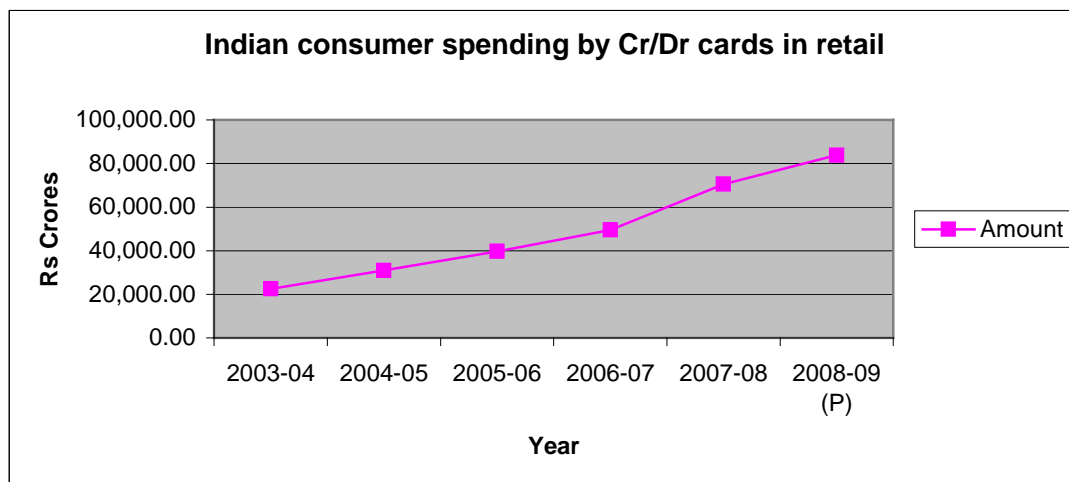


Cutting Credit and Debit Card Processing Costs in Retail

Introduction

The past decade has seen an increasing use of credit and debit cards by consumers for purchase of goods and services at retail outlets. Payment through these cards provides consumers convenience, security and a credit period for paying for their purchases. Retailers also benefit through lesser cash management hassles, higher security and improved walk-ins through promotions carried out by card issuing banks.

In 2009, Americans used over 1.1 billion plastic cards 21.3 billion times to pay for \$3.7 trillion worth of goods and services, constituting about 33.7% of all consumer spending. Indians on the other hand used their 0.15 billion cards 0.4 billion times to pay for \$ 20 billion worth of goods and services, constituting about 3% of all consumer spending. Consumer spending in India through cards is therefore in its early stages however growing at a CAGR of over 18% and likely to become a significant contributor to overall spending in the current decade.



However acceptance of credit/debit cards as a mode of payment in retail has a cost to it. This arises from a) the technology required for electronic authorization of cards, that is provided for by the banks; b) funding of the credit period for the cardholder; c) managing fraud and d) costs arising out of promoting card usage at retail. With increased usage of credit/debit cards retailers are becoming increasingly conscious of these costs and are actively seeking methods for reducing the same, given the thin margins on which retail operates. This article explains the various costs involved in card processing in retail and suggests retail technology solutions that can help control costs effectively.

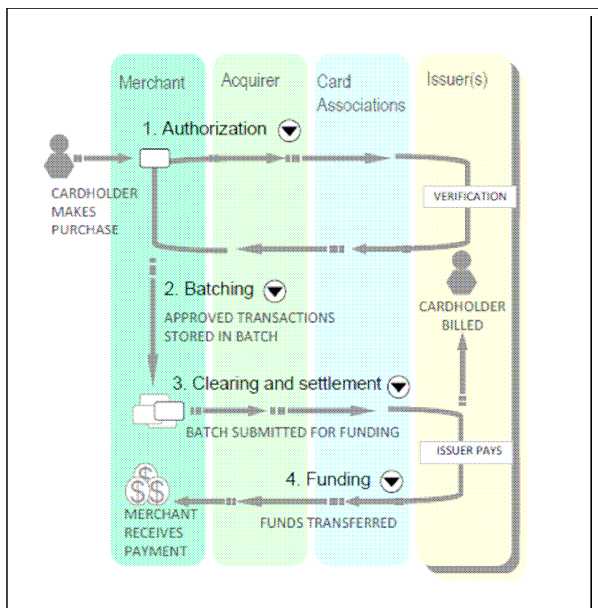
How Are Credit and Debit Cards Processed?

To understand how to save costs in credit card processing in retail, one needs to first understand how the processing happens.

Think about what happens when a consumer pays for pair of jeans at a retail store, say Jeans Unlimited using a credit card. The consumer must first have a card. This card would have been issued by a bank (called Issuer or Issuing Bank) and would carry the bank's logo, a unique identification number for the card and typically the logo of a card association such as VISA or MasterCard.

To let the consumer buy the jeans, Jeans Unlimited has to accept the card. They would have entered into a contract with a bank (called Acquirer or Acquiring Bank), for accepting cards, ensuring that the bank would reimburse them for the price of the jeans after deduction of a small fee called the Merchant Discount Fee (MDF). The bank in turn would install a terminal (called Electronic Data Capture (EDC) machine) on which Jeans Unlimited can swipe the cards.

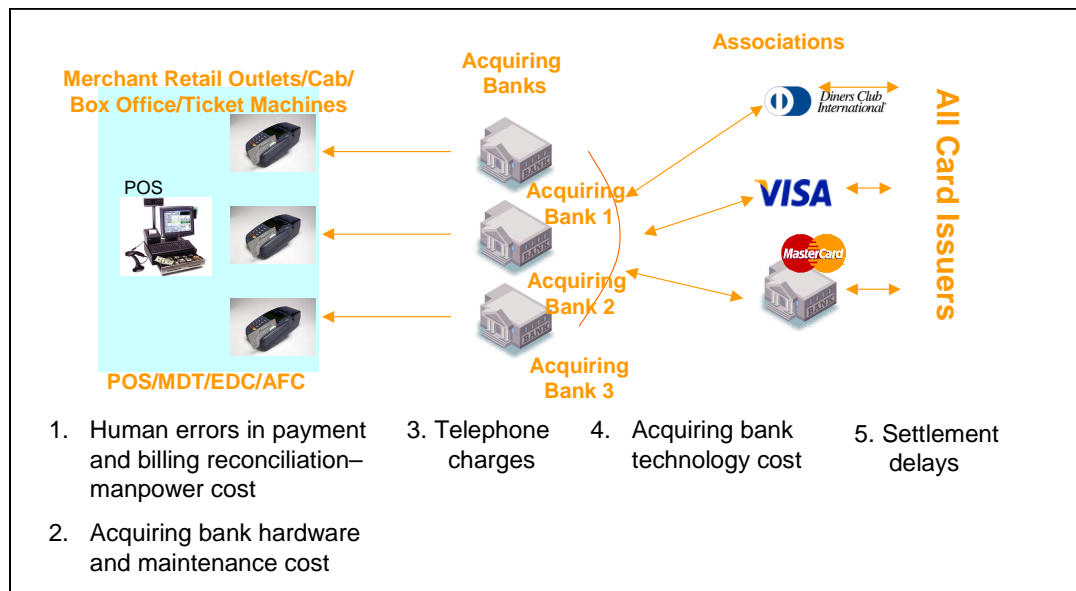
After the consumer presents the card, the clerk swipes the card on the EDC machine kept by the bank. This machine decodes the numbers written on the magnetic stripe of the card and within seconds dials the number of the Acquiring Bank to provide it with the data read. This bank then connects to the card association whose logo was on the card (e.g. MasterCard) and provides it with the data. MasterCard's computer identifies the Issuer Bank of the card from the data and connects to it to check whether the consumer has enough money in his account (debit card) or in the credit line (credit card) to cover the purchase. If yes, then it sends back an approval (authorization) that is routed back through the same networks and finally comes through as a charge-slip printed on the EDC machine. The clerk then gets the slip signed by the consumer as evidence of card used and provides the consumer with a copy of the slip and the jeans.



Each such transaction is stored by the EDC in a batch. At the end of every day, the retailer clerk settles all the transactions stored in the batch with the Acquiring Bank through the press of a few buttons on the machine. The bank on the next day remits the funds corresponding to the batch after levying the Merchant Discount Fee (MDF). This action of settlement is very important as the retailer will receive the funds from the Acquiring Bank only after the settlement is successfully completed. The Acquiring Bank gets its funds from the Issuer who in turn gets the money from the cardholder at the end of the credit cycle provided to the cardholder under their agreement. The flow of transaction and funds is shown in the figure above.

Highlighting the Wastage in Card Processing Technology in Retail?

The above card processing methodology uses a technology comprising of an EDC machine connected over a telephone network to the Acquiring Bank. The Acquiring Bank and Issuing Banks are further connected through a maze of networks that also connect to the card associations. This sophisticated network is used for real-time authorization of the purchase by card and provides a guarantee to the retailer that they will receive the funds from the Acquiring Bank. This technology infrastructure has been serving the Indian retail industry well over the past many years. However, there are opportunities for reducing cost through use of modern payment technologies that can help both the Acquiring Bank and the retailer reduce wastage. To explore such technologies, one needs to first understand the elements of costs involved in the technology framework that is used today. This is shown in the figure below:



Hardware Equipment and Associated Maintenance Costs:

Typically a retailer enters into agreements with multiple banks for card processing. This maybe due to existing corporate relationships; due to preferential processing fees (MDF) from banks or simply as a backup in case of EDC failures. Deployment of multiple

terminals however leads to increased hardware expense for banks for the same overall business (coming from the MDF) that the retailer is sharing between the banks. Additional expense arises from maintenance and servicing of this hardware. Rationalization of this is an opportunity for cutting down this wastage.

Human Error Costs:

The EDC machine at the outlet is connected through a telephone line to the acquiring bank. In the example above, the clerk would have swiped the card and entered the price of the jeans in the EDC machine for authorization by the bank. The entries done in the EDC machine and the POS system (billing system) are independent and are a cause for possible human errors that can cause reconciliation issues arising from a) wrong value entry in EDC, b) wrong payment tender selection in POS and c) double-swipe in EDC. These human errors require significant reconciliation efforts to be spent by the retailer and the bank on a daily basis to ensure smooth continuity of business. Elimination of such human errors is an opportunity for reducing this wastage.

Communication Costs:

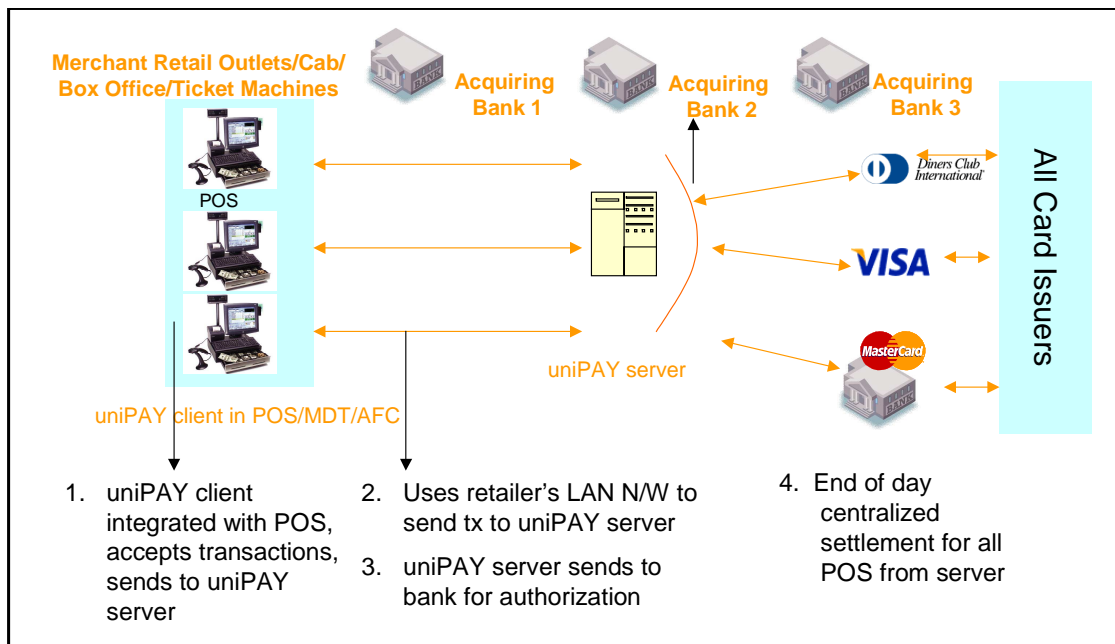
The EDC machine connects to the Acquiring Bank through a telephone network. As a result, the retailer gets charged for a telephone call every time a card transaction is done. In several instances the system may not connect in a single try and can lead to additional telephone calls. The Acquiring Bank also uses a network infrastructure to receive the telephone connections from the EDC machine and this results in charge for the bank. However most organized retailers have broadband local area networks for use in their retail operations. It is possible to route card transactions over the same network with a negligible (< 1%) increase in bandwidth required, saving on the communication costs for both the retailer and the bank.

Settlement Delay Costs:

The Acquiring Bank pays the retailer for the batch of transactions settled by the EDC at the end of the day. In case the EDC fails for any reason (hardware failure, connectivity failure etc.) the settlement does not happen and as a result the retailer will not receive the funds from the Acquiring Bank. This can lead to cash flow issues at the merchant for which they will need to work out alternative funding sources leading to finance charges. Using modern payment processing solutions, such as those described in the subsequent section, the settlement can be made independent of EDC failures, leading to no cash flow block for the merchant.

Reducing Wastage

Modern payment processing solutions such as uniPAY by Innoviti can help address these challenges effectively. An architecture for the same is shown in the figure below:



In these architectures the EDC machine is replaced with a client software that is integrated with the billing software. The card swipe of the POS machines is used and the transaction is routed over the retailers LAN to a central server that further routes it to the card associations and issuers for authorization. All of the points of wastage identified above are addressed effectively as follows:

1. Integrating billing and payment processes eliminates all the human errors. The bill value is automatically picked up removing human entry. The mode selection is also automatic and double swipe is eliminated. Removal of human errors leads to effective reconciliation between billing and payment processes in retail operations.
2. The EDC hardware is eliminated resulting in capital savings for the bank and elimination of maintenance charges associated with the same. While at the same time the backend server has the capability to connect to multiple banks thereby allowing the retailer to maintain multiple banking relationships if needed.
1. End of day settlements are carried out centrally by the backend server eliminating any settlement issues that could otherwise arise in an EDC based technology.

Usage of modern payment processing solutions can help retailers cut down on wastage in credit and debit card processing thereby helping improve overall retail margins while streamlining operations.

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