TATA CONSULTANCY SERVICES

Know your Payment Card

Suman Chatterjee
CITI Cards
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Topics Covered

- ❑ Introduction to Payment Cards
- ❑ Anatomy of Cards
- ❑ How Payment Cards Work
- ❑ Card Transaction Life Cycle
- ❑ Cards Issuing Business
- ❑ Marketing of Existing Account and Communicating with Cardholder
- ❑ Merchant Acquiring Business
- ❑ Loyalty Management
- ❑ Introduction to Chargeback
- ❑ Collections Overview
- ❑ Settlement and Association
- ❑ Card Fraud Overview
- ❑ Cards Fraud Detection
- ❑ Cards Fraud Analysis
- ❑ Cards Fraud Investigation and Prevention

Introduction to Payment Cards

What is a Credit Card ?

The dictionary defines a credit card as 'A card which can be used to obtain cash, goods or services up to a stipulated credit limit. The supplier is later paid by the credit card company which in due course is reimbursed by the credit card holder who will be charged interest at the end of the credit period if money is still owing.'

Entities in a Card Program

Card program and transaction involves multiple entities

- Issuing Bank
- Cardholder
- Merchant Bank or Acquiring Bank
- Merchant Establishment
- Payment Card Association

Introduction to Payment Cards

Benefits of Credit Card

To Merchant

- Increased Sales
- Established Credit
- No collections
- Easier accounting
- Promotions to a Target Group

• To Customer

- No Cash / No Account / Hassle Free
- Established Credit worthiness
- Credit Period
- Easy accounting
- Product benefits

• To Banks

- A cut in the transaction amount
- Fees
- Charges
- Means to sell other products

Card Terminology

- Point of Sale
- Electronic Data Capture Machine
- CVV/CVC/CSC/CID
- MOTO
- KYC
- Merchant Identification Number (MID) – Unique identification number assigned by the Acquiring Bank to each merchant.
- Terminal Identification Number (TID) -- Unique identification number assigned by the Acquiring bank to each merchant's terminal / EDC machine
- Merchant Category Group (MCG) - There are different types of merchants who accept credit card as a mode of payment. These merchants are divided into different categories based on the type of business they operate in. Eg. Airlines, Hotels,
- Merchant Category Code (MCC) - This is a unique code assigned to a group of merchants who fall in a particular category, e.g. 5944 refers to jewellery stores, 6010 – refers to ATM, etc
- Specially Designated National (SDN)
- Cash and Credit Limit
- Open-To-Buy (OTB)

Card Terminology – Expansion of few Terms

MCC Group	Description	MCC Code	Description
18	High Risk Personal Retail	5311	Department Stores
		5598	Snowmobile Dealers
		5621	Women's Ready To Wear Shoes
		5661	Shoe Stores
		5681	Furriers
		5698	Wig and Toupee Stores
		5944	Jewelry
		6211	Securities - Brokers and Dealers
		7230	Beauty and Barber Shops
		7261	Funeral Services
24	Service Providers	4829	Wire Transfers and Money Orders
		6010	Financial Institutions - Manual Cash Disbursements
		6011	Financial Institutions - Automated Cash Disbursements
		6012	Financial Institutions - Merchandise and Services
		6051	Non Financial Institutions - Foreign Currency, Money Orders, Scrip, and Travelers' Checks (not Wire Transfers)

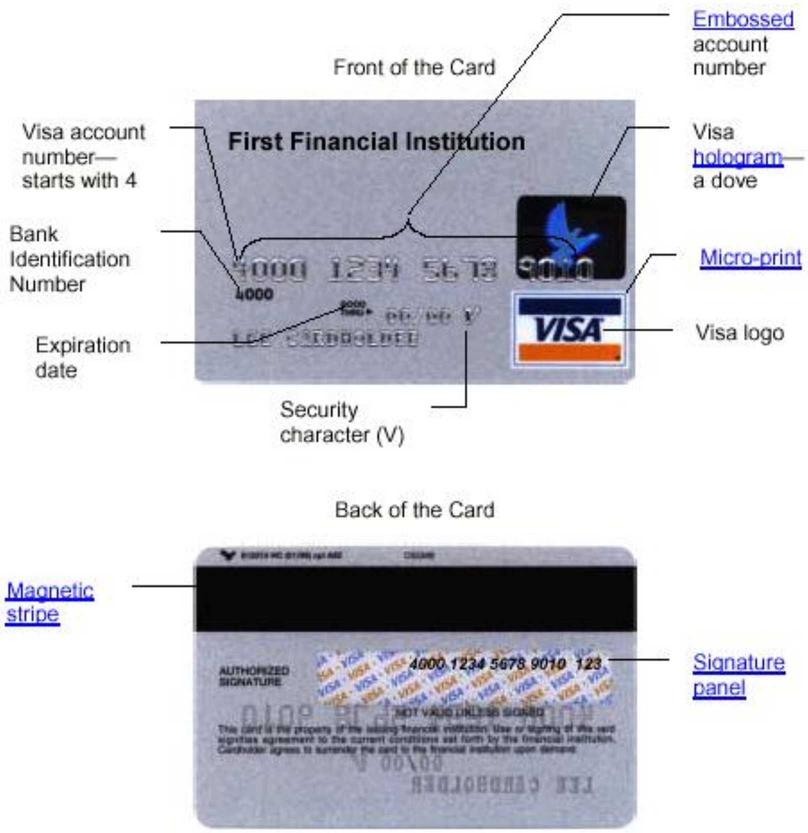
Types of Cards

- Debit card
- Credit card/Bank card
- Corporate Card
- Charge card
- Affinity cards
- Private Label cards
- Smart Cards
- Co Branded Cards
- Virtual Cards

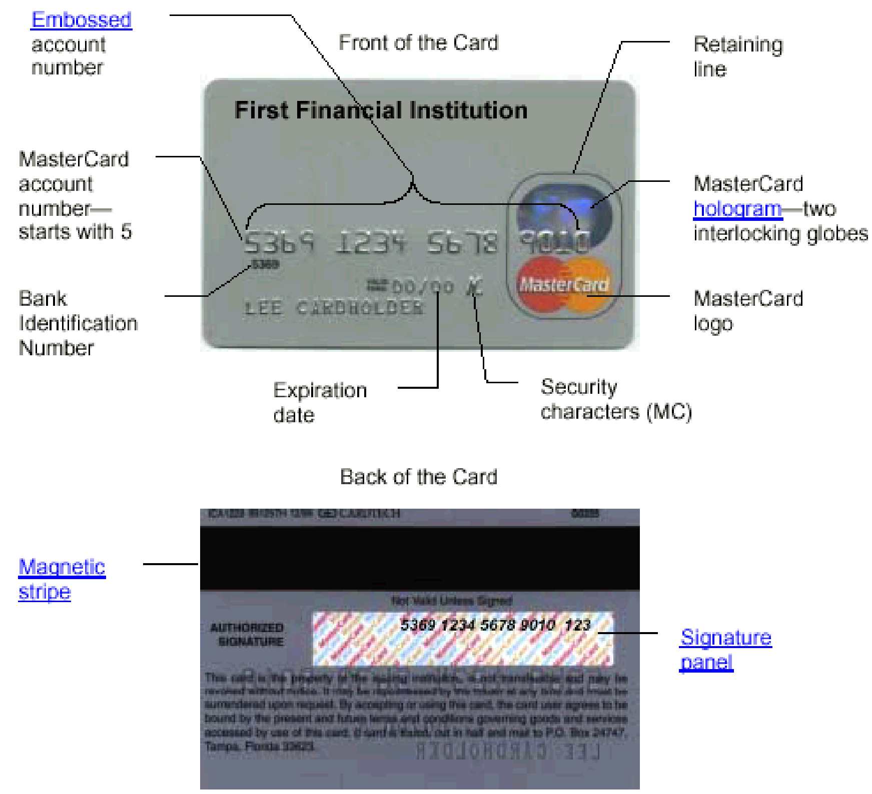
Anatomy of Cards

Anatomy of Cards

VISA Card



Master Card



Anatomy of Cards

- Track 1
  - ✓ Track 1 is encoded at 210 bits per inch
  - ✓ It can hold up to 79 characters
  - ✓ This track includes information about the name, PAN(Permanent Account Number) , country code, expiry date of the card
- Track 2
  - ✓ Track 2 is encoded at 75 bits per inch
  - ✓ It can hold upto 40 characters
  - ✓ This track includes information about the name, PAN(Permanent Account Number) , country code(optional), expiry date
- Track 3
  - ✓ Track 3 is encoded at 210 bits per inch
  - ✓ It can hold up to 105 characters
  - ✓ Track 3 is basically is a read and write track. It can store information regarding account balance on the card.

EMV (Europay, MasterCard and Visa)

What is EMV Card ?

EMV is an open-standard set of specifications for smart card payments and acceptance devices. The EMV specifications were developed to define a set of requirements to ensure interoperability between chip-based payment cards and terminals. EMV chip cards contain embedded microprocessors that provide strong transaction security features and other application capabilities not possible with traditional magnetic stripe cards.

Where has EMV been adopted?

Eighty countries globally are in various stages of EMV chip migration, including Canada and countries in Europe, Latin America and Asia. According to EMVCo, approximately 1.5 billion EMV cards have been issued globally and 21.9 million POS terminals accept EMV cards as of the end of 2011.

Why are countries migrating to EMV?

Issuers around the world are including chips in bank cards and merchants are moving to EMV-compliant terminals to increase security and reduce fraud resulting from counterfeit, lost and stolen cards.

Credit Card Number Anatomy – Major Industry Identifier

MII Digit Value	Issuer Category
0	ISO/TC 68 and other industry segments
1	Airlines
2	Airlines and other industry segments
3	Travel and Entertainment and banking/financial
4	Banking and Financial
5	Banking and Financial
6	Merchandizing and Franchising and Banking/financial
7	Petroleum
8	Healthcare, Telecommunications and Other industry segments
9	National Assignment

Credit Card Number – Issuer Identifier

Issuer	Identifier	Card Number Length
Diner's Club	300xxx – 305xxx, 36xxxx, 38xxxx	14
American Express	33xxxx, 34xxxx, 37xxxx	15
Visa	4xxxxx	13, 16
MasterCard	51xxxx – 55xxxx	16
Discover	6011xx	16

If the MII digit is 9, then the next three digits of the issuer identifier are the 3-digit country codes defined in ISO 3166-1, and the remaining final two digits of the issuer identifier can be defined by the national standards body of the specified country in whatever way it wishes

Luhn Algorithm

It was designed to protect against accidental errors, not malicious attacks. Most credit cards and many government identification numbers use the algorithm as a simple method of distinguishing valid numbers from collections of random digits.

Checking [4617565300449027]

4	6	1	7	5	6	5	3	0	0	4	4	9	0	2	7	
x2	x1	x2	x1	x2	x1	x2	x1	x2	x1	x2	x1	x2	x1	x2	x1	
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
8	6	2	7	10	6	10	3	0	0	8	4	18	0	4	7	
8 +	6 +	2 +	7 +	1 +	6 +	1 +	3 +	0 +	0 +	8 +	4 +	9 +	0 +	4 +	7	= 66

$$66 = 6 \text{ mod } 10$$

Sum is 66 i.e. not a multiple of 10

Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Card No.	4	6	1	7	8	6	3	0	0	1	5	6	6	1	2	2
Odd Index multiplied by 2	8	6	2	7	16	6	6	0	0	1	10	6	12	1	4	2
If >= 9 then subtract from result	8	6	2	7	7	6	6	0	0	1	1	6	3	1	4	2

Sum is 60 i.e. multiple of 10

Limitation of Luhn Algorithm

❑ **What if adjacent digits are accidentally swapped (i.e. 34 becomes 43) somewhere in the number?**

The LUHN-10 method is not perfect in detecting swapped digits. Although swapping two adjacent digits will generally result in a checksum failure, there are cases which will not be detected.

it can be seen that the contribution of the digits 9 and 0 do not change with position. If the digits 9 and 0 are side-by-side and get swapped, their contribution to the total sum will be the same.

```
...  9   0...          ...  0   9...
... x1  x2...          ... x1  x2...
    --  --                 --  --
     9   0                  0  18
     9 + 0 = 9              0 +1+8 = 9
```

It can be argued that for all possible two digit values (00..99) there are 90 cases of two different digits side by side and that the algorithm will fail to detect swapped digits in two of these cases ('09' becomes '90', and '90' becomes '09'). Consequently, swapped digits will be detected 88 times out of 90 (97.8%).

Security Code – CVV and PIN

Card Verification Value2

CVV2 ensures data encoded is not altered

- CVV2 (Card Verification Value) for Visa and Discover or
- CVC2 (Card Validation Code) for MasterCard or
- CSC/CID/UCC for AMEX or
- CAV (Card Authentication Value) for JCB (JCB International Co)

Personal Identification Number

PIN identifies the Cardholder and the authenticity of transaction

How Payment Cards work ?

Basic of Cards – Entities in Card Program

- Issuer
- Cardholder
- Acquirer
- Merchant
- Association

Basic of Cards – Entities in Card Program

- **Issuer**
  - A Bank, which is a member of an association – Visa / MasterCard and has arrangement with a particular association to issue credit card under its brand name.
  - In the simplest terms, the credit card issuer lends money and manages the customer relationship.

- **Card Holder**
  - A person to whom a card issued by the issuing bank for his/her usage as a payment solution within the assigned credit limit.

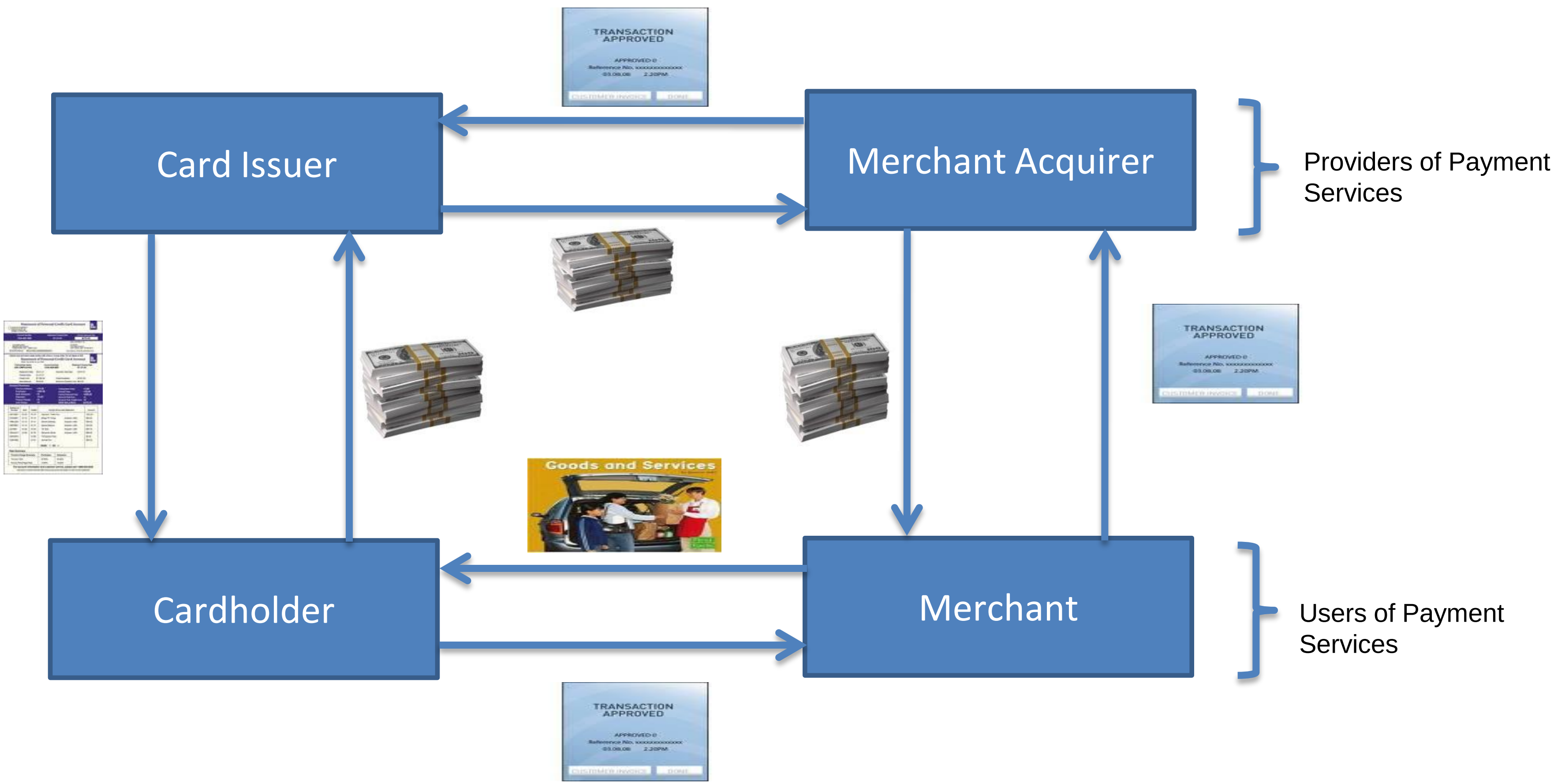
- **Acquirer**
  - A bank which is a member of an association – Visa / MasterCard and has arrangement with associations to settle the card payments. Acquiring members have tie up with merchant establishments to acquire payment card transaction at a discount rate and pay the transaction amount to merchant establishments.

Basic of Cards – Entities in Card Program

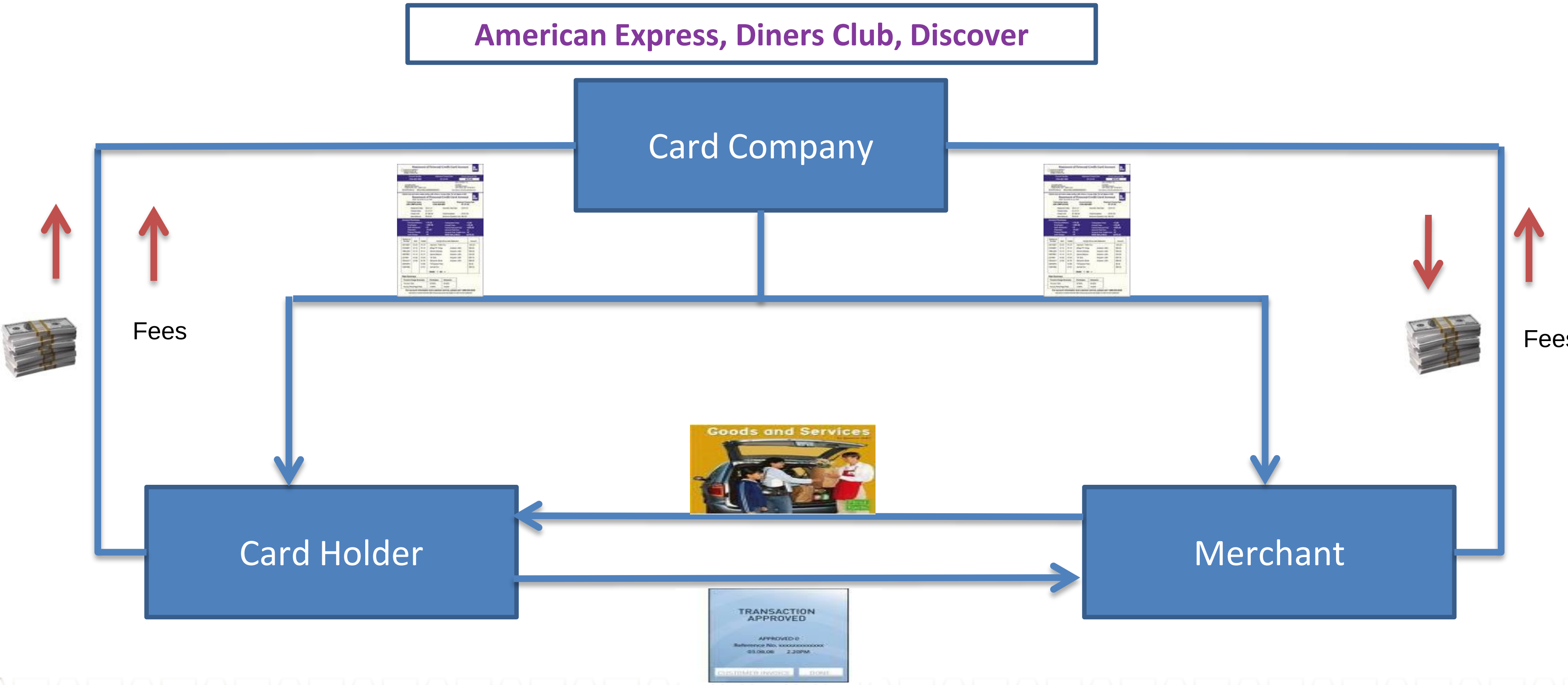
- **Merchant**
  - Commercial establishment, who accepts card payments and has settlement arrangement for such transactions with an acquiring bank.

- **Association**
  - An international body, which facilitates settlement of all international / domestic card payment transactions between Issuer and acquirer.
  - These associations have electronic infrastructures that enable the payment system to work from the point of sale to the customer's account.

Purchase transaction Process Flow – Four Party System



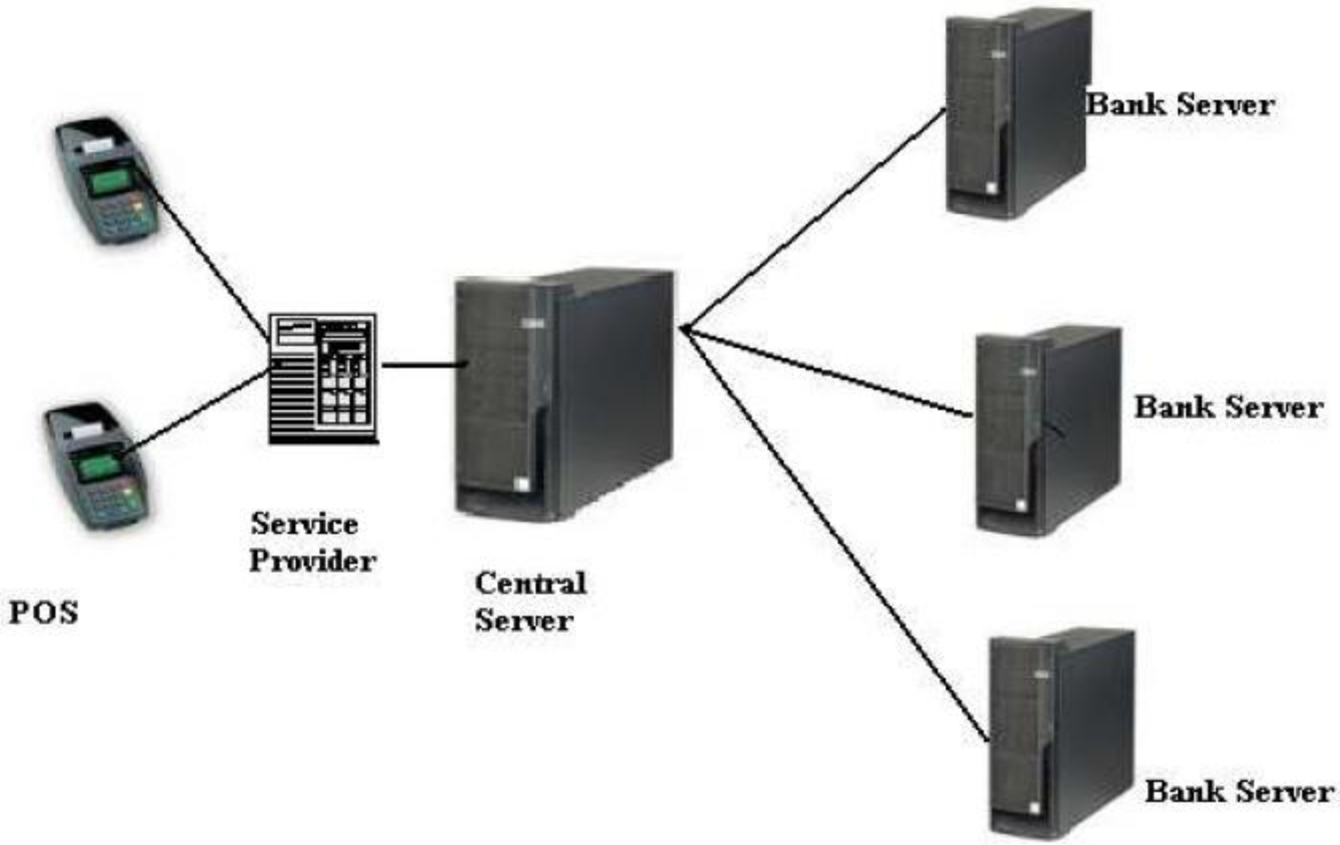
Three Party or Closed Loop Systems Flow



Technologies in Card payment Transaction

- ATM (Automated Teller Machine)
- POS (Point Of Sale equipment)
- Internet (Online Transactions)
- WAP (Wireless Access protocol)

A Simple POS Network

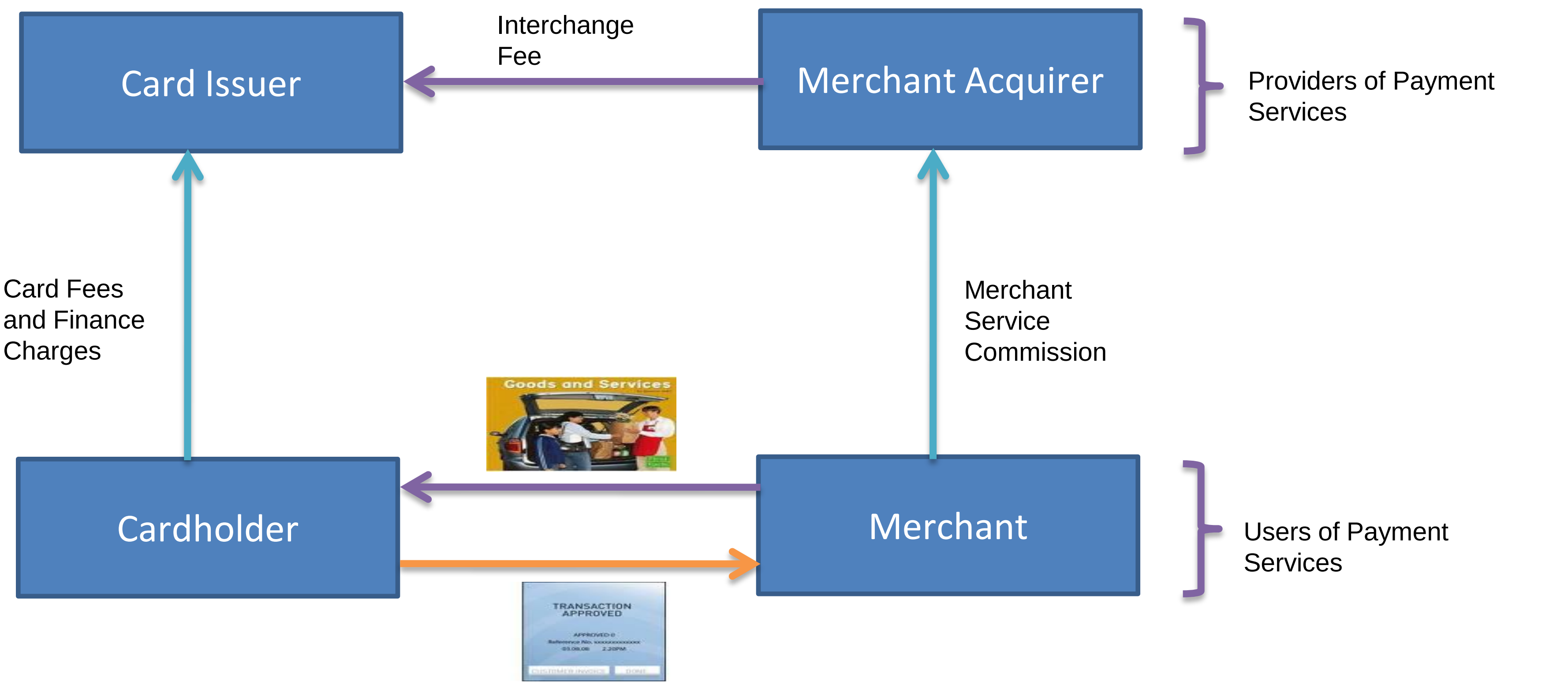


Point of Sale (POS) modes

Based on the type of card transaction, the POS mode is determined. The different POS modes are given below:

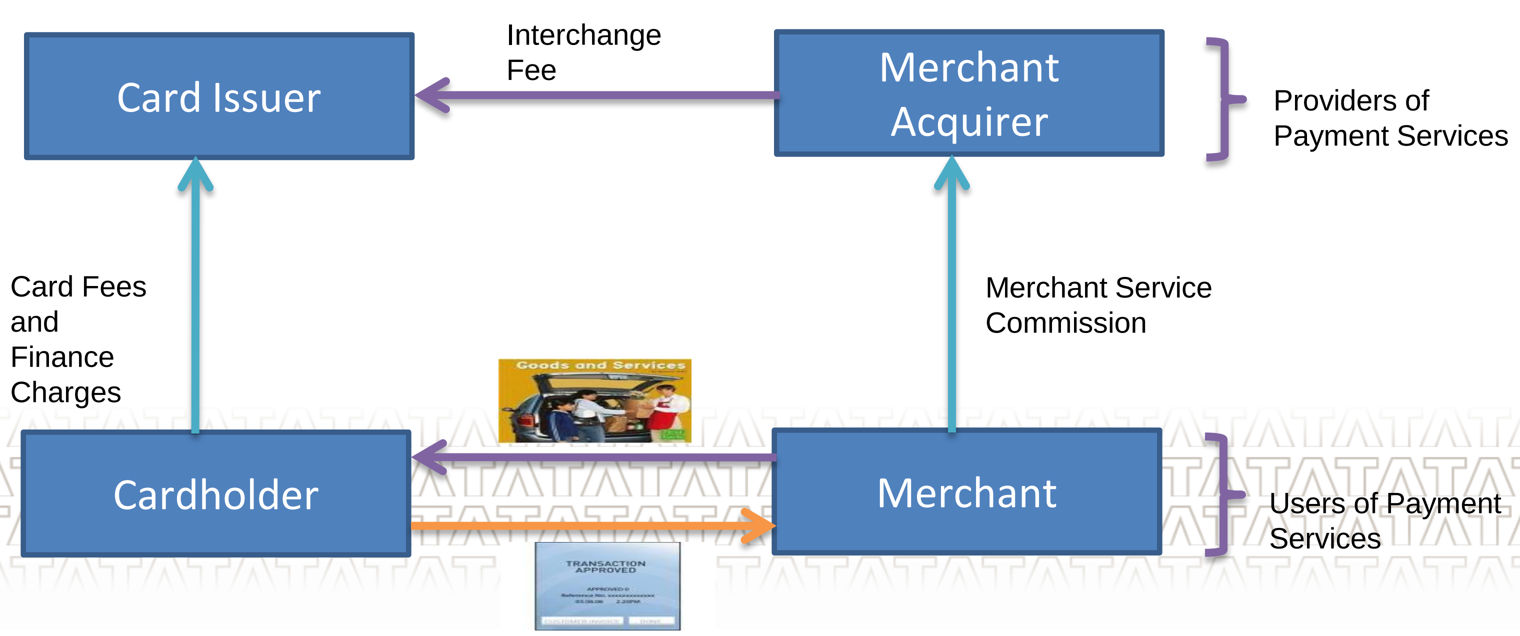
- POS 90
  - o Face to face transaction but includes only EDC. Both track 1 and track 2 are read by EDC.
- POS 01
  - o Non EDC includes Mail/Telephone Order, E-Com, Standing Instruction, Slug-In.
- POS 02
  - o Only Track 1 is captured, EDC transaction
- POS 81
  - o ECOM/ Internet
- POS 91
  - o Transactions done using Pay Pass/Contact less cards.
- POS 05
  - o Chip Card transactions – Normally Chip and PIN verified

Sources of Revenue



Sources of Revenue – An example

If a cardholder uses his / her card to make a purchase of Rs.100 at a merchant on say the 1st of Jan. The merchant submits the transaction to the acquiring bank. The acquiring bank checks for the validity of the transaction and if it's correct, the acquirer makes a payment to the merchant after deducting a certain % of money from the transaction amount. This % is determined at the time the merchant and acquiring bank enter into a contract. Normally this is around 1 to 2%. The acquirer, in parallel, sends the transaction details to the association for onward transmission to the issuing bank. The association then makes a payment to the Acquirer after deducting its commission. The association then forwards the transaction details to the issuing bank. The issuing bank reduces the commission that is due to it and pays the balance amount to the association and then posts the original transaction amount to the cardholder's account. The cardholder receives a statement every month with a list of all transactions that he has done. He then makes a payment for the total amount due from him.

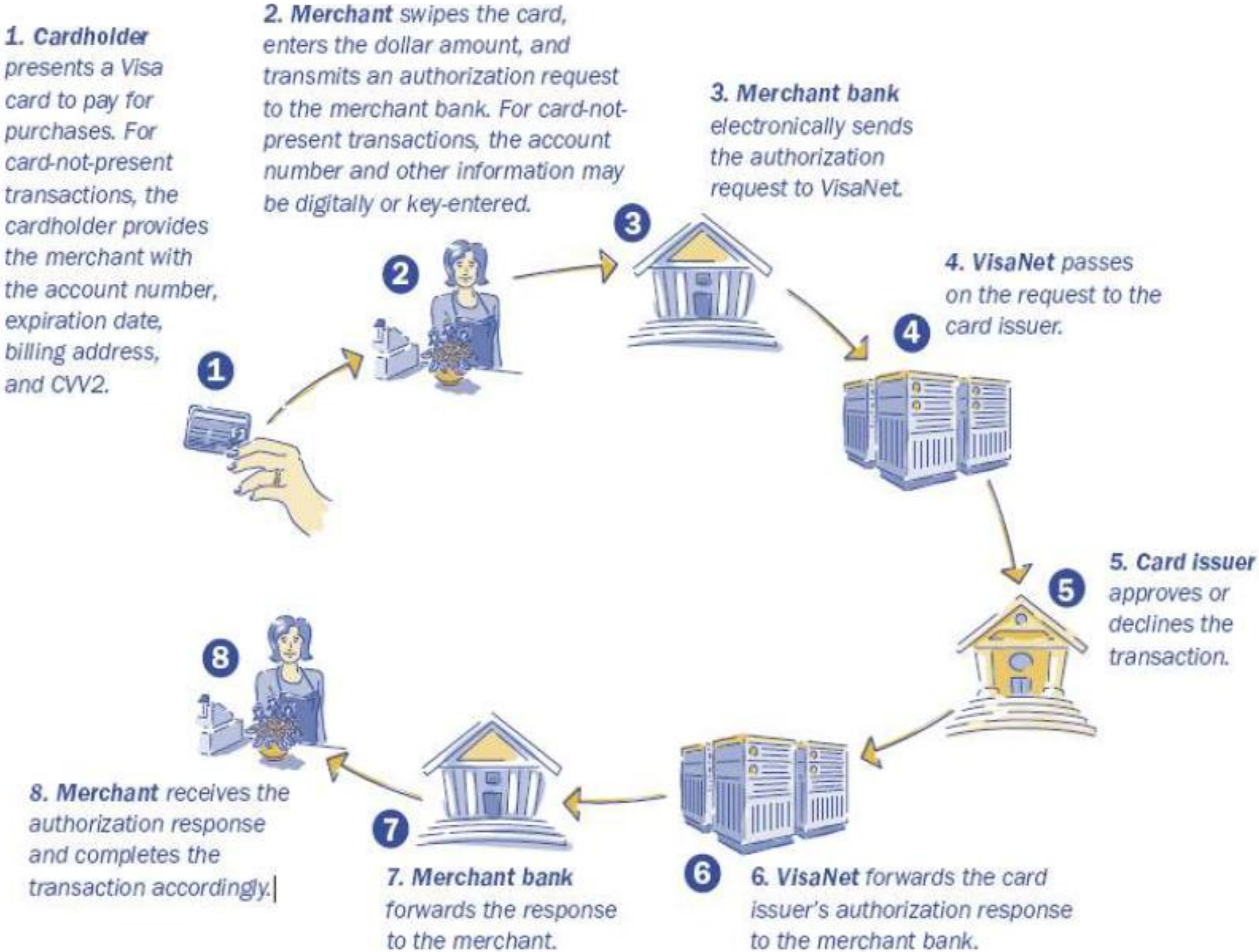


Transaction Life Cycle

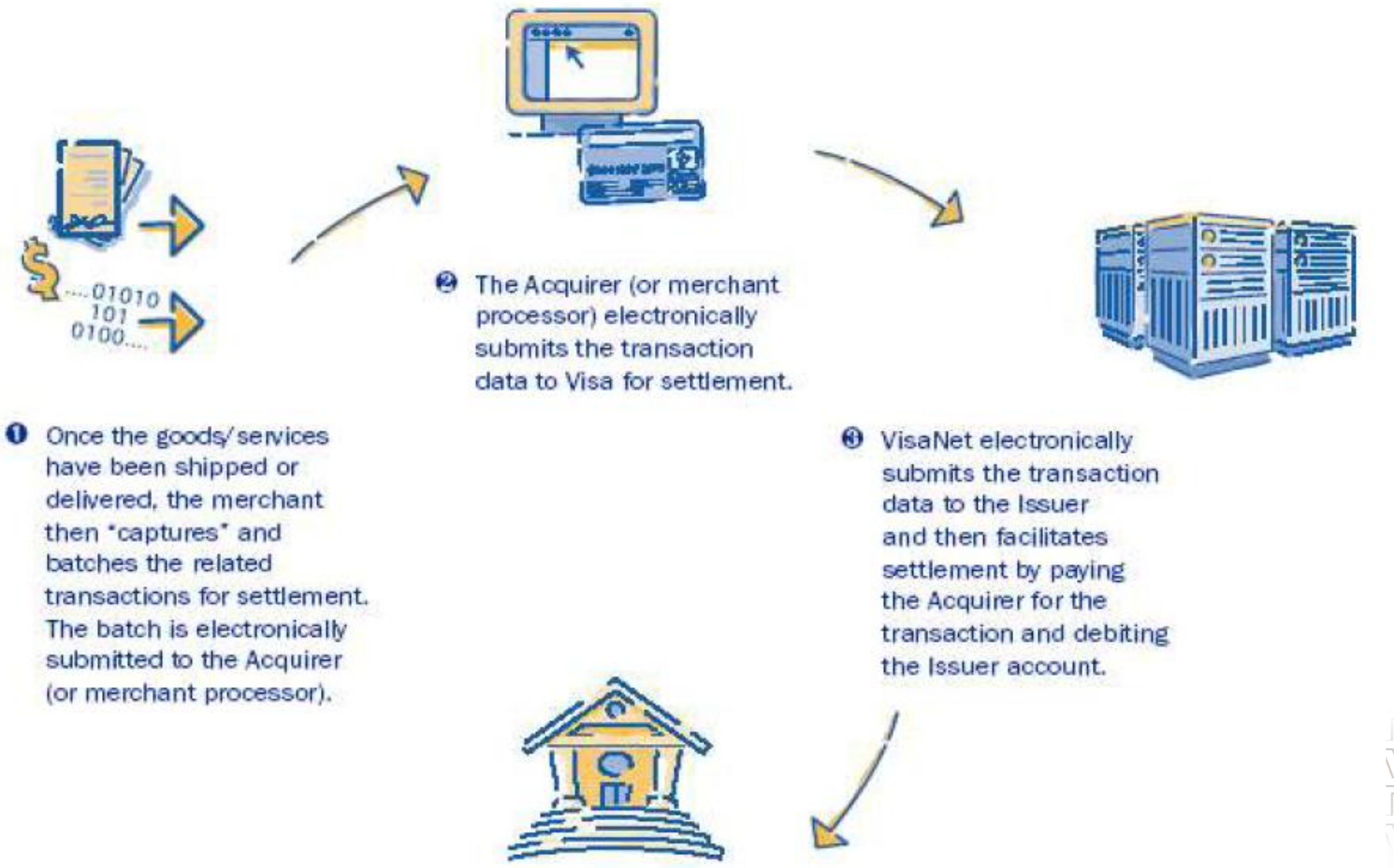
Card Transaction Life Cycle – Steps to know

- Authorization Processing
- Electronic Draft Capture
- Merchant Balancing
- Capture
- Clearing
- Interchange
- Settlement
- Merchant ACH
- Back End Processing

Transaction Life Cycle – Authorization (Diagrammatic Approach)



Transaction Life Cycle – Settlement and Clearance Process (Diagrammatic Approach)



Transaction Life Cycle – Settlement and Clearance Process (Diagrammatic Approach) Continued…

4 The Acquirer typically receives funds for a transaction within 24 hours. The merchant is usually credited within 48 hours of settlement, or as stated in the merchant agreement.

5 The Issuer posts the transaction to the cardholder account and sends a monthly statement to the cardholder.

Card Issuing Business

Business Function of Payment Card Industry

Payment Card industry function can be broadly divided into

- Issuing functions
- Acquiring functions
- Bank's Back office Operations

Steps involved in Issuing a Card

Issuers in simple language is Bank, Financial Institution or Payment Card Association which Issues card to the customer

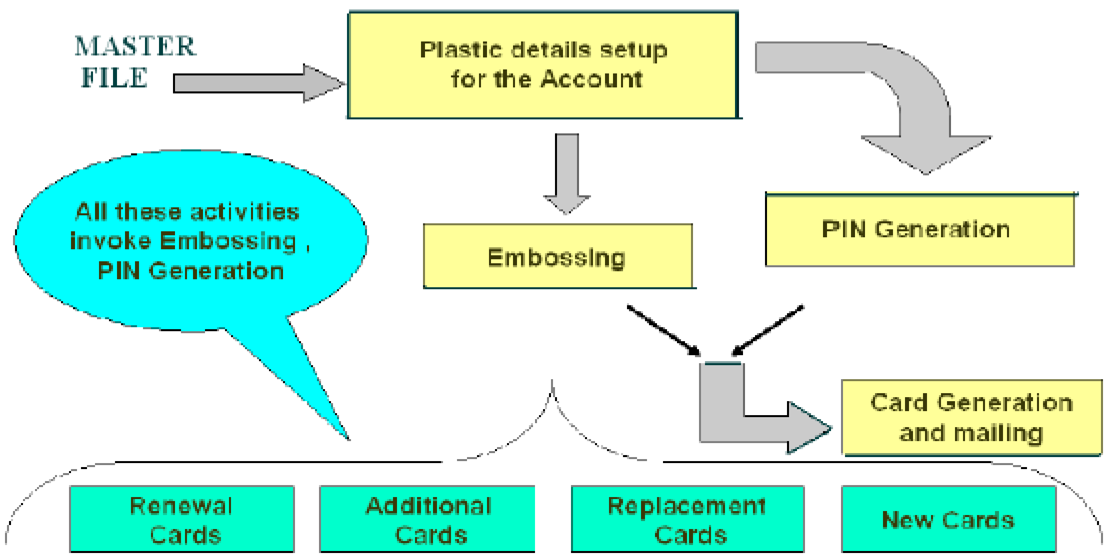
Issuing Function involves two parties

- ❑ Card Applicant
- ❑ Issuing Bank

1. Customer applies for new card, renewal or replacement
2. Bank processes the application to find out the creditworthiness of the applicant
3. If application is accepted, it is processed and plastic card is manufactured, account no, card no, PIN generated
4. Card is sent to Applicant with details like account no, PIN.
5. Issuer activates the card on the basis of acknowledgement or first time use of the card
6. Card holder uses the card at Merchant location or ATM
7. Transaction is forwarded to the Acquiring bank or Independent Sales Organization (e.g. VISA, MC) by merchant
8. Issuer maintains cardholder's account
9. Issuer posts the transactions to customer's accont depending on credit type, interest, billing cycle, limit allowed for the transaction
10. Issuer gets billed money from the cardholders

Application processing for Credit Card

- Application Data Capture
- Validation
- Negative list Check
- Credit Bureau Enquiry (e.g. FICO, Equifax, Experian for India CIBIL)
- Risk Check – Repayment capacity/ Repayment History etc.
- Fraud Check -
- Decisioning
- Scoring
- Credit Line Setup
- Account Creation
- Card Number Generation
- Card Delivery
- PIN generation



Different Ways to apply for Credit Card

Customer can apply for credit card via

- ✓ Internet – Applying online
- ✓ Phone – By calling customer care of the bank
- ✓ Paper based application – Applying through bank branch office.

Instant Approved Card – Customer applies online or on phone and approval takes few minutes or few hours. Applicant provides basic personal information on phone or fills up forms online and the card company will check creditworthiness by considering credit report online. It physically takes 5-7 working days to deliver the card to the customer. This process saves time, processing cost and cost of paper applications.

Instant Decision Card – This refers to a process where customer applies for card through internet and bank tries to make instant decision for approval/rejection of the card. This is different from Instant approved card as it allows bank to defer the decision until they can do some backend work where as incase of instant approval bank have to make decision in few minutes / hours mostly without backend processing.

Hence instant approval is faster than instant decision but it involves more risk.

Develop / Market of Issuer Product and Services

➢Payment card is a big business. Billions of people carry at least a card in their wallet. In spite of such widespread usage of cards, card issuers chase consumers for new cards by barrage of direct mail offers.

➢Card products business if managed properly is inherently profitable for card issuer.

➢Due to focus on credit card marketing, sophistication in marketing of cards has reached new heights.

➢The card companies use data driven customer marketing.

➢In Card marketing it is important to understand customer behavior, anticipate it, and adjust and refine the features and benefits of the card product

➢Four P’s are the pillar of marketing card products

- ✓ Product
- ✓ Price
- ✓ Placement
- ✓ Promotion

Card Product Development

For Payment Cards, understanding the consumer behavior is very important.

In financial services it is easy to understand consumer's attitude towards the product they use. If the product (bank account, debit card) involves consumer's money then consumers attitude is "it's my money, take care of it"

Conversely when the product in question involves bank's money (credit card, personal loan) the consumer's attitude is "it's not my money, I'll mange repayment"

Consumers use borrowed money to make large purchase than their own funds. e.g. to buy clothes people use debit card and to buy LCD TV credit card is used.

This was observed in the analysis of debit and credit card transaction volume at large bank.

Card Product Development Continued…

Based on the above analysis card issuers categorized the customers as below.

- Segmentation by Status
- Segmentation by Creditworthiness
- Segmentation by Endorsed Programs

Below table illustrates some basic product features or entitlements based upon a simple segmentation scheme based on income, home ownership, credit worthiness etc. Which can be assigned to a card product. This determines core product to be offered (debit or credit: Gold, platinum, Classic etc)

	Age	Income	Creditworthiness	Deposits	Home Ownership	ATM Usage
High		Classic/Gold credit card		Charge cards	Platinum card (best prices)	
Medium	Classic credit card		Classic/Gold credit card-low price			Gold debit card
Low	Debit/ ATM card		Debit card only		ATM card	

Card Pricing

The basic elements of payment card pricing includes

- Interest Rates
  - Interest rate for Purchase and Cash advances
  - Floors and Ceilings
  - Penalty Interest Rate
  - Promotional Rates
  - Finance Charge Calculation

- Fees
  - Annual Fees
  - Late Payment Fee
  - Over Limit Fee
  - Cash Advance Fee
  - Nuisance Fees

Other price components which plays important role in formulating pricing strategy include

- Grace Period
- Minimum Payment Calculation
- Minimum Finance Charges

Marketing of Existing Account and Communicating with Cardholder

Existing Account Marketing

- Issuers convincing customers to buy their card products is not the end of the sales process, in fact it is the beginning.

- Once issuer acquires a card account they have all the expenses involved in generating the sales, but no revenues.
- Issuers earn revenues and profits based on the number of card transactions, cash advances availed and revolving balances.
- Issuers will gather more information about the customers only after they acquire their card accounts and this give them a chance to use that information to personalize the card features in order to meet card members' objective.
- Issuers always have various modes of communication channels to interact with existing cardholders, thus reducing expenses.

Issuers focuses on three major areas when it come to marketing the existing accounts

1. Activation
2. Usage
3. Retention

Communicating with Cardholder

- Card Mailer – All legal disclosures, regulations, cared related matter like interest rate, fee details (if applicable), loyalty points. This gives a feel good factor to the cardholder that the decision he/she made.

- Welcome Kit – In addition to the card mailer issuer can provide a brochure which lists all other issuer offerings, their description along with the reason it may be desirable for the cardholder to purchase and the price of those offerings.

- Call to Activate – Calls initiated by cardholder provide an excellent opportunity for issuer to emphasize and re- emphasize the benefit of the product recently purchased by cardholder. Instead of simply offering cross-sell products issuers can have short survey of not more than 4-5 questions regarding their preferences for new products or the features they would like to have in their existing card products.

- Welcome Call – Calling a new customer shortly (after few days) after the card mailer and welcome kit are sent to see if the right cardholder has received the same. IT also provides a platform to address queries of customers and help them trust that the issuer has their best interest.

- Security Mailer – If no welcome call concept is there then this can be used

- First Transaction Letter – This is a new communication opportunity employed by some issuers. A brief letter is sent to the cardholder when the first debit transaction happens on the card. This is like a “Thank You” note.

Cardholder with Profitable Behavior and Target offer

Revolvers – To quantify these kind of customers, they are the cardholders who carried a balance and paid interest at least ten of thirteen months analyzed

- Paramount importance has to be given to create larger revolving balances while minimizing the associated credit risk
- Cardholder who would fall into this category should first be stratified by using several tools like credit score and behavior score, provided they are available.
- Offers or special benefits should be extended only to those set of customers who meet the expectations or exhibit acceptable risk characteristics
- Once the above activities are done, offers that will be extended to the customers should focus upon two key elements.
  - ✓ Price
  - ✓ Ease of moving balances from high priced product to credit-card (Balance Transfer facility)
- In many markets, issuers charge a small percentage of the balance transferred usually 0.5% to 1.5% upto a maximum $25 to $30. This helps to improve the profitability

Cardholder with Profitable Behavior and Target offer

Continued…

High Volume Transactors – To quantify these type of customers, they are the cardholders who had at least twice the portfolio transaction volume in half or more of the thirteen months analyzed and also paid NO finance charges in any month.

- As these customers spend a lot using their cards, issuers must focus upon offering various loyalty schemes
- Assuming that such high volume transactors are already enrolled in lotyalty programs, then issuers must come up with an offer which rewards incremental volume with higher point rewards than normal.
- If high volume transactors are not enrolled for any loyalty schemes, then issuers should offer one with short term incentives for incremental volume.
- In many markets, such loyalty schemes are offered to cardholders by charging participation fee on an annual basis. This will be another source of income for the card issuers.

Cardholder with Profitable Behavior and Target offer

Continued…

Episodic Revolvers – These cardholders carries a balance and paid interest in three to nine of the thirteen months analyzed with at least two of the three months in which finance charges were paid being consecutive,

- Revolving episodes can be attributed towards events such as an automotive emergency, or buying/moving into a new house etc.,
- Designing marketing strategies and promotional schemes is very difficult as predicting episodic revolvers next event is impossible.
- In some markets, episodic revolvers are lured by giving them "Special Checks" which they can write for large purchases and are posted to their credit card account at low rates compared to normal.
- Special checks are issued by card issuers for a limited period of time; let's say, six months and also have a constraint on the minimum amount, usually $500, for episodic revolvers to enjoy low interest rates.

Cardholder with Unprofitable Behavior and Target Offer

Inactives – These cardholders are very inactive and have no transactions done on their cards in any channel from one month to ninety days

- The way to motivate these cardholders to use the card to offer "Cash Back" offers
- Cash rebate ranging from 3%-5% of the transactions charged can be used as bait to impress cardholders falling under this category.
- Issuers should display the rebated amount as "Credit" item in the bill statement. This gives a clear indication to cardholder to understand the benefits offered

Cardholder with Unprofitable Behavior and Target Offer

Continued…

Low Volume Transactors – These cardholders perform very limited activity on their cards exceeding not more than one or two transactions in quantity and not more than $100 - $150 (in a month). They also pay their balance in time generating no interest income for card issuer.

- These cardholders have very limited activity on their cards and hence "Cash Back" offers can also lure this cardholder segment

- Other popular strategy that card issuers can implement is "Spend and Get" offer. It is an offer where cardholders are asked to meet a spend threshold for a defined period of time, for which they are credited with some fixed amount. For example, card issuers can notify them to spend minimum $500 in coming two months, so that they can get fixed amount (let's say $20) credited back to their account

- Apart from these two strategies, most customers falling under this segment might react favorably to enrolment in a loyalty program where they can earn points based on the transaction amount

Cardholder with Unprofitable Behavior and Target Offer

Continued…

Pay Downs – Cardholders falling under this category carry a revolving balance but do not make any new purchases using the card. They simply end up paying down their balance until they pay off the entire account

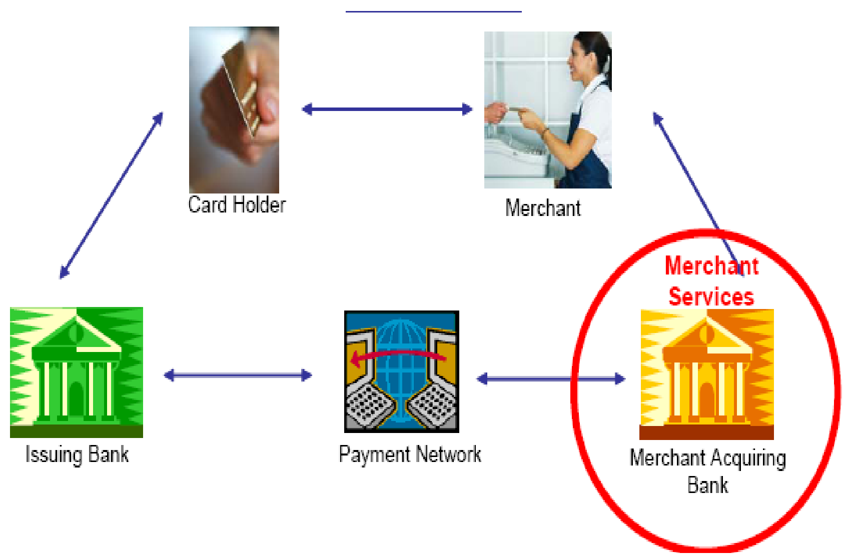
- Designing promotion strategies for these customers is very difficult, because they might have already decided to discontinue the use of this credit card and hence are just clearing the balances instead of making any new purchases

- Feasible "Balance Transfer" offers and "Cash Back" offers might lure these customers, but not guaranteed

Merchant Acquiring Business

Definition of Merchant Acquirer

- For bank-centered payment networks such as Visa and MasterCard, the merchant acquirer is defined as the member financial institution responsible for its merchant-customers' transactions with the network
- In addition to Visa and MasterCard, other network structures involve other acquiring models. Most significant among these are American Express and Discover. Unlike Visa and MasterCard, these two card networks are not based on a bank-member structure but, rather, operate as independent entities
- In simpler terms, a merchant acquirer is an entity or an organization which acquires the transaction of a merchant and facilitates the transaction till the settlement.



Functions and Objectives of Merchant Acquirer

Capturing - Capturing transactions and delivering them to the payment scheme (Visa or Master) is the prime function of the merchant acquirer.

Increase Merchant Base –Acquiring bank try to find out new customers [here customer means merchants] to increase its merchant base and to capture more transactions.

Increase Card Acceptance –To increase card acceptance acquiring bank should install more POS [point of sale] equipments.

Authorization of Transactions –Bank authorizes the transaction by forwarding requests to card associations.

Settlement of Transactions –Acquiring bank participate in clearing and settlement of payment in card transaction.

Merchant Account Maintenance and Support –Provide account maintenance and support service to merchant.

Functions and Objectives of Merchant Acquirer Continued…

Chargeback - Processing of charge backs [payments returned]

Transaction Management –This involves proper channel selection for speedy and correct transaction authorization and settlement.

Reduce Risk & Dispute-Acquirer also performs functions like risk assessment and works on proper dispute settlement mechanism.

Fraud Control and Monitoring- Merchant acquirer may provide fraud screening services if order is placed by mail or telephone.

Value Added Services - Value added services such as operating the retailer's loyalty scheme.

Application Processing for Merchant Account

- An application for credit card processing services (a merchant account) is not quite as straightforward as opening a checking account
- A merchant account is a form of line of credit that a processing bank (also known as acquiring bank, merchant bank or acquirer) is extending to the applicant
- When a merchant accept a card payment, the processor (merchant acquirer) will "acquire" it, typically at the end of the business day, and within a day or two will deposit the payment amount, after subtracting the interchange fee and its own processing cost, into merchant's designated bank account

Steps involved in Application Processing

- Merchant Account Application
- Personal Guarantee
- Articles of Incorporation
- Business License
- Business Financial Statements
- Personal Financial Statements
- Voided check

Steps involved in Application Processing

- By a bank or agent or network itself
- Credit checks and background investigations of the applicant business.
- Inspection of the business' physical location.
- Check the MATCH file (Member Alert to Control High-Risk Merchants).
- The Bank verifies the documents and evaluate the risk involved in the business
- Bank visits Merchant establishment and install terminal at Merchant location
- Provide Training to merchant staff on terminal usage
- Bank collect acknowledgment from the merchant
- Merchant is now ready to accept payment card

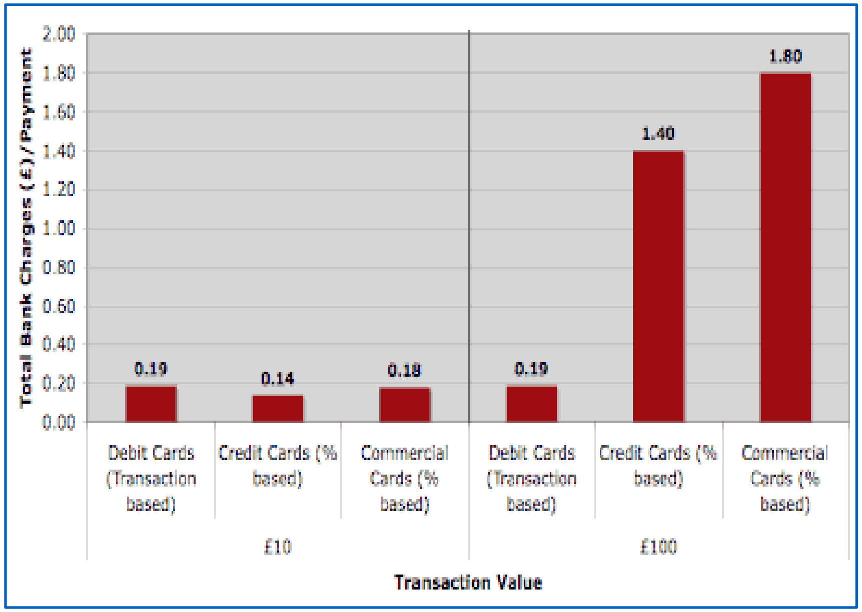
General Requirements
- Legal presence
- Physical presence
- Bank account in that country

Paperwork
- Application form.
- Personal guarantee
- Articles of Incorporation.
- Business license
- Voided check

High Risk Merchants
- Business financial statements.
- Personal financial statements.
- Processing statements.

How Merchants are charged by Payment Card Schemes?

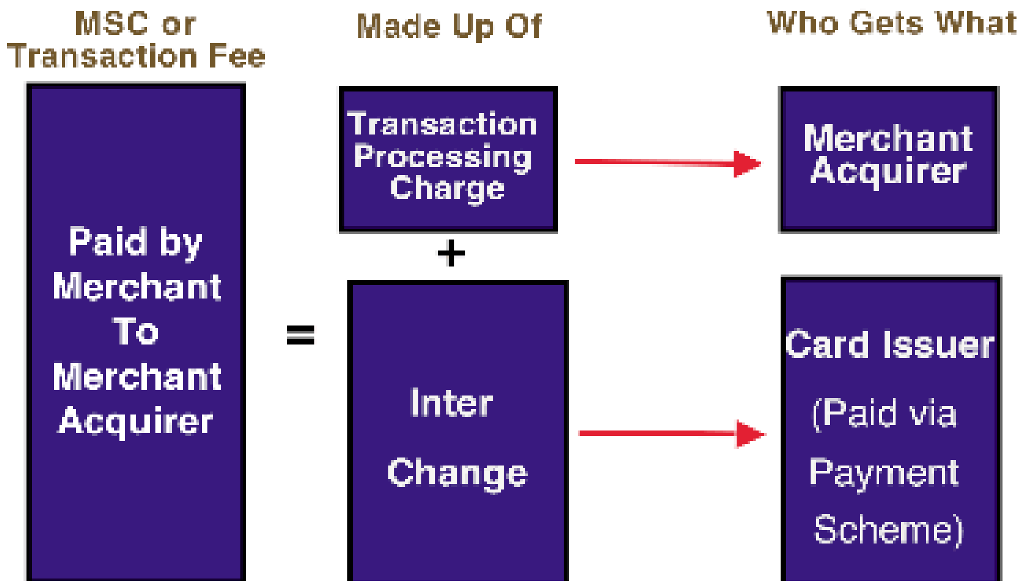
- There are two types of merchant service charges (MSC) levied by the payment card schemes (Visa or Master) on the merchants, they are-
- **Percentage based charge** –In this system some percentage of the sale is taken as MSC. E.g. 1% of the sale. This is also called **Ad valorem**
- **Per-transaction based** – In this system merchant is charged according to number of transactions. e.g. 2 Rs per payment



How Merchants are charged by Payment Card Schemes?

Percentage based charge –In this system some percentage of the sale is taken as MSC. e.g. 1% of the sale. This is also called **Ad valorem** (credit card)

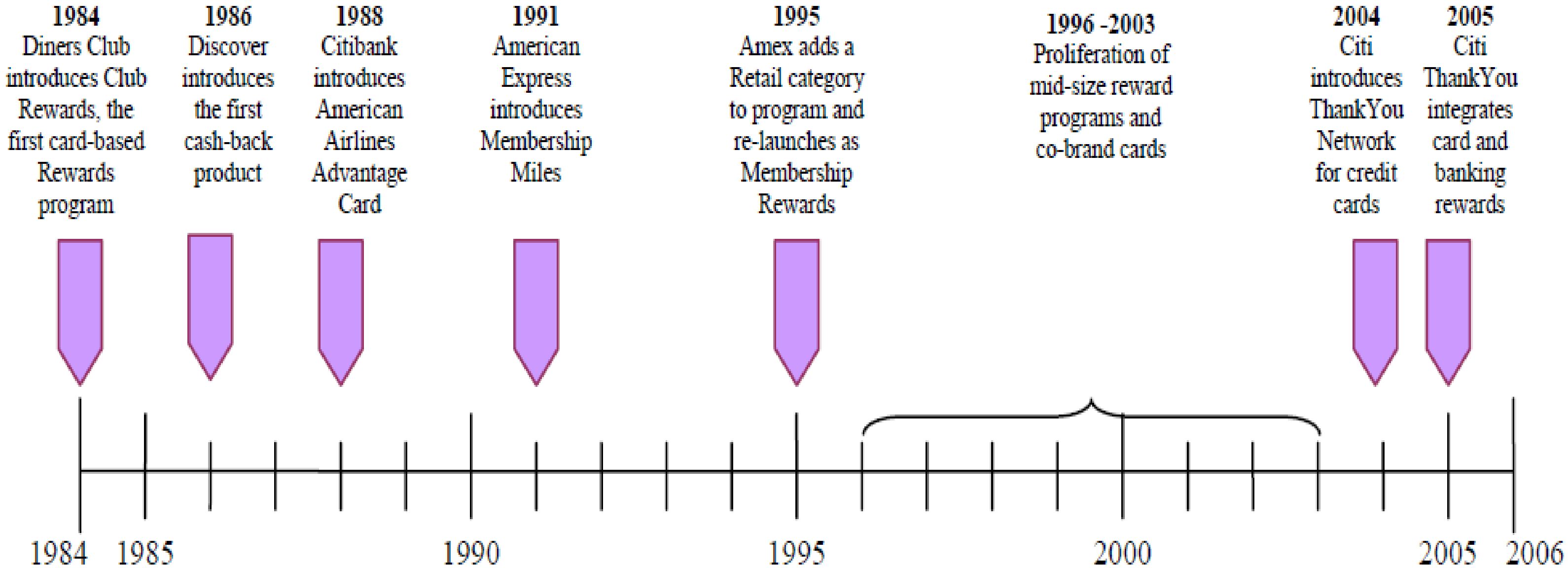
Per-transaction based – In this system merchant is charged according to number of transactions. e.g.   2 Rs per payment (debit card)



Loyalty Management

History of Rewards

- Loyalty programs –foundation of issuer marketing and differentiation.
- Robust loyalty operations represent a high barrier to entry and produce a competitive advantage.

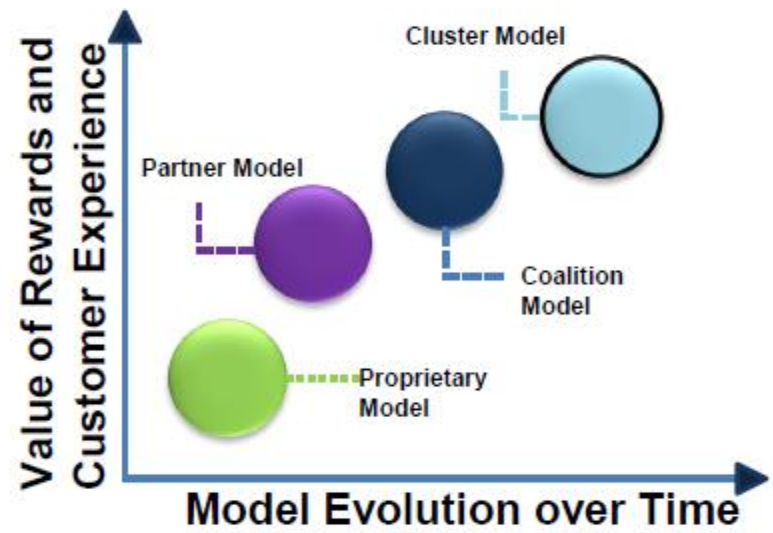


Loyalty Models

1970s – Rewarding Customer Satisfaction

Early 1990s – Rewarding Customer behavior

2010 – Manage migration; Integrate Attitude, Needs and Satisfaction



Types of Loyalty

1. Inertial Loyalty - Inertial loyalty is repetitive customer behavior driven by the customer's tendency to not change companies once they're involved with them. Examples are - **Retail Banking, Gas and Convenience stores, Cable TV providers, Mobile Network Operators**

2. Functional Loyalty - A product or brand that fills a specific need for a customer that no other brand or product type can adequately fill. Examples are - **Specific-use products & services**

3. Transactional Loyalty - A structure that rewards customers for each specific transaction with the brand or the product. Examples are - **Payments (credit, debit, online, mobile), Airlines**

4. Emotional Loyalty - This is an emotional connection between or among individuals or groups. It is driven by the perception by the customer that they are the recipients of service or products that are sufficiently valuable to warrant a commitment to that business. Examples are - **Cars, Sports teams (e.g. NFL), Clothing brands**

White Labeling : This is the process through which other merchants' loyalty is managed by established issuers who are already offering reward program, without external use of he brand name. Large issuers generally leverage their loyalty programs and reduce the administrative expense by way of externalization, through coalition and white labeling. In the cut throat competition market small issuers those who are lft in cold can however stay in the competition by this means.

Classification of Loyalty Card Programs

Classification of Loyalty Card Programs

- Membership programs
- Simple repeat programs
- Rewards and points programs
- Stored value/Prepaid/Gift programs
- Multi-applications programs

Levels of Loyalty

Entry Level

- Establishing customer loyalty database
- Migrating from legacy systems to a multi-channel solution
- To target customers using SMS, email, direct mail and/or call centre.

Advanced Level

- Customer transaction details from any point of service.
- Customer spending history may also be accrued enabling successive campaigns to be tailored accordingly.

Superior level

- Dynamic, paperless solution that analyses customer spending in real-time and applies rewards both automatically and interactively.
- Full interoperability with all point of service solutions

Chargeback

Introduction to Chargeback

What happens when the brand-new digital camera you brought home turns out to be a bust?

OR

The DVD player you got for your brother's birthday gets stuck permanently on rewind?

OR

When you've been double-charged for something you're sure you only came home with one of?

If you've made these purchases on a credit card - and these days, that's a near certainty - you're in luck. Thanks to the different consumer protection acts, consumers have a good deal of protection for their credit card purchases.

Dispute Overview

A customer can raise a dispute over phone or write a letter or send an email to his issuing bank. Generally a dispute is raised by a customer either on seeing his statement or when he receives an email / mobile alert for a particular transaction.

The reasons for disputes can be on:

- ATM Short dispense
- Fee
- Interest
- Charges

Charges related dispute can be due to following reasons:

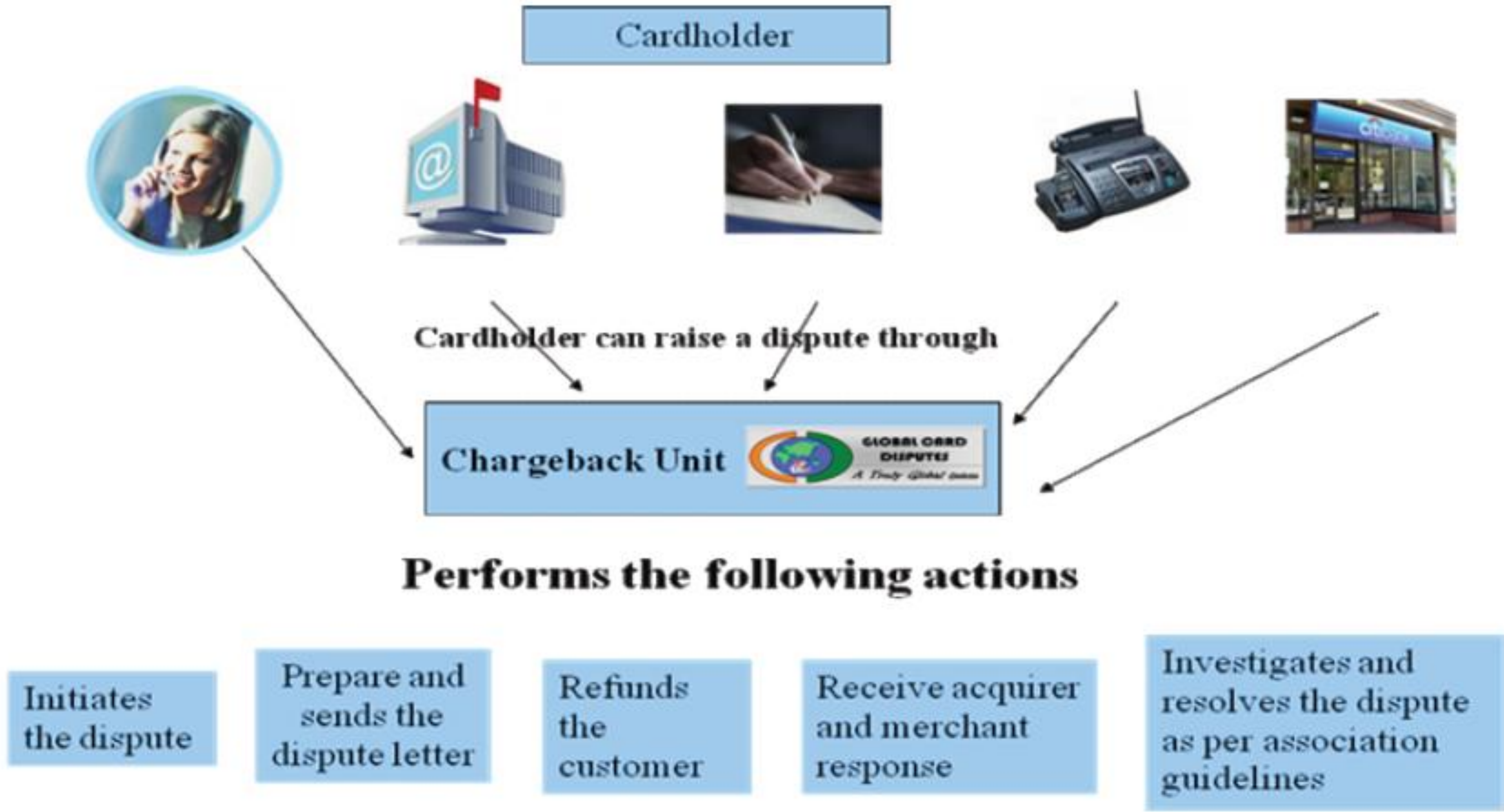
- ✓ Unauthorized transaction
- ✓ Merchandise/service not received
- ✓ Incorrect amount billed
- ✓ Non receipt of cash from ATM
- ✓ Duplicate charge billed
- ✓ Recurring transaction billed after cancellation
- ✓ Cancelled services.

Chargeback from Issuer and Acquirer point of view

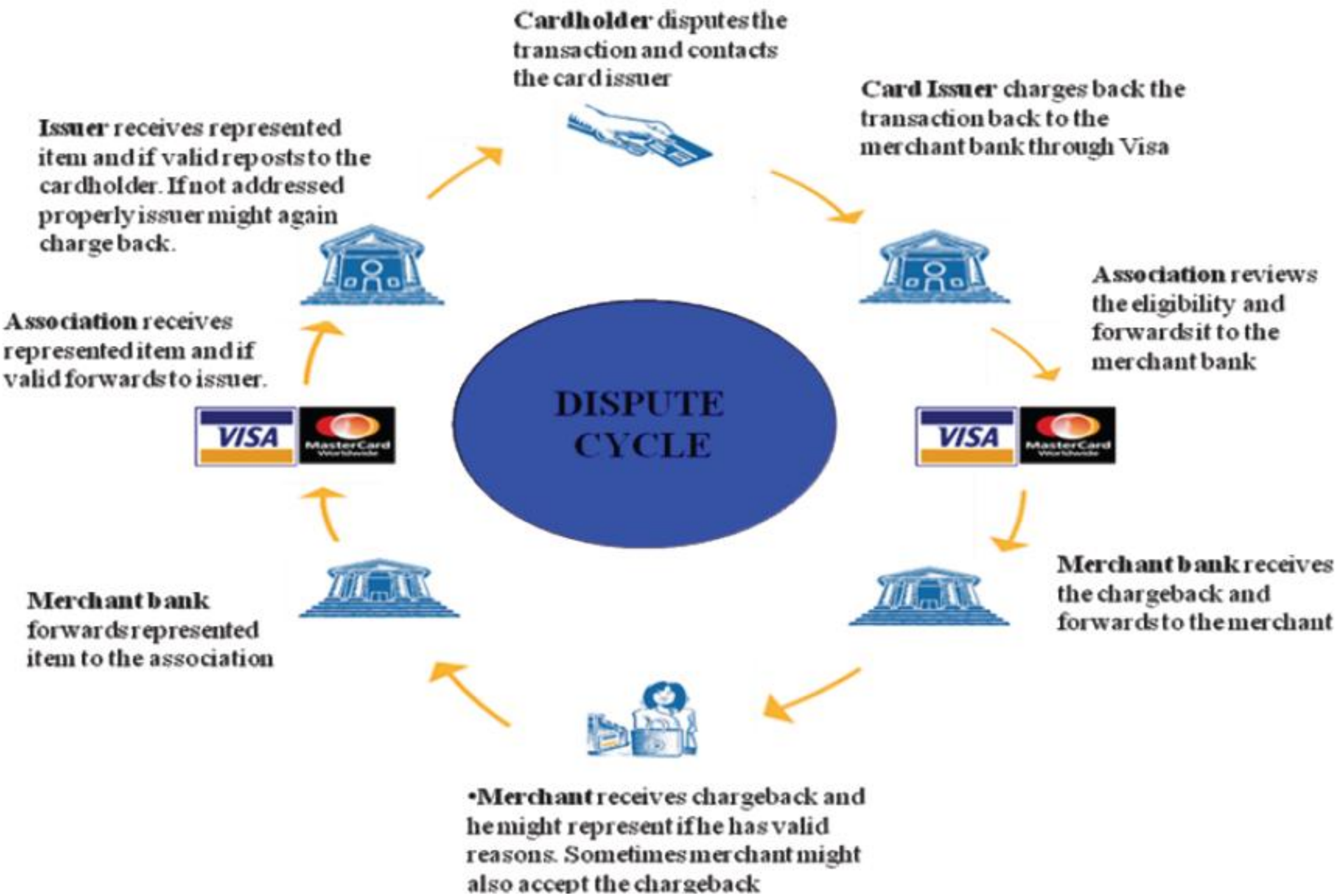
- Issuing point of view
  - ✓ A Chargeback is the process of returning transaction funds to the cardholder.
  - ✓ The process which forces the credit card merchant to pay the charge after the customer successfully disputes an item on his or her credit card statement.

- Acquiring point of view
  - ✓ Chargeback is the reversal of the financial liability in whole or part of a particular transaction by the card issuer towards the merchant bank.
  - ✓ A chargeback is a process in which a credit card company withdraws the money for a transaction from the merchants account and deposits in a consumer’s account who has successfully disputed the transaction.

Dispute Process Flow



Dispute Cycle



Chargeback Terms

- **Presentment:** The act of presenting or submitting a formal statement regarding the transactions made by the card holder.

- **Copy Request:** It is a request made by the card issuer to the merchant bank for a copy of the sales receipt of a particular transaction.

- **Re-presentment:** The dispute resolution tool for the acquiring bank through which they will be able to provide additional details of the transaction to validate the transaction and remedy the Chargeback.

- **Fulfillment:** A document that the Acquirer supplies in response to a Copy Request.

- **Pre-Arbitration:** It is the mutual flow of the document between the Issuer and Acquirer or vice versa to resolve the dispute after the chargeback cycle before filing the case to the association committee.

- **Arbitration:** A process where association (Visa/MasterCard) determines financial liability between members (Issuer and Acquirer) for Interchange transactions.

- **Compliance:** A process where association resolves disputes between Members arising from violations of the Operating Regulations, when the requesting member can certify that a financial loss has occurred or will occur for a specific amount, and no Chargeback right is available**.**

Some more Terminology

• **Exception file:** A list of stolen, lost, counterfeit, or otherwise invalid account numbers kept by individual merchants or their third-party processors. The Exception file should be checked by the merchants to ensure that a card present transaction is valid.

• **Code 10 call:** A call made by the sales associate to the merchant's voice authorization center when the appearance of a card or the actions of the cardholder suggest the possibility of a fraud. The term "code 10" is used so that calls can be made without raising suspicion while the cardholder is present.

• **Magnetic-stripe reader:** The component at the point of sale that electronically reads the information on a payment card's magnetic stripe.

• **Visa Card Recovery Bulletin:** An internationally printed list of lost/stolen, counterfeit, and other cards that issuers have listed for pickup. The Card Recovery Bulletin is only printed in countries outside USA.

• **Acquirer Reference Number:** A 23-digit identification number included in a BASE II Clearing Record, as specified in the BASE II Clearing Manuals.

Authorization Code: A code that an Issuer, its Authorizing Processor, or Stand-In Processing provides to indicate approval of a Transaction. The code is returned in the Authorization Response message and is usually recorded on the Transaction Receipt as proof of Authorization.

• **Authorization Request** :A Merchant's or Acquirer's request for an Authorization.

• **BASE II**: The VisaNet System that provides deferred Clearing and Settlement services to Members.

Chargeback Reason Code Groups

With each chargeback the issuer selects and submits a numeric "reason code". This feedback may help the merchant (and acquirer) diagnose errors and improve customer satisfaction.

Reason codes vary by bank network, but fall in six general categories

- **Authorization:** This group of chargeback right is provided by associations to safe guard the interest of Issuer in terms of credit loss due to fraudulent activity. This group of chargeback may not be used in the regular cardholder disputes.

- **Fraud:** This group of charge backs is extensively used to resolve customers' dispute for unauthorized transaction. Most of the non face-to-face transactions are resolved through this category of chargeback in favor of cardholder.

- **Processing Error:** This group of charge backs covers disputes, which occur due to processing error either by merchant or acquirer. In this case, responsibility to disputed amount is determined based on the documentary evidence provided by merchant and cardholder.

- **Merchandise/Goods Not Received:** This category of mostly applies to non face-to-face transactions, wherein the cardholder has ordered for goods or services which the merchant failed to deliver and the cardholder attempted to resolve the dispute with merchant and there is no resolution.

- **Cancelled / Returned:** This group of chargeback applies to dispute wherein cardholder returned the merchandise and the merchant failed to issue credit or the cardholder cancelled a standing instruction still merchant is processing the subscription amount to cardholder account.

- **Non-receipt of requested Information:** As mentioned earlier, Issuers have the right to request for a copy of transaction information documents, which will have to be fulfilled by acquirer/merchant. Failure to fulfill would give Issuer a chargeback right, if copy requests were processed within applicable chargeback time frame.

Chargeback Reason Codes – MasterCard

Typical chargeback codes for MasterCard are explained below

A. Authorization-related Chargeback

Reason Code	Description
4807	Warning Bulletin File
4808	Requested/Required Authorization Not Obtained
4812	Account Number Not On File

B. Fraud-related Chargeback

Reason Code	Description
4837	No Cardholder Authorization
4840	Fraudulent Processing of Transactions
4847	Requested/Required Authorization Not Obtained and Fraudulent TXN
4849	Questionable Merchant Activity
4862	Counterfeit Transaction Magnetic Stripe POS Fraud

Collections

Terminology for Collections

Collections is an activity of recovering all past due unpaid amounts from credit card accounts. Collections teams try to collect only past due amounts from the customers. When the current due amounts become past due t hat is when collections team comes into picture.

What is meant by mis-payment?

Mis-payment means the customer has not made a payment to clear his minimum due.

What is delinquency?

Customer becomes delinquent only when he fails to make a payment for a complete cycle.

If a customer misses to make a payment for one statement he is 1 cycle delinquent. If a customer misses payment for the consecutive statement also he is 2 cycles delinquent.

Likewise, if a customer does not make a payment for 6 consequent statements he is 6 cycles delinquent. In other words customer becomes delinquent when he does not make a payment for one statement and above.

What is Ageing?

To understand this we need to understand the due date and the billing date concept. The due date is a certain period of days after the billing date. It is the date by when the customer needs to make a payment in order to remain current on his credit card account. This is the day when the bank needs to receive the cardholder’s payment.

The billing date is by when the statement cycles and a new statement is generated. If the customer does not make a payment by the next billing date that is when a customer will roll to 1 cycle delinquency and his account begins to age.

Example: Customer’s bill date for the month of March 201X is 13th March 201X, the customer’s due date 18th March 201X. If the customer fails to make a payment by 18th March 201X, late fees and finance charge will be charged on his account. If the customer does not make a payment by next bill date i.e. 13th April 201X, then he would be 1 cycle delinquent. This is how a customer’s ageing process begins.

What is Bucket ?

- If the customer is 5 days to 35 days delinquent then the customer is said to be in bucket 1.
- If the customer is between 35 to 65 days of delinquency then the customer is in second bucket.
- If the customer is between 65 to 95 days of delinquency then the customer is in the third bucket.
- If the customer is between 95 to 125 days of delinquency then the customer is in the fourth bucket.
- Likewise 125 days to 155 days is bucket 5 and 155 days to 184 days is bucket 6.
- Anything greater than 180-185 days is generally accounts which are charged off.

What is Recovery ?

Delinquent accounts are first worked by Collectors. After charge off it is worked by Recovery and during this stage the account is blocked / closed. Efforts are made to recover any payment out of the total balance

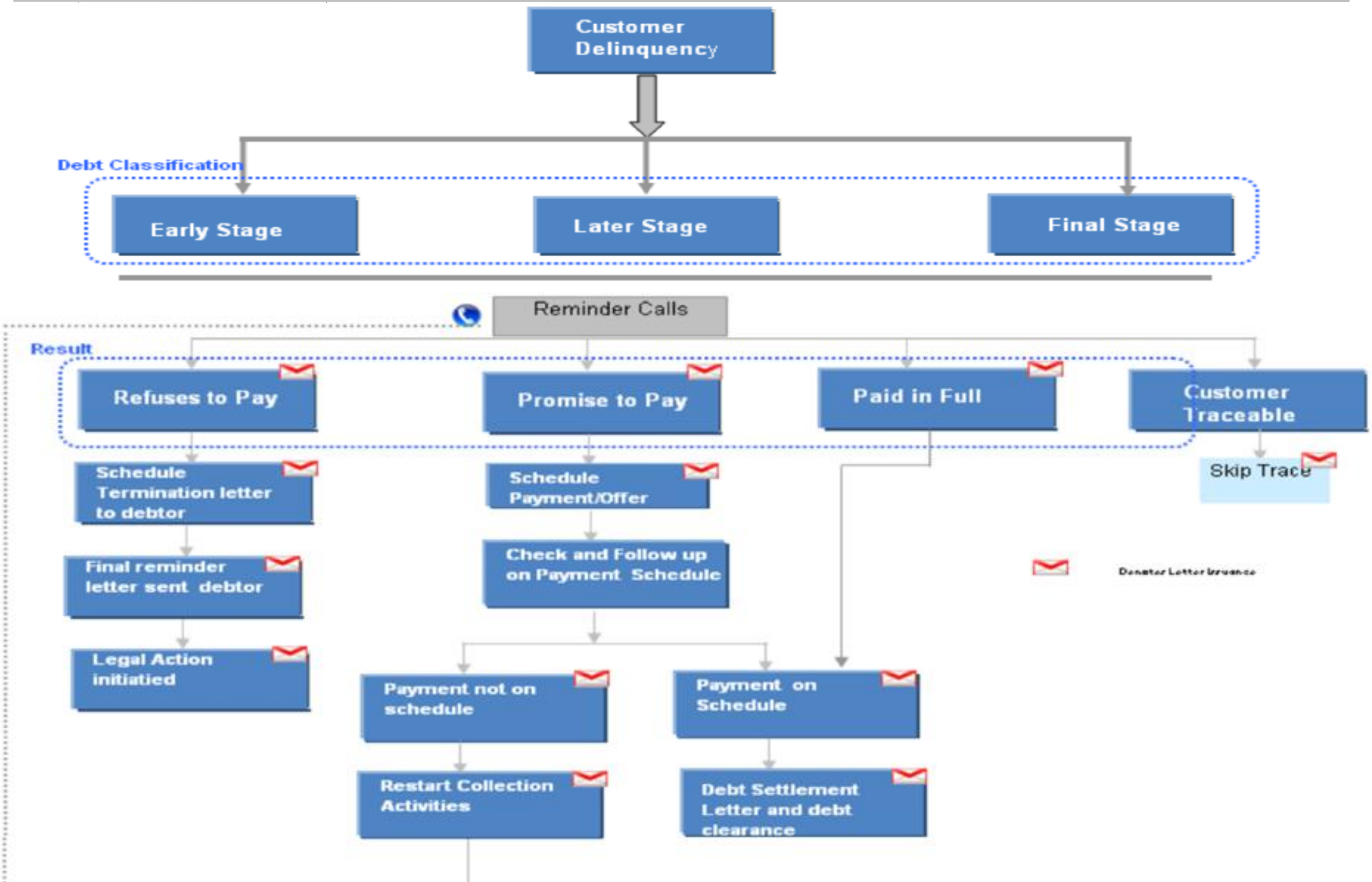
Why Recovery?

Once an account is written off, balance is removed from the books and considered as Loss.

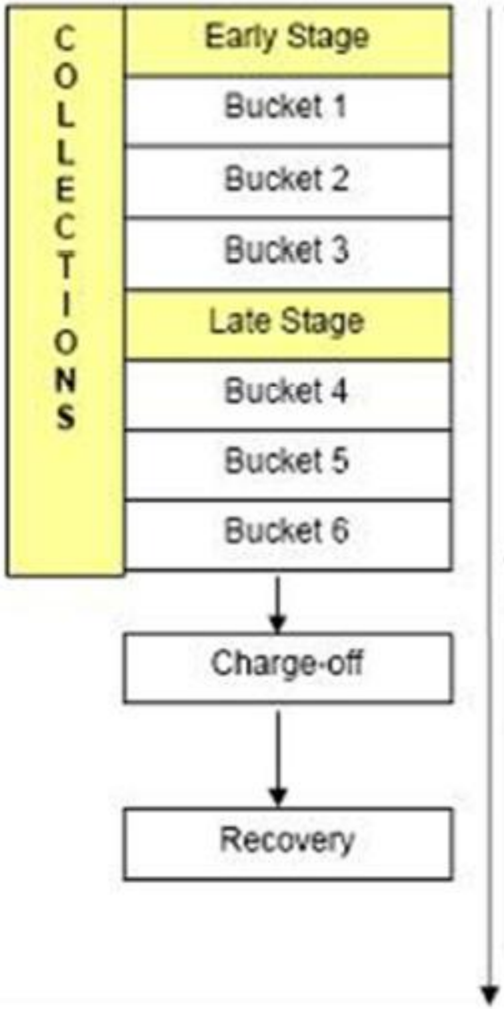
However, the Net Credit loss takes into account the amount recovered post account getting written off. This therefore offsets part of the overall loss to the Institution or in other words, Recovery helps reduce the net loss

Therefore, Net Credit Loss = (Write off – Recovered Amount)

Collections Activities



Collection Lifecycle



Collections
In the early and late stages of delinquency, efforts are made to collect the due debt from delinquent customers. Strategies are developed depending on the delinquency stage.

Charge- off
Once an account gets past a certain number of days delinquent, it is charged off. The timing of charge-off (write-off) depends on the product.

Recovery
After write-off, the account is passed on to the Recovery department. Here efforts are made to recover any payment for the total balance.

Different Repayment Options

- Temporary hardship programs

  - Fixed Monthly Payment option
  - Reduced Interest Rate
  - Zero Interest Rate

- Permanent Hardship programs

  - Pay down Option
  - Lost Income hardship program

Bucket Repair

This is a process to adjust the amounts due in each bucket.

Why do Bucket repair ? Why do we adjust amounts in each bucket?
When the customer enters into a repayment schedule, then the amounts under various buckets are cleared and the recently negotiated payments are entered in the buckets.

Why is this exercise done?
This is to keep the account in the same bucket in which it was at the time of offering the repayment scheme.

Why should the customer's account remain in the same bucket?
Since the customer is entering into a payment alternative program, we require to prevent the customer from rolling further delinquent

How do we do that?
We will have to fix the new negotiated amounts in the buckets.

Credit History Adjustments

What is Credit History?

A Credit report has information about a customer. All information required to create a credit file of the customer. It is a personal information section which is used for identification purposes. Details like name, social security number, birth date, current and previous address, current and past places of employment etc is mentioned in the personal information section. There is a section for public information and collection accounts. This section will have information on tax lien, judgments, bankruptcies, foreclosures etc. There is a section on credit history.

This section explains the number of times during the life of the account when the customer was 30 days past due, number of times 60 days past due, 90 days past due etc. This history updations happens automatically by the collection systems. This update is sent to the Credit Bureau (FICO, Equifax, Experian).

When are history adjustments done?

1. When there has been a bank error causing payment not reflecting on the customer's account correctly or on time, it causes a false delinquency. This false delinquency is corrected and history adjustment needs to be done.

2. When a hardship program is reinstated then the history adjustment need to be done.

Settlement and Association

Settlement Reconciliation

What is Settlements ?

Settlement is the process of paying to / receiving from the association for the transactions effected by the cardholder / merchant establishment.

Who will pay the association ?

Association would get paid by the issuing bank for the transactions effected by their card holders.

Who will be paid by the association ?

Association would pay the Acquiring bank for the amount the acquiring bank has paid its merchants.

Where to get the amount to be settled ?

There are set of reports available for determining the amount to be settled to the association. E.g. VSS 110 (Net settlement Amount), VSS 210 (Optional issuer fees), VSS 140 (Currency conversion fees)

What is Settlement Reconciliation ?

Once the settlement amount is paid to the association, a reconciliation activity is done to ensure the correctness of the funds claimed by the association and also to account for all components pertaining to the settlement.

The main components are as below

- ✓ All transactions made by customers
- ✓ Dispute related debit, credit passed on by Association
- ✓ Income and expenses credited or debited by Associations
- ✓ Amounts to be received on acquiring transactions (this will be paid to the merchants)

Different Association Overview

Visa stands for Visa International Service Associations. It is an association of more than 21,000 financial institutions that issues and market Visa cards (Debit and credit card) .Visa association has a base of 21,000 financial institutions. Visa card was launched in 1976 and first card was issued by Bank of America.

Master card is a association of more than 25000 financial institutions. Master card was founded in 1966 by ICA (Inter-bank Card Association) which includes California based banks (United California Bank, Wells Fargo, Crocker Bank, and the Bank of California). It was founded to compete against BankAmerica (Now Visa). The name “Master Charge” was licensed by these California banks from the First National Bank of Louisville, Kentucky in 1967.In year 1980 “Master charge was renamed as MasterCard”. MasterCard's largest current shareholders are: JPMorgan Chase, Citigroup, Bank of America, Euro Kartensysteme, Europay France.

Diners Club International®

In 1949, Diners Club introduced the first general – purpose credit card in United States. The Diners Club card was basically meant for higher class and designed for entertainment and traveling purpose. Diners club charged around 7% for each transaction. Merchant found that Diners card improved their sales and they are able to attract more and more customers. Diners club started this but Visa and MasterCard led the competition.

Maestro

Maestro card is a joint venture of MasterCard and Europay International. Maestro is the successor to Eurocheque and Eurocard systems in Europe. Maestro cards are international debit facility /service cards. Maestro cards are obtained by card holders from their banks in which they hold the account. The cardholder presents the card at [POS] point of sale. The merchant swipes the card which is electronically checked and authorized by the card issuer for sufficient fund. Cardholder confirms the payment by either signing or entering 4 digits PIN. Maestro also provides international debit facility.

DISCOVER

Discover Card was introduced by Sears in 1985. By then Sears was the largest retailer in the United States. Sears started “Sears Financial Network” in 1981 in an attempt to become one-stop financial service provider. Initially Sears was providing only purchased brokerage, and real estate services. The Discover Card quickly, gained a large national consumer base. It carried no annual fee, and offered higher credit limit than similar cards. Cardholders could earn a "Cash back Bonus," in which a percentage of the amount spent would be refunded to the account (as high as 1 percent), depending on how much the card was used. The Discover Card was the only credit card, accepted by the U.S. Customs Service to pay customs duty at that point of time. In May 2005 Discover Network announced an alliance with China UnionPay Network. The two companies have signed a long-term agreement that will lead to acceptance of Discover Network brand cards at UnionPay ATMs and point-of-sale terminals in China and acceptance of China UnionPay cards on the PULSE network in the U.S.

Different Association Overview Continued…

American Express is a New York based financial company offering services in payment cards best known charge card, credit card and travelers Cheque business .American Express was founded in year 1850 by Henry Wels, William Fargo and John Butterfield as an express business .American Express initial launched its money order business to compete with US post office business, this service also introduced in Europe.

Card Fraud Overview

Card Fraud Overview

Fraud is an intentional deception made for personal gain or to damage another individual for an unlawful gain, especially financial gain. Generally fraud is a deception, deliberately practiced in order to secure unfair or unlawful gain.

- **Thought process of a fraudster**

o Incentive: I want to, or have a need to, commit fraud.

o Opportunity: There is a weakness in the system that the right person could exploit. Fraud is possible.

o Rationalization: I have convinced myself that this fraudulent behavior is worth the risks.

o Capability: I have the necessary traits and abilities to be the right person to pull it off. I have recognized this particular fraud opportunity and can turn it into reality.

Types of Fraud

- **LOST / STOLEN** - Misuse of card lost or stolen from the customer
  - ✓ When a credit card is lost or stolen, it remains usable until the holder notifies the issuer that the card is lost
  - ✓ Most issuers have free 24-hour telephone numbers to encourage prompt reporting
  - ✓ It is possible for a fraudster to make unauthorized purchases on a card until it is canceled
  - ✓ Without other security measures, a thief could potentially purchase the entire limit in merchandise or services before the cardholder or the card issuer realize that the card is in the wrong hands
- **CARD NOT RECEIVED**
  - ✓ Is when a person applies for a credit card or in receipt of his renewal card, the fraudster intercepts and steals the card before it is delivered to the actual address
  - ✓ This is possible either intercepting from post office or taking it from the mailbox before the homeowner receives the mail

- **SKIMMING/ MANUAL COUNTERFEIT**
  - ✓ Fraud committed using a counterfeit card on which the exact information of a genuine customer is embedded
  - ✓ It occurs after the victim’s original cards have been cloned or 'skimmed', whereby sensitive banking information is transferred and encoded onto the fake cards.
  - ✓ The details of a genuine card are skimmed and the same is transferred to a new plastic
  - ✓ The skimmed card is used for doing transactions where as the transaction amount is billed to the original card holder account
  - ✓ Generally done by the fraudsters with the help of merchants

- **BIN ATTACK**
  - ✓ It is possible for an attacker to obtain one good card number and generate valid card numbers by changing the last four numbers using an automated generator
  - ✓ The expiry date of these cards would most likely be the same as that of the good card

- **IDENTITY THEFT**
  - **APPLICATION FRAUD**
    - ✓ Application fraud happens when a criminal uses stolen or fake documents to open an account in someone else's name.
    - ✓ Criminals may try to steal documents such as utility bills and bank statements to build up useful personal information or they may create counterfeit documents.
  - **ACCOUNT TAKEOVER**
    - ✓ Account takeover happens when a criminal tries to take over another person's account, by gathering information about the intended victim.
    - ✓ The fraudster then contacts their card issuer masquerading as the genuine cardholder and asking for mail to be redirected to a new address.
    - ✓ The criminal then reports the card lost and asks for a replacement to be sent

- **CARD COMPROMISE**
  - ✓ In this type of fraud details of cards such as card number, expiry date and CVV no (card verification value) are compromised and misused on internet or for mail / telephonic order transaction
  - ✓ The mail and the Internet are major routes for fraud against merchants who sell and ship products, and impacts legitimate mail-order and Internet merchants
  - ✓ While there are safeguards to this, it is still more risky than presenting in person

- **IMPOSTER PICKUP**
  - Fraudster poses as Bank employee and approaches the card holder
  - S/he promises the cardholder to provide him with some special offers and gets the card from the cardholder.
  - S/he then uses the card to their own advantage.

➢ FRIENDLY FRAUD

- ✓ Describes a consumer who makes an internet purchase with his/her own credit card and then issues a chargeback through his/her card provider after receiving the goods or services
- ✓ The challenge with friendly fraud is that there is no way to verify the authenticity of the transaction, which is in fact legitimate, because the consumer is the one that is not legitimate.

Card Fraud Detection

Fraud Detection

Fraud Detection constitutes of steps taken to monitor and review specific transactions which appear to be suspicious in nature and thus help contain a fraud attack

✓ Fraud detection review could either be an ongoing real time analysis OR through a periodic check

✓ Frequency of monitoring would depend upon the risk exposure and its potential impact

✓ 24 x 7 monitoring is generally adopted to ensure full coverage of a large portfolio of accounts which potentially have transactions round the clock and across the globe

✓ This could be through a review of a 'report generated' set of transactions which are filtered through a specific logic OR through a multiple logical parameter based real time analysis

✓ Fraud Detection could be done broadly through a chronological 'First in First out' basis or through further levels of categorization into 'High', 'Medium and 'Low' prioritization

✓ Detection techniques could further be altered through other variables of segregation depending on the need of the hour

Transaction Variables

Transaction variables received as part of the authorisation process are used to detect potential frauds

The following transaction details would predominantly be considered while reviewing suspicious transactions:

✓ Transaction amount: If the value of the transaction is in tune with normal spend pattern observed

✓ Velocity: This refers to the number of transactions within a defined period. Any out of the ordinary, sudden increase in transaction count within a short frame of time

✓ Geography: Transactions either coming out of locations prone to fraud or places where transactions have not been noticed earlier

✓ Merchant Category: Again certain merchant categories are monitored because of their previous record in terms of exposure to fraud

✓ POS Type: The ‘Point of Sale’ type be it a ‘Card not Present’, Pin verified Chip enabled transaction or through a manual swipe Various combinations of the above could also arouse suspicion.

Transaction Variables - Other Detection Cues

Other details are also observed to take an informed decision:

✓ Specific system notes maintained on the system which inform about any travel plans or potential expenditure

✓ If any event or occasion could lead to an increase in spends during a period of time or in a location E.g. Sports events like Olympics, Football World cups, Holidays etc.

✓ If Account maintenances like contact detail changes, precede an immediate card replacement followed by high value/velocity spends

✓ If high velocity or amount spends occur at risk prone merchant categories immediately after an account is activated

✓ If there is a sudden clearance of high value outstanding dues followed by large spends

Card Fraud Analysis

Fraud Analysis Key Variables

- ✓ **Country of Issuance** : To identify the emergence of specific trends
- ✓ **Transaction Country :** To categorize geographies more prone to fraud or track the emergence of new locations of concern
- ✓ **Merchant Category** : To monitor if specific merchant categories like personal spends are more exposed to fraud attacks E.g. Jewellery,ATMs, Clothing, Supermarkets etc
- ✓ **Merchant ID :** If a select merchant outlet (online or physical) has been colluding with fraudsters or is an easy target for suspicious activity
- ✓ **Transaction Amount :** To understand the risk exposure due to the attack and also to see the pattern of the attack
- ✓ **Transaction Time :** To get a better understanding of the attack and comparing it against the prevention and detection performance
- ✓ **Point of Sale Mode :** To strategize further Fraud Prevention and Investigation steps, if exposure is limited to a select card present or card not present scenario o Fraud Identified or Not : Again this would help lead to modifications in Fraud prevention methods
- ✓ **Type of product** : To potentially sharpen parameter based on products
- ✓ **Recovery opportunities :** To analyze exposure to fraud losses
- ✓ **Fraud Type :** To categorize the nature of frauds

Fraud Analysis Techniques

Common Point of Purchase/Point of Compromise

- This analysis is done to identify if any Merchant location has got compromised
- A merchant compromise would mean that cards which have transacted during a specific period could be prone to fraud
- It is because either card data on it surface like Cardholder name, card number,CVV2, and Expiry date has got leaked OR
- Track data available in the Magnetic strip has got compromised
- Multiple fraud affected cards are analysed by tracing back if they had interacted with the same merchant outlet within a close period of time
- These Common Point of Purchases (CPP) are then studied and probed if they could be potential Point of Compromises (POC)
- Analysis would then proceed to identify the number of cards which could be potentially exposed

Test Points

- ✓ Test Points are essentially merchants which are used to test small value transaction attempts
- ✓ These are usually online merchants, selected to test the validity of cards
- ✓ Once the small value attempts are successful, larger transactions are immediately attempted
- ✓ Thus if the initial test transactions are identified at the right time then the larger value spends could be declined
- ✓ Also once such merchants are short listed bulk attacks could also be prevented

Fraud Investigation and Prevention

Investigation – Process Overview

Broadly, following are the steps undertaken in the Investigations, Recovery analysis and Fraud Reporting process:

- ➢ Receipt of information about a disputed transactions through:
  - ✓ Outbound calls made by the bank on suspicious transactions that are identified by the fraud system
  - ✓ Cardholder initiated disputes after they notice unrecognized transactions on their monthly statements
- ➢ Check if the information provides sufficient inputs on the disputed transactions
- ➢ Explore opportunities of recovery through merchant / acquirer calls in order to stop delivery of goods for disputed transactions
- ➢ Pursue with any required investigation necessary on the case, through either an outbound verification call or through email interactions

Fraud Investigation Tool and Checklist

- Verification / Investigations Call : Used to establish a conversation with the cardholder to extract information on the disputed transaction
- Fraud Checklist : Contains a list of questions which would help identify the nature of fraud
- Fraud Declaration Form: This is used to list out all the disputed transaction to obtain approval from the cardholder in order to proceed with dispute recovery. Details mentioned in it would include Billing amount, merchant name and date of transaction.
- Acquirer / Merchant contact: This is pursued especially for ‘Card Not Present’ disputes, where the acquirer/ merchant are contacted to seek opportunity to stop delivery of goods or to cancel a charge

Checklist includes details where cardholder is asked for

- If the card was in their possession at the time when the fraudulent transactions were made
- When did they realize about having lost possession of the card
- If they had ever visited the location where the fraudulent transactions occurred
- Had they used their card on the internet recently
- If anyone else had access to their card details
- If they had made any recent changes to their address of correspondence

Fraud Prevention

- This could be through defining limits and restricting transactions to a limited set of merchant categories e.g. betting outlets, massage parlours etc.
- Through setting up of amount And/Or velocity threshold limits within a specified period
- Automated restrictions could also be set based on specific combination of spend patterns observed, based on a mode of transaction E.g. Fallback transactions
- Manual blocks could also be placed as part of the fraud detection process if observed trends are considered to be suspicious
- Association assisted preventive measures could be introduced e.g. MasterCard Secure and Verified by VISA for online spends
- Preventive recarding based on suspected compromise
- Address Verification System (AVS) check could also be employed for securing online transactions
- Online Authorization Code (OAC) is used to safeguard balance transfers
- Security Checks are used to identify customers over calls and external security like PIN's are used as Cardholder Verification Method(CVM)
- Chip cards were introduced to strengthen Card Authentication Method
- CVV / Expiry date checks are also used a security against online fraud attacks
- Merchants can also look for signature mismatch
- Cards could be also updated on Recovery Bulletins to be used as reference

Fraud Prevention – A Case Study

- For example a parameter needs to be set to decline high value Cash withdrawal transactions in Germany for cards issued in France
- Comparison of previous genuine spend and fraud patterns suggest that the following logic should be applied

MCC From	MCC To	Single Transaction Limit	Daily Transaction Limit	Velocity	Logical Operator
6010	6012	500	1000	3	OR

This would ensure the following scenario:

- ✓ Any transaction greater than OR equals US $ 500 would be declined
- ✓ Only 3 attempts could be made in a day
- ✓ The sum of the 3 attempts should not exceed US $ 1000

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