorf Procash 2100xe Frontload that was opened with an angle grinder

Early ATM security focused on making the ATMs invulnerable to physical attack; they were effectively safes with dispenser mechanisms. A number of attacks on ATMs resulted, with thieves attempting to steal entire ATMs by ram-raiding. Since late 1990s, criminal groups operating in Japan improved ram-raiding by stealing and using a truck loaded with a heavy construction machinery to effectively demolish or uproot an entire ATM and any housing to steal its cash.

Another attack method, *plofkraak*, is to seal all openings of the ATM with silicone and fill the vault with a combustible gas or to place an explosive inside, attached, or near the ATM. This gas or explosive is ignited and the vault is opened or distorted by the force of the resulting explosion and the criminals can break in. This type of theft has occurred in the Netherlands, Belgium, France, Denmark, Germany and Australia. This type of attack can be completely prevented by using gas explosion prevention devices.[43]

Modern ATM physical security, per other modern money-handling security, concentrates on denying the use of the money inside the machine to a thief, by means of techniques such as dye packs and smoke canisters.

A common method is to simply rob the staff filling the machine with money. To avoid this, the schedule for filling them is kept secret, varying and random. The money is often kept in cassettes, which will dye the money if incorrectly opened.

Transactional secrecy and integrity

A Triton brand ATM with a dip style card reader and a triple DES keypad

The security of ATM transactions relies mostly on the integrity of the secure cryptoprocessor: the ATM often uses commodity components that are not considered to be "trusted systems".

Encryption of personal information, required by law in many jurisdictions, is used to prevent fraud. Sensitive data in ATM transactions are usually encrypted with DES, but transaction processors now usually require the use of Triple DES. Remote Key Loading techniques may be used to ensure the secrecy of the initialization of the encryption keys in the ATM. Message Authentication Code (MAC) or Partial MAC may also be used to ensure messages have not been tampered with while in transit between the ATM and the financial network.

Customer identity integrity

A BTMU ATM with a palm scanner (to the right of the screen)

There have also been a number of incidents of fraud by Man-in-the-middle attacks, where criminals have attached fake keypads or card readers to existing machines. These have then been used to record customers' PINs and bank card information in order to gain unauthorized access to their accounts. Various ATM manufacturers have put in place countermeasures to protect the equipment they manufacture from these threats.

Alternate methods to verify cardholder identities have been tested and deployed in some countries, such as finger and palm vein patterns, iris, and facial recognition technologies. However, recently[when?], cheaper mass production equipment has been developed and is being installed in machines globally that detect the presence of foreign objects on the front of ATMs, current tests have shown 99% detection success for all types of skimming devices.

Device operation integrity

ATMs that are exposed to the outside must be vandal and weather resistant

Openings on the customer-side of ATMs are often covered by mechanical shutters to prevent tampering with the mechanisms when they are not in use. Alarm sensors are placed inside the ATM and in ATM servicing areas to alert their operators when doors have been opened by unauthorized personnel.

Rules are usually set by the government or ATM operating body that dictate what happens when integrity systems fail. Depending on the jurisdiction, a bank may or may not be liable when an attempt is made to dispense a customer's money from an ATM and the money either gets outside of the ATM's vault, or was exposed in a non-secure fashion, or they are unable to determine the state of the money after a failed transaction. Bank customers often complain that banks have made it difficult to recover money lost in this way, but this is often complicated by the bank's own internal policies regarding suspicious activities typical of the criminal element.

Customer security

Dunbar Armored ATM Techs watching over ATMs that have been installed in a van

In some countries, multiple security cameras and security guards are a common feature. In the United States, The New York State

Comptroller's Office has criticized the New York State Department of Banking for not following through on safety inspections of ATMs in high crime areas.

Critics of ATM operators assert that the issue of customer security appears to have been abandoned by the banking industry; it has been suggested that efforts are now more concentrated on deterrent legislation than on solving the problem of forced withdrawals.

At least as far back as July 30, 1986, critics of the industry have called for the adoption of an emergency PIN system for ATMs, where the user is able to send a silent alarm in response to a threat. Legislative efforts to require an emergency PIN system have appeared in Illinois, Kansasand Georgia, but none have succeeded as of yet. In January 2009, Senate Bill 1355 was proposed in the Illinois Senate that revisits the issue of the reverse emergency PIN system. The bill is again resisted by the banking lobby and supported by the police.

In 1998 three towns outside of Cleveland Ohio, in response to an ATM crime wave, adopted ATM Consumer Security Legislation requiring that a 9-1-1 switch be installed at all outside ATMs within their jurisdiction. Since the passing of these laws 11 years ago, there have been no repeat crimes. In the wake of an ATM Murder in Sharon Hill, Pennsylvania, The City Council of Sharon Hill passed an ATM Consumer Security Bill as well, with the same result. As of July 2009, ATM Consumer Security Legislation is currently pending in New York, New Jersey, and Washington D.C.

In China, many efforts to promote security have been made. On-premises ATMs are often located inside the bank's lobby which may be accessible 24 hours a day. These lobbies have extensive CCTV coverage, an emergency telephone and a security guard on the premises. Bank lobbies that are not guarded 24 hours a day may also have secure doors that can only be opened from outside by swiping your bank card against a wall-mounted scanner, allowing the bank to identify who enters the building. Most ATMs will also display on-screen safety

warnings and may also be fitted with convex mirrors above the display allowing the user to see what is happening behind them.

Alternative uses

Two NCR Personas 84 ATMs at a bank in Jersey dispensing two types of pound sterling banknotes: Bank of England notes on the left, and States of Jersey notes on the right

Although ATMs were originally developed as just cash dispensers, they have evolved to include many other bank-related functions. In some countries, especially those which benefit from a fully integrated cross-bank ATM network (e.g.: Multibanco in Portugal), ATMs include many functions which are not directly related to the management of one's own bank account, such as:

- Deposit currency recognition, acceptance, and recycling
- Paying routine bills, fees, and taxes (utilities, phone bills, social security, legal fees, taxes, etc.)
- Printing bank statements
- Updating passbooks
- Loading monetary value into stored value cards
- Purchasing
  - Postage stamps.
  - Lottery tickets
  - Train tickets
  - Concert tickets
  - Movie tickets
  - Shopping mall gift certificates.
- Games and promotional features
- Fastloans
- CRM at the ATM
- Donating to charities

- Cheque Processing Module
- Adding pre-paid cell phone / mobile phone credit.
- Paying (in full or partially) the credit balance on a card linked to a specific current account.
- Transferring money between linked accounts (such as transferring between checking and savings accounts)
- Gold - "In London last week [in 2011] some smart businessmen launched the country's first gold ATM. Stick in your credit card or some cash, and the machine will swap your plastic or paper money for a small bar of the real stuff."

Increasingly banks are seeking to use the ATM as a sales device to deliver pre approved loans and targeted advertising using products such as ITM (the Intelligent Teller Machine) from Aptra Relate from NCR. ATMs can also act as an advertising channel for companies to advertise their own products or third-party products and services.

In Canada, ATMs are called *guichets automatiques* in French and sometimes "Bank Machines" in English. The Interac shared cash network does not allow for the selling of goods from ATMs due to specific security requirements for PIN entry when buying goods. CIBC machines in Canada, are able to top-up the minutes on certain pay as you go phones.

A South Korean ATM with mobile bank port and bar code reader

Manufacturers have demonstrated and have deployed several different technologies on ATMs that have not yet reached worldwide acceptance, such as:

- Biometrics, where authorization of transactions is based on the scanning of a customer's fingerprint, iris, face, etc. Biometrics on ATMs can be found in Asia.
- Cheque/Cash Acceptance, where the ATM accepts and recognise cheques and/or currency without using envelopes Expected to grow in importance in the US through Check 21 legislation.
- Bar code scanning
- On-demand printing of "items of value" (such as movie tickets, traveler's cheques, etc.)
- Dispensing additional media (such as phone cards)
- Co-ordination of ATMs with mobile phones
- Customer-specific advertising
- Integration with non-banking equipment

CHAPTER 8:

FRAUD

As with any device containing objects of value, ATMs and the systems they depend on to function are the targets of fraud. Fraud against ATMs and people's attempts to use them takes several forms.

The first known instance of a fake ATM was installed at a shopping mall in Manchester, Connecticut in 1993. By modifying the inner workings of a Fujitsu model 7020 ATM, a criminal gang known as The Bucklands Boys were able to steal information from cards inserted into the machine by customers.[84]

In some cases, bank fraud could occur at ATMs where by the bank accidentally stocks the ATM with bills in the wrong denomination, therefore giving the customer more money than should be dispensed.[85] The result of receiving too much money may be influenced by the card holder agreement in place between the customer and the bank.[86][87]

In a variation of this, WAVY-TV reported an incident in Virginia Beach of September 2006 where a hacker who had probably obtained a factory-default admin password for a gas station's white label ATM caused the unit to assume it was loaded with $5 USD bills instead of $20s, enabling himself—and many subsequent customers—to walk away with four times the money they said they wanted to withdraw.[88] This type of scam was featured on the TV series The Real Hustle.

ATM behavior can change during what is called "stand-in" time, where the bank's cash dispensing network is unable to access databases that contain account information (possibly for database maintenance). In order to give customers access to cash, customers may be allowed to withdraw cash up to a certain amount that may be less than their usual daily withdrawal limit, but may still exceed the amount of available money in their account, which could result in fraud.[89]

ATM lineup

A big queue at an ATM in Masalli, Azerbaijan

In an attempt to prevent criminals from shoulder surfing the customer's PINs, some banks draw privacy areas on the floor.

For a low-tech form of fraud, the easiest is to simply steal a customer's card. A later variant of this approach is to trap the card inside of the ATM's card reader with a device often referred to as

a Lebanese loop. When the customer gets frustrated by not getting the card back and walks away from the machine, the criminal is able to remove the card and withdraw cash from the customer's account.

Another simple form of fraud involves attempting to get the customer's bank to issue a new card and stealing it from their mail.[90]

Some ATMs may put up warning messages to customers to not use them when it detects possible tampering

The concept and various methods of copying the contents of an ATM card's magnetic stripe on to a duplicate card to access other people's financial information was well known in the hacking communities by late 1990.

In 1996 Andrew Stone, a computer security consultant from Hampshire in the UK, was convicted of stealing more than £1 million by pointing high definition video cameras at ATMs from a considerable distance, and by recording the card numbers, expiry dates, etc. from the embossed detail on the ATM cards along with video footage of the PINs being entered. After getting all the information from the videotapes, he was able to produce clone cards which not only allowed him to withdraw the full daily limit for each account, but also allowed him to sidestep withdrawal limits by using multiple copied cards. In court, it was shown that he could withdraw as much as £10,000 per hour by using this method. Stone was sentenced to five years and six months in prison.

By contrast, a newer high-tech method of operating sometimes called **card skimming** or **card cloning** involves the installation of a magnetic card reader over the real ATM's card slot and the use of a wireless surveillance camera or a modified digital camera to observe the user's PIN. Card data is then cloned onto a second card and the criminal attempts a standard cash withdrawal. The availability of low-cost commodity wireless cameras and card readers has made it a relatively simple form of fraud, with comparatively low risk to the fraudsters

In an attempt to stop these practices, countermeasures against card cloning have been developed by the banking industry, in particular by the use of smart cards which cannot easily be copied or spoofed by unauthenticated devices, and by attempting to make the outside of their ATMs tamper evident. Older chip-card security systems include the French Carte Bleue, Visa Cash, Mondex, Blue from American Express[94] and EMV '96 or EMV 3.11. The most actively developed form of smart card security in the industry today is known as EMV 2000 or EMV 4.x.

EMV is widely used in the UK (Chip and PIN) and other parts of Europe, but when it is not available in a specific area, ATMs must fallback to using the easy–to–copy magnetic stripe to perform transactions. This fallback behaviour can be exploited.[95] However the fallback option has been removed by several UK banks, meaning if the chip is not read, the transaction will be declined.

In February 2009, a group of criminals used counterfeit ATM cards to steal $9 million from 130 ATMs in 49 cities around the world all within a time period of 30 minutes.[96]

Card cloning and skimming can be detected by the implementation of magnetic card reader heads and firmware that can read a signature embedded in all magnetic stripes during the card production process. This signature known as a "MagnePrint" or "BluPrint" can be used in conjunction with common two factor authentication schemes utilized in ATM, debit/retail point-of-sale and prepaid card applications.

Another ATM fraud issue is ATM card theft which includes credit card trapping and debit card trapping at ATMs. Originating in South America this type of ATM fraud has spread globally. Although somewhat replaced in terms of volume by ATM skimming incidents, a re-emergence of card trapping has been noticed in regions such as Europe where EMV Chip and PIN cards have increased in circulation

CHAPTER 9: MOBILE BANKING

Mobile banking (also known as M-Banking, mbanking, SMS Banking) is a term used for performing balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device such as a mobile phone or Personal Digital Assistant (PDA). The earliest mobile banking services were offered over SMS. With the introduction of the first primitive smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers

Mobile banking business models

A wide spectrum of Mobile/branchless banking models is evolving. However, no matter what business model, if mobile banking is being used to attract low-income populations in often rural locations, the business model will depend on banking agents, i.e., retail or postal outlets that process financial transactions on behalf telcos or banks. The banking agent is an important part of the mobile banking business model since customer care, service quality, and cash management will depend on them. Many telcos will work through their local airtime resellers. However, banks in Colombia, Brazil, Peru, and other markets use pharmacies, bakeries, etc.

These models differ primarily on the question that who will establish the relationship (account opening, deposit taking, lending etc.) to the end customer, the Bank or the Non-Bank/Telecommunication Company (Telco). Another difference lies in the nature of agency agreement between bank and the Non-Bank. Models of branchless banking can be classified into three broad categories - Bank Focused, Bank-Led and Nonbank-Led.

Bank-focused model

The bank-focused model emerges when a traditional bank uses non-traditional low-cost delivery channels to provide banking services to its existing customers. Examples range from use of automatic teller machines (ATMs) to internet banking or mobile phone banking to provide certain limited banking services to banks' customers. This model is additive in nature and may be seen as a modest extension of conventional branch-based banking.

Bank-led model

The bank-led model offers a distinct alternative to conventional branch-based banking in that customer conducts financial transactions at a whole range of retail agents (or through mobile phone) instead of at bank branches or through bank employees. This model promises the potential to substantially increase the financial services outreach by using a different delivery channel (retailers/ mobile phones), a different trade partner (telco / chain store) having experience and target market distinct from traditional banks, and may be significantly cheaper than the bank-based alternatives. The bank-led model may be implemented by either using correspondent arrangements or by creating a JV between Bank and Telco/non-bank. In this model customer account relationship rests with the bank

Non-bank-led model

The non-bank-led model is where a bank has a limited role in the day-to-day account management. Typically its role in this model is limited to safe-keeping of funds. Account management functions are conducted by a non-bank (e.g. telco) who has direct contact with individual customers.

Mobile Banking Services

Mobile banking can offer services such as the following:

Account Information

1. Mini-statements and checking of account history
2. Alerts on account activity or passing of set thresholds
3. Monitoring of term deposits
4. Access to loan statements
5. Access to card statements
6. Mutual funds / equity statements
7. Insurance policy management
8. Pension plan management
9. Status on cheque, stop payment on cheque
10. Ordering cheque books
11. Balance checking in the account
12. Recent transactions
13. Due date of payment (functionality for stop, change and deleting of payments)
14. PIN provision, Change of PIN and reminder over the Internet
15. Blocking of (lost, stolen) cards

Payments, Deposits, Withdrawals, and Transfers

1. Domestic and international fund transfers
2. Micro-payment handling
3. Mobile recharging

4. Commercial payment processing
5. Bill payment processing
6. Peer to Peer payments
7. Withdrawal at banking agent
8. Deposit at banking agent

A specific sequence of SMS messages will enable the system to verify if the client has sufficient funds in his or her wallet and authorize a deposit or withdrawal transaction at the agent. When depositing money, the merchant receives cash and the system credits the client's bank account or mobile wallet. In the same way the client can also withdraw money at the merchant: through exchanging sms to provide authorization, the merchant hands the client cash and debits the merchant's account.

Investments

1. Portfolio management services
2. Real-time stock quotes
3. Personalized alerts and notifications on security prices

Support

1. Status of requests for credit, including mortgage approval, and insurance coverage
2. Check (cheque) book and card requests
3. Exchange of data messages and email, including complaint submission and tracking
4. ATM Location

Content Services

1. General information such as weather updates, news
2. Loyalty-related offers
3. Location-based services

Based on a survey conducted by Forrester, mobile banking will be attractive mainly to the younger, more "tech-savvy" customer segment. A third of mobile phone users say that they may consider performing some kind of financial transaction through their mobile phone. But most of the users are interested in performing basic transactions such as querying for account balance and making bill payment.

Future functionalities in Mobile Banking

Based on the 'International Review of Business Research Papers' from World business Institute, Australia, following are the key functional trends possible in world of Mobile Banking.

With the advent of technology and increasing use of smartphone and tablet based devices, the use of Mobile Banking functionality would enable customer connect across entire customer life cycle much comprehensively than before. With this scenario, current mobile banking objectives

of say building relationships, reducing cost, achieving new revenue stream will transform to enable new objectives targeting higher level goals such as building brand of the banking organization. Emerging technolgy and functionalities would enable to create new ways of lead generation, prospecting as well as developing deep customer relationship and mobile banking world would achieve superior customer experience with bi-directional communications.

Illustration of objective based functionality enrichment In Mobile Banking

- Communication enrichment: - Video Interaction with agents, advisors.
- Pervasive Transactions capabilities: - Comprehensive “Mobile wallet”
- Customer Education: - “Test drive” for demos of banking services
- Connect with new customer segment: - Connect with Gen Y – Gen Z using games and social network ambushed to surrogate bank’s offerings
- Content monetization: - Micro level revenue themes such as music, e-book download
- Vertical positioning: - Positioning offerings over mobile banking specific industries
- Horizontal positioning: - Positioning offerings over mobile banking across all the industries
- Personalization of corporate banking services: - Personalization experience for multiple roles and hierarchies in corporate banking as against the vanilla based segment based enhancements in the current context.
- Build Brand: - Built the bank’s brand while enhancing the “Mobile real estate”.

CHAPTER 10:

HOW E-BANKING EASES OUR LIFE

Bill payment service

Each bank has tie-ups with various utility companies, service providers and insurance companies, across the country. You can facilitate payment of electricity and telephone bills, mobile phone, credit card and insurance premium bills.

To pay your bills, all you need to do is complete a simple one-time registration for each biller. You can also set up standing instructions online to pay your recurring bills, automatically. One-time standing instruction will ensure that you don't miss out on your bill payments due to lack of time. Most interestingly, the bank does not charge customers for online bill payment.

Fund transfer

You can transfer any amount from one account to another of the same or any another bank. Customers can send money anywhere in India [Images]. Once you login to your account, you need to mention the payees's account number, his bank and the branch. The transfer will take place in a day or so, whereas in a traditional method, it takes about three working days. ICICI Bank says that online bill payment service and fund transfer facility have been their most popular online services.

Credit card customers

Credit card users have a lot in store. With Internet banking, customers can not only pay their credit card bills online but also get a loan on their cards. Not just this, they can also apply for an additional card, request a credit line increase and God forbid if you lose your credit card, you can report lost card online.

Railway pass

This is something that would interest all the *aam janta*. Indian Railways has tied up with ICICI bank and you can now make your railway pass for local trains online. The pass will be delivered to you at your doorstep. But the facility is limited to Mumbai [Images], Thane, Nashik, Surat [Images] and Pune. The bank would just charge Rs 10 + 12.24 per cent of service tax.

Investing through Internet banking

Opening a fixed deposit account cannot get easier than this. You can now open an FD online through funds transfer. Online banking can also be a great friend for lazy investors.

Now investors with interlinked demat account and bank account can easily trade in the stock market and the amount will be automatically debited from their respective bank accounts and the shares will be credited in their demat account.

Moreover, some banks even give you the facility to purchase mutual funds directly from the online banking system.

So you need not worry about filling those big forms for mutual funds, they will now be just a few clicks away. Nowadays, most leading banks offer both online banking and demat account. However if you have your demat account with independent share brokers, then you need to sign a special form, which will link your two accounts.

Recharging your prepaid phone

Now you no longer need to rush to the vendor to recharge your prepaid phone, every time your talk time runs out. Just top-up your prepaid mobile cards by logging in to Internet banking. By just selecting your operator's name, entering your mobile number and the amount for recharge, your phone is again back in action within few minutes.

Shopping at your fingertips

Leading banks have tie ups with various shopping websites. With a range of all kind of products, you can shop online and the payment is also made conveniently through your account. You can also buy railway and air tickets through Internet banking.

Internet banking versus traditional method

Inspite of so many facilities that Internet banking offers us, we still seem to trust our traditional method of banking and is reluctant to use online banking. But here are few cases where Internet banking will turn out to be a better option in terms of saving your money.

'Stop payment' done through Internet banking will not cost any extra fees but when done through the branch, the bank may charge you Rs 50 per cheque plus the service tax.

Through Internet banking, you can check your transactions at any time of the day, and as many times as you want to.

On the other hand, in a traditional method, you get quarterly statements from the bank and if you request for a statement at your required time, it may turn out to be an expensive affair. The branch may charge you Rs 25 per page, which includes only 30 transactions. Moreover, the bank branch would take eight days to deliver it at your doorstep.

If the fund transfer has to be made outstation, where the bank does not have a branch, the bank would demand outstation charges. Whereas with the help of online banking, it will be absolutely free for you.

As per the Internet and Mobile Association of India's report on online banking 2006, "There are many advantages of online banking. It is convenient, it isn't bound by operational timings, there are no geographical barriers and the services can be offered at a miniscule cost."

Security Precautions

Customers should never share personal information like PIN numbers, passwords etc with anyone, including employees of the bank. It is important that documents that contain confidential information are safeguarded. PIN or password mailers should not be stored, the PIN and/or passwords should be changed immediately and memorised before destroying the mailers.

Customers are advised not to provide sensitive account-related information over unsecured e-mails or over the phone. Take simple precautions like changing the ATM PIN and online login and transaction passwords on a regular basis. Also ensure that the logged in session is properly signed out.

CASE STUDY

HISTORY OF HDFC BANK:

HDFC Bank Limited (BSE: 500180, NSE: HDFCBANK, NYSE: HDB) is a major Indian financial services company based in India, incorporated in August 1994, after the Reserve Bank of India allowed establishing private sector banks. The Bank was promoted by the Housing Development Finance Corporation, a premier housing finance company (set up in 1977) of India. HDFC Bank has 1,986 branches and over 5,471 ATMs, in 996 cities in India, and all branches of the bank are linked on an online real-time basis. As of 30 September 2008 the bank had total assets of Rs.1006.82 billion.[3] For the fiscal year 2010-11, the bank has reported net profit of ₹3,926.30 crore (US$746 million), up 33.1% from the previous fiscal. Total annual earnings of the bank increased by 20.37% reaching at ₹ 24,263.4 crore (US$4.61 billion) in 2010-11.[4]

It is one of the Big Four banks of India, along with State Bank of India, ICICI Bank and Punjab National Bank—its main competitors.

HDFC Bank was incorporated in 1994 by Housing Development Finance Corporation Limited (HDFC), India's largest housing finance company. It was among the first companies to receive an 'in principle' approval from the Reserve Bank of India (RBI) to set up a bank in the private sector. The Bank started operations as a scheduled commercial bank in January 1995 under the RBI's liberalisation policies.

Times Bank Limited (owned by Bennett, Coleman & Co. / Times Group) was merged with HDFC Bank Ltd., in 2000. This was the first merger of two private banks in India. Shareholders of Times Bank received 1 share of HDFC Bank for every 5.75 shares of Times Bank.

In 2008 HDFC Bank acquired Centurion Bank of Punjab taking its total branches to more than 1,000. The amalgamated bank emerged with a base of about Rs. 1,22,000 crore and net advances of about Rs.89,000 crore. The balance sheet size of the combined entity is more than Rs. 1,63,000 crore

BUSINESS FOCUS OF HDFC BANK:

HDFC Bank deals with three key business segments. - Wholesale Banking Services, Retail Banking Services, Treasury. It has entered the banking consortia of over 50 corporates for providing working capital finance, trade services, corporate finance, and merchant banking. It is also providing sophisticated product structures in areas of foreign exchange and derivatives, money markets and debt trading and equity research.

WHOLESALE BANKING SERVICES:

Blue-chip manufacturing companies in the Indian corp to small & mid-sized corporates and agri-based businesses. For these customers, the Bank provides a wide range of commercial and transactional banking services, including working capital finance, trade services, transactional services, cash management, etc. The bank is also a leading provider of[*clarification needed*] for its to corporate customers, mutual funds, stock exchange members and banks.

RETAIL BANKING SERVICES:

HDFC Bank was the first bank in India to launch an International Debit Card in association with VISA (VISA Electron) and issues the Mastercard Maestro debit card as well. The Bank launched its credit card business in late 2001. By March 2009, the bank had a total card base (debit and credit cards) of over 13 million. The Bank is also one of the leading players in the “merchant acquiring” business with over 70,000 Point-of-sale (POS) terminals for debit / credit cards acceptance at merchant establishments. The Bank is positioned in various net based B2C opportunities including a wide range of internet banking services for Fixed Deposits, Loans, Bill Payments, etc.

TREASURY:

Within this business, the bank has three main product areas - Foreign Exchange and Derivatives, Local Currency Money Market & Debt Securities, and Equities. These services are provided through the bank's

Treasury team. To comply with statutory reserve requirements, the bank is required to hold 25% of its deposits in government securities. The Treasury business is responsible for managing the returns and market risk on this investment portfolio.

DISTRIBUTION NETWORK:

HDFC Bank is headquartered in Mumbai. The Bank has an nationwide network of 2000 branches spread in 996 towns and cities across India. All branches are linked on an online real-time basis. Customers in over 500 locations are also serviced through Telephone Banking. The Bank has a presence in all major industrial and commercial centres across the country. Being a clearing/settlement bank to various leading stock exchanges, the Bank has branches in the centres where the NSE/BSE have a member base.

The Bank also has 5,998 networked ATMs across these towns and cities. Moreover, HDFC Bank's ATM network can be accessed by all domestic and international Visa/MasterCard, Visa Electron/Maestro, Plus/Cirrus and American Express Credit/Charge cardholders.

PRIVATE BANKING:

At HDFC Bank, we understand the value of your time and the opportunities it holds for you. Your personal financial investment needs might get overlooked, while you attend to your business and professional needs. In line with this,

we are pleased to offer to you a customised**Investment Advisory Service** for your existing portfolios and regular investable surpluses.

The service offers research – based advice to optimise returns on your investment portfolio across a range of financial instruments, keeping in line with your profile and investment objectives. Your existing portfolio is analysed to advice you on rebalancing to obtain an optimum asset mix. Here, a dedicated advisor regularly guides you through the evolution of new market opportunities, to evaluate and restructure your existing investment portfolio.

RECOGNITION FROM UTI MF & CNBC TV 18:

HDFC Bank has been awarded as the 'Best Performing National Financial Advisor Bank' at the UTI MF - CNBC TV18 Financial Advisor Awards 2009 - 2010 for the second time. These awards are one of India's most authoritative evaluations that recognize best financial advisors across the country and also the contribution they have made to the creation of wealth & to the distribution of productive financial advice.

RECOGNITION FROM FINANCIAL TIMES:

A yet another prestigious recognition for HDFC Bank is to be awarded as 'Best Private Bank in India' at the 2010 Global Private Banking Awards, presented by The Banker and the Professional Wealth Management (PWM) magazine brought out by the Financial Times. The award recognizes institutions that are successfully adapting to the ever- evolving economic landscape while fully satisfying their clients. The award focused on the alignment of interests between banks, their relationship managers and their clients. It's a deserving honor for our private banking business as amongst the other 74 submissions, we were judged by an expert panel of 7 industry professionals based in North America, Asia and Europe, reflecting the high standards and global presence of the award.

ATM SERVICES OF HDFC BANK:

24-hour access to Cash - Withdraw up to Rs.15, 000/- per day on your ATM Card and Rs. 25,000/- or more on your Debit Card (depending on the type of card held). Click here to know more on the daily cash withdrawal limits on your Debit Card.

Personalised Cash Withdrawals – Save time on your cash withdrawal transactions by pre-setting your preferred language / account / amount

View Account Balances & Mini-statements - Get details of the last 9 transactions on your account with the mini-statement, along with your account balance.

Change ATM PIN - Change your ATM PIN at any given point in time

Order a Cheque Book / Account Statement

HDFC Bank Credit Card Payment - Make payment of your HDFC Bank Credit Card dues using the ATM. The primary account of your Debit / ATM card will be debited.

Deposit Cash or Cheques - Deposit Cash or Cheques into your account without visiting the Branch. Available at Non-Branch HDFC Bank ATMs.

Transfer Funds between accounts – Transfer money between your accounts. Both accounts must be linked to your ATM / Debit Card. Maximum of 16 A/cs (Savings / Current) can be linked to a card.

Refill your Prepaid Mobile – Refill your prepaid mobile using Prepaid Mobile Refill service instantly. To know more about Prepaid Mobile Refill

Pay your Utility Bills - Pay your mobile, telephone and electricity bills through the ATM using BillPay, a comprehensive bill payments solution. To know more about Bill Pay

Cheque Status Enquiry - Get information about status of the cheque issued from your account.

NetBanking Password Request – Request for your NetBanking Password (IPIN) and the same will be dispatched to your recorded mailing address.

Registration for MobileBanking - Register yourself for Mobilebanking services through ATM.Click here to know more on MobileBanking services

There are no charges levied for use of other Bank cards on HDFC Bank ATMs for cash withdrawals and balance inquires.

40% Faster ATM:

HDFC Bank ATMs – 40% Faster*

Our fast paced world calls for faster cars, faster trains, faster planes. What about your bank?

HDFC Bank ATMs now allow you to withdraw cash 40% faster than other ATMs.

Here's how:

At the ATM, you can register your most frequently used cash withdrawal amount along with the account and preferred language as"MyFavourite". Thereafter, to withdraw the same amount, you only need to enter your pin, select"MyFavourite", and collect the cash. This reduces the number of screens you have to go through from 9 to 5, thus saving 40% of your time.

Easy isn’t it? So go ahead, walk into the nearest HDFC Bank ATM and experience 40% Faster ATMs for yourself.

How do I take advantage of this?

- The next time you withdraw your money from an HDFC Bank ATM you will be prompted to set your last

withdrawal amount as "MyFavourite" (i.e your preferred cash amount).
- If you agree, the cash withdrawal amount, account (in case of multiple accounts) and preferred language are registered for future transactions.

Thereafter, all you have to do is:

- Enter your PIN
- Select "MyFavourite"

- Collect you cash and card

You also have the freedom to change the amount or the account from which the cash is debited by following the regular withdrawal steps. The new amount and account number can be registered as "MyFavourite" overriding the earlier favourite transaction.

Make HDFC Bank ATMs your "MyFavourite" ATMs and withdraw cash 40% faster.

MOBILE BANKING IN HDFC BANK:

Your Mobile is now your bank! Now access your bank account and conduct a host of banking transactions through your mobile, with our unique MobileBanking service.You can check your account level information such as balance details, mini statement, cheque status as well as carry out financial transactions such as Funds Transfer using HDFC Bank MobileBanking service.

What can I do using HDFC Bank MobileBanking ?

Using our MobileBanking service, you can avail of a host of features at your finger tips

Perform funds transfers *

Get your balance details

Obtain your last 3 transaction details

Request a cheque book

Stop a cheque payment

Enquire cheque status

Request an account statement

Get Fixed Deposit details

Request for I-PIN generation

Request a cheque book

How does it work?

You can access HDFC Bank MobileBanking service using SMS on your mobile phone. You can access your account balance, mini statement,account statement etc using based SMS service.HDFC Bank MobileBanking is also available on ngpay wherein besides the above mentioned non financial transactions, you can also perform funds transfers and shop for select merchants and make payments using your HDFC Bank account.

For accessing your accounts using SMS service, you need to type the specific keyword for the transaction and send it to 5676712. You will receive the response in the form of a text message on your mobile phone screen within a few seconds.

MobileBanking on normal mobile phones can be conducted with normal SMS codes.

SMS to be sent	Transaction	Information received
bal	Balance Enquiry	Gives the available balance in the accounts (maximum upto five accounts) linked to your customer identification number (Cust ID). First five accounts according to the vintage will be taken into account.
txn	Mini Statement	Information on last three debits / credits made to your account.
cst <6 digit chq. no. >	Cheque Status Enquiry	Status of a cheque issued by you, whether paid / stopped.
chq	Cheque Book Request	Cheque Book is mailed to you (Non Payment-at-par).
stp <6 digit chq. no.>	Stop Cheque	Stops an issued cheque from being paid.
stm	Request for Account Statement	Statement of Accounts for the current period is mailed to your addresss (Current period is the period from the date of issue of statement till date).
bil	Bill Presentment	For Electricity and Telephone Bills, details will be displayed on your phone.
fdq	Fixed Deposit Enquiry	Get information on fixed deposits currently live with the bank (max. 5 accounts). Get the A/c No., Principal Amount, Rate of Interest, Maturity Date and Maturity Amount.
new <13 digit new a/c no.>	Change of Primary Account	Option of changing your Primary Account and carrying out banking transactions on this new account number.
ipin	Internet Banking password (IPIN) regeneration	Confirmation of the receipt of IPIN regeneration request. The IPIN is sent to the customer's mailing address.

NETBANKING IN HDFC:

What can I do using net banking?

- View Account Balances & Statements
- Download Account statement in pdf format for the past 5 months & current month.
- Transfer Funds between accounts
- Create Fixed Deposits Online
- Request a Demand Draft
- Pay Bills
- Order a Cheque Book
- Request Stop Payment on a Cheque
- And lots more

Why should I use Net banking?

Internet Banking is the most convenient and powerful way to manage your account.

- NetBanking is Real Time, giving you up-to-the-second details on your account.
- It can be accessed anytime, from anywhere, giving you complete control over your finances
- There are no queues to stand in, or turns to wait for. With NetBanking you are in control.
- HDFC Bank's NetBanking service is secure. Using industry-standard technologies and infrastructures, our service gives you peace of mind.

Net banking secure access:

HDFC Bank has implemented a new security solution for its customers - Secure Access

As your security is our top priority, we have initiated the Secure Access solution to protect you from fraudsters and hackers - who are looking to find a way to access your account.

Currently following transactions are covered under Secure Access

- Transfer from one HDFC Bank account to other HDFC Bank account holders (under distinct customer ID)
- Transfer from HDFC Bank account to any other Bank's account (also known as RTGS & NEFT)
- Visa CardPay
- Third Party Demand Draft through NetBanking

- HDFC Bank’s NetBanking login is now a two step process
  - Screen 1 is where you key-in your customer id
  - Screen 2 is for your password

This is done as a security measure. On putting in your customer id, our backend will verify if you are registered for Third Party Transfers.

- If you are not Third Party Transfer registered, the next screen will have a box to key-in your password.
- If, however, you are registered for Third Party Transfers you will shown an image and text that have been personalised by you during registration for Secure Access.

Secure Access is an additional layer of security that is essentially a solution protecting your account from hackers and fraudsters. Secure Access requires a one-time registration effort from your side.

To register for Secure Access you will need to:

Personalise an image

Personalise text

Answer 5 questions

Share two contact numbers

QUESTIONNAIRE:

- What is INTERNET Banking or @ E-Banking?

The systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. i.e. • PC • ATM • PDA • TT • BOOTH • Online banking.

- What are the types of E-Banking?

  Basic Level Services. Information About products and services, Simple Transactional Website. Submit Application, Instruction but don't offer Fund based Transaction, Fully Transactional Website. Transfer Funds, Payment of different bills, Subscribing to other products and sale and purchase of securities .

- Is e-banking really popular?

  Yes E-banking is really popular. According to an data around 21.5 millions people around the world use internet banking. E- banking eases their life.

- How Is Internet Currently Employed?

  Net Banking / e-Banking / Online Banking ♦ Statements / Transactions Summary ♦ Inter Branch Funds Transfer (all branches not e-banking enabled) ♦ Inter Bank Funds Transfer (all banks not enabled with this service) ♦ Bills Payment - Phone & Electricity ♦ Lead Generation for Deposits, Investment Plans, Credit Cards ν Marketing, Advertising, Brand Building.

- What are the products and services offered?

  Electronic Fund transfer In Electronic fund transfer mostly we use ATM and Bank's website. ν Personal Computer banking Account summary, Request cheque books, Payment of Utility bills ν Phone Banking By using phone you can make payments. ν Person to person payment It also known as email money transfer.

- What is third party transfer?

  Third-Party Transfer is a NetBanking feature for which you will need your unique Customer ID and IPIN (password). Login to NetBanking to confirm that your ID is active in our records.

- What is phone banking?

  PhoneBanking services are a combination of IVR and Agent offering, depending on the type of transaction. For all transactions that cannot be completed on the IVR such as reporting loss of cards, logging complaints, requests & queries, PhoneBanker-assisted services are available.

- How does a net safe card work?

NetSafe is a unique online secure payment solution from HDFC Bank. NetSafe enables you to generate a unique virtual card number using your physical Visa Debit/Credit or Mastercard Debit/Credit Card.Your physical card number is thus safe from getting exposed on the net.NetSafe is currently FREE for all HDFC Bank Visa and Mastercard Debit and Creditcard holders.

- What is the method of login for e-banking?
- Personalise an image
- Personalise text
- Answer 5 questions
- Share two contact numbers

CONCLUSION: