WHITE PAPER

Payment Trends and Emerging Technologies for Retailers

EXECUTIVE SUMMARY

Today, leveraging technology to solve business problems and achieve your goals is mission-critical, especially for retailers. Written for information technology (IT) professionals and managers, this paper identifies opportunities for retailers to lower operating costs and plan for the integration of new payment methods in their business operations.

Introduction

The payments industry is experiencing significant change, driven by both technology progress and consumer demand for better methods. Figure 1 below shows the significant increase in card-based payments — as of 2005, consumer preference for card-based payments increased by 30%, accounting for 56 percent of in-store payments — a significant trend change in a short period of time. Driving this trend change is extensive in-store advertising by retailers, loyalty and rewards programs, and the proliferation of the debit card and customer convenience.

This trend change represents a significant opportunity for retailers to lower payment costs and at the same time, improve and expand customer services.

More consumer choices and new regulations add complexity for merchants

Technology is the catalyst in providing consumers with an increasing number of choices for services, as well as the convenience of electronic payments. Credit cards, once reserved for corporate use or the convenience of the affluent, are common and available to almost everyone. Online debit and store value cards are gaining market share while new payment methods have emerged, such as the smart card, gift/pre-paid cards and "contactless payments" via technology that allows consumers to turn their cell phones into an electronic wallet.

While card-based transactions are on the rise, so are credit card fraud and identity theft, giving birth to new security requirements for card-based information. The major credit card brands have endorsed the Payment Card Industry Data Security Standard (PCI DSS) — and the retailers are responsible for implementing and maintaining these standards. Compliance is validated with an annual audit, and failure to comply results in steep fines.

So not only do today's retailers need to determine how to keep business systems up to date to offer customers the latest in payment options, they must now also ensure that those systems are PCI compliant.

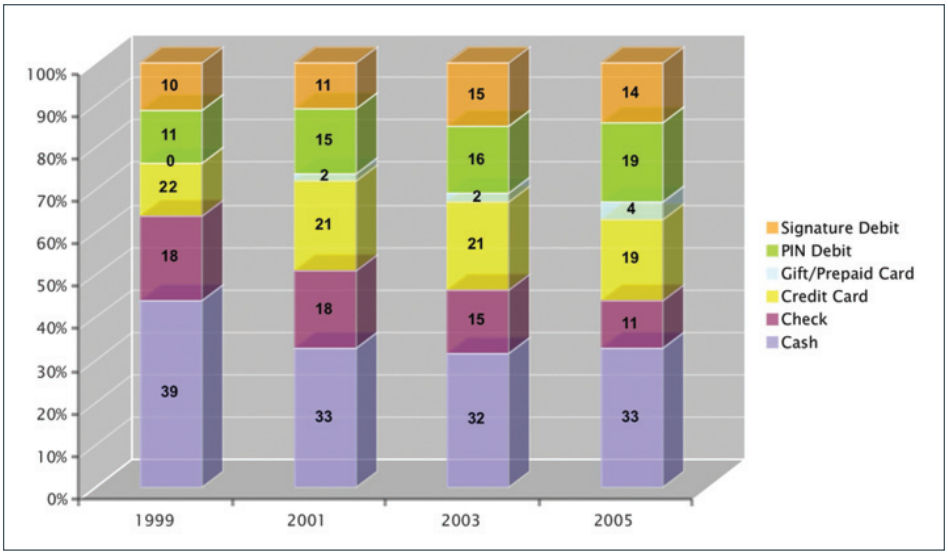
Cash is no longer king

Figure 1 illustrates the changing tide in payment preferences. The number of customers that prefer to use cash and checks is rapidly decreasing. Cash as a preference is down 15 percent, in spite of ATM (automated teller machine) proliferation and increased consumer access to cash. There are some significant advantages for retailers in the cashless trend. Although cash payments help retailers avoid processing costs associated with checks and card-based payments, there are still costs to the operation. Cash transactions incur costs for handling, armored transport and bank deposits. Furthermore, businesses with heavy cash transactions are subject to possible cash shortages and even the risk of physical theft.

Checks: diminishing popularity

The use of checks is also on the wane: as a preferred in-store payment option, the use of checks

Figure 1: In-Store Consumer Payment Preferences



Source: 2005/2006 Study of Consumer Payment Preferences; American Bankers Association/Dove Consulting; www.aba.com

is down approximately 38 percent. Historically, checks have been one of the primary means of payment for purchasing goods and services in the U.S. Today, the check still offers the convenience of a payment transaction without the need to carry cash. However, as issuers promote credit card use and the popularity of debit cards increases, the percentage of check transactions in the retail transaction mix continues to fall. Retailers also gain a financial advantage from this trend, since the actual cost of a check transaction can be quite high when the cost of managing bank deposits and processing checks returned for insufficient funds or fraudulent activity are also considered.

It's all about the cards

While card-based payments are on the rise, the trends within this category are changing: the number of consumers who utilize credit cards as a preferred method of payment is holding steady, while debit (both pin and signature) and gift/pre-paid cards are on the rise.

Credit card use holding steady

Few U.S. financial services products are as dynamic as the credit card. Using vehicles such as specialty rates, loyalty and mileage promotions, cash rebates and merchandise credits, the top credit card issuers continue to invest in programs and services to differentiate their products and improve customer acquisition.

Credit cards have a high convenience factor. Cards offer the convenience of making a purchase without carrying cash or a bulky checkbook. They provide an opportunity to borrow funds – often interest free – when balances are paid in full within a billing cycle. Consumers can also receive frequent flyer miles, discounts on future purchases, cash back or other incentives to use credit cards.

As consumer preference for card use has risen, most merchants now accept credit cards. Yet these cards can be the most expensive form of payment for a merchant. Retailers pay processor acquiring and interchange fees in addition to incurring costs associated with disputed charges and charge backs. In retail segments with high credit card transaction activity such as specialty and department stores, retailers typically issue their own store-brand or private label credit cards. These cards help reduce third-party transaction fees and enable retailers to continuously market to their most loyal customers.

Debit cards: offline to online

Figure 1 also illustrates that debit cards are the fastest growing payment technology in the U.S. in 1999, debit cards were the preferred payment method for 21 percent of buyers, increasing to 33 percent in 2005 — an effective 57 percent increase in consumer preference for debit card-based transactions. In addition, there is a movement towards online debit card transactions: where 14 percent of buyers prefer to use the traditional signature authorization, 19 percent prefer PIN-based authorization. This is more good news for the retailer. Offline debit transactions (debit card signature-based transactions that can be processed 'offline' from the traditional ATM card networks) incur interchange fees as set by the card associations. But the fees for online pin-based debit transactions, established by the bank ATM network, are traditionally lower.

Online debit cards require a consumer to enter their personal identification number (PIN) at the payment terminal, which is encrypted and combined with payment information. The information is then passed through the ATM networks directly to the issuing bank to verify the balance and debit the account. This process helps reduce both fraud and risk. And payment is guaranteed and received an average of two days earlier than offline debit or credit transactions, helping improve the cash flow of the retailer.

There is one potential barrier to maximizing savings with online versus offline debit transactions. With traditional PIN pads and point-of-sale (POS) systems, consumers select the method of processing the transaction — credit or ATM/debit. A consumer using an ATM card may select credit card instead of debit on the payment terminal, which would then incur the higher per transaction costs. Technology savvy retailers are now taking files containing offline debit card numbers, known as bank identification numbers (BIN) files, from their payment processor. This information is installed on the retail store host server or directly onto the payment terminals. With this information available, the distinction between credit cards and offline debit cards can be made at the point of sale. Once a card is identified as an offline debit card, the consumer can be prompted to enter their PIN as an online debit transaction, ensuring that the merchant incurs the minimal processing fee.

Merchant influence over payment costs is increasing

Technology advances now give merchants the ability to offer customers all of today's payment options on a single payment device. This provides added convenience for customers, who can now choose their preferred method of payment, rather than select from the supported payment types. It also provides an opportunity for merchants to influence the type of payment customers select, helping to convert more expensive payment types (offline debit) to less expensive payment types (online debit) and reducing the associated costs. Costs for each type of transaction are shown below in Figure 2.

Figure 2:

Total Cost per Transaction	
Cash	$0.20 - $2.00 per transaction
Online Debit	$0.30 - $0.90 per transaction
Check	$0.50 - $1.50 per transaction
Offline Debit	$0.80 - $2.00 per transaction
Credit	1.2% - 2.5% of total credit transaction revenue

Return-on-Investment example: specialty store cost reduction

A specialty chain with 200 stores generates $580 million (USD) in revenue each year and has an average transaction amount of $50. Prior to deploying PIN-capable payment terminals, the chain had a payment transaction mix of 35 percent credit, 20 percent offline debit, 20 percent check and 25 percent cash. After deploying PIN pads and online debit capability, the payment mix demonstrated a dramatic reduction in the use of the costlier offline debit cards.

Figure 3:

Transaction Type	Before Online Debit (%)	After Online Debit Deployment (%)
Credit	35.0	32.5
Offline debit	20.0	10.0
Check	20.0	17.5
Online debit	0.0	17.5
Cash	25.0	22.5
Total	100%	100%
Payment-related costs		
Best case (lowest rates)	$ 6.03 million	$ 5.34 million
Worst case (highest rates)	$19 million	$15.3 million

As Figure 3 demonstrates, annual payment-related costs for the best case scenario were $6.03 million before implementing PIN debit and $5.34 million after implementing PIN debit for a total savings of over $696,000. With four registers per store or a total of 800 point-of-sale devices, $600,000 was spent on PIN debit-capable signature capture terminals, providing a return on investment (ROI) in just over 10 months. For the worst case scenario, the terminals would pay for themselves in less than two months.

Online receipts and signatures

In cases of disputed charges, receipt retrieval and return are critical and potentially costly parts of the credit card acceptance process. In accordance with the merchant's agreement to accept credit card payments, the merchant has a limited number of days to retrieve and return a copy of the receipt with the consumer's signature if the card was present during the purchase transaction. If the merchant does not find the receipt or return the receipt within

the allotted time frame, the bank automatically debits the merchant's account (called a charge back) and issues the credit to the consumer. Not only does this result in a lost transaction value, there may also be bank and processor charges as high as $25 per incident. Using signature capture at the point of sale, electronic receipts and signatures are stored online. By accessing the receipts through a PC as needed, the administrative costs and write-offs associated with receipt retrievals and related charge backs can be dramatically reduced and provide an increasing ROI for merchants.

The return of the Smart Card…

Despite unfavorable results in the past, card issuers are starting to aggressively deploy smart credit cards with an embedded RFID chip. Industry sources estimate that over 17 million cards have been issued in the United States since mid-2005, and 3.3 billion smart cards were shipped worldwide in 2006.[1]

The resurgence of smart cards is largely attributed to issuers following the success of the Blue card, with its chip as a key differentiator. Other factors include the reduction in chip card costs, an increase in Internet-enabled devices such as PCs, mobile phones and TV set-top boxes, advancements in point-of-sale capabilities and Internet shopping.

While all of these cards can be processed as traditional credit cards with magnetic stripe reading at the point-of-sale, the chip is also capable of additional applications such as loyalty programs, coupon storage and redemption, security and biometric authentication and receipt capture. These applications are developed, downloaded and utilized in specialty smart card readers attached to the consumer's PC or the retailer's point-of-sale system.

To take advantage of these smart card capabilities, card issuers and card associations (VISA and MasterCard) have created specialty chip-based

Using signature capture at the point of sale, electronic receipts and signatures are stored online, which can dramatically decrease the time and costs associated with receipt retrievals and related charge backs.

1 - Smart Card Alliance web site, January 2008

programs to stimulate card use at the point-of-sale. Merchants with chip card readers may obtain incentives to support these programs.

Smart cards are currently used worldwide for many applications, including healthcare, financial, transit, telecommunications and secure identification. Examples of current uses most common in the United States include:

- The U.S. Federal Government Personal Identity Verification (PIV) card being issued by all Federal agencies for employees and contractors.
- The new ePassport being issued by the Department of State.
- Payment cards and devices being issued by American Express, Discover Network, MasterCard and Visa.
- Transit fare payment systems currently operating or being installed in such cities as Washington, DC, Chicago, Boston, Atlanta, San Francisco and Los Angeles.
- The Subscriber Identification Module (SIM) in mobile phones.
- Pay (satellite) TV security cards in set-top boxes for cable and satellite television subscribers.

…closely followed by "contactless" payments

VISA defines proximity payments as "payments that take place when the consumer is physically close to the seller's terminal." The transactions are conducted with credit, debit or checking account data being transmitted securely from PDAs, cell phones, or other infrared-equipped mobile devices to infrared capable point-of-sale payment terminals. Similar to "beaming" business cards between PDAs, this approach leverages the more than 300 million infrared devices in the marketplace.[2]

While this is not currently an active payment method, Gartner projects that the number of consumers using mobile phones to shop will increase at an average of more than 25 percent per year through 2012.[3] Companies such as VISA, Palm™, VeriFone® and Motorola® are active on a standards committee working in conjunction with the Association for Retail Technology Standards (ARTS). As with the smart card, infrared payment devices are capable of evolving functionality that benefits both consumers and retailers. With loyalty, passwords or PIN numbers, coupons, digital receipts and other information can all be sent to and from these devices.

Beyond payment transactions at the payment terminal

Today's payment terminals are no longer just single-function devices, solely devoted to payment transactions. Today's terminals can allow retailers to enhance customer service by using the payment terminal display to present customers with surveys and special offers. For example, a one minute survey might ask your shoppers if the store was clean, if they were able to easily find what they needed, or if the store associates performed above or below their expectations. This information can be used to improve the store environment and shopping experience in the future. In addition, based on customer criteria — such as loyalty card information, amount of purchases in a given month or items purchased — retailers can present customers with specials and discounts to help increase the size of the sale and incent future visits.

Biometrics address growing challenges

Security has taken on new importance and few technologies have garnered as much interest as biometrics. This technology includes fingerprint recognition, signature verification, voice print verification and facial or iris recognition. Industry analyst expectations for growth in the biometric market are clearly optimistic, with global revenues estimated to reach approximately $10 billion annually by 2015.[4]

While this technology is expected to be applicable in areas of high security risk such as airport check-in, some retailers are applying biometrics in less intense environments. With signature capture already at the point of sale, one major U.S. retailer compares an employee signature on high-fraud risk transactions, such as voids and credits, against that employee's signature template. The results are used to successfully target loss prevention resources towards real perpetrators of fraud.

2 - Infrared Data Association web site, February 2008

3 - Gartner Industry Research; Predicts 2008: How Shoppers and Technology Will Change Retail; November 21, 2007; ID Number G00153165

4 - Acuity Market Intelligence, The Future of Biometrics, May 2007

Summary: all payments are not created equal

Advances in electronic and technology-based payments have accelerated and will continue to change. However, all payments are not yet equal. Key opportunities exist for merchants to shift payment mix or reduce payment-related costs in two areas: the cost differences between online debit and offline debit in addition to back office costs associated with credit create opportunities. Furthermore, point-of-sale investments that fulfill these opportunities can continue to pay dividends by allowing the merchant to participate aggressively in emerging payment methods such as smart cards and proximity payments.

Planning for the integration of new payment methods is challenging for most merchants today, in spite of the strong business case for online debit and signature capture. To facilitate a smooth transition, point-of-sale terminal manufacturers are now combining signature capture and online debit functionality into a wide range of their offerings. And many companies also offer complementary software and services for receipt retrieval and managing an offline debit card database to further encourage PIN capture at the point of sale.

Point-of-sale terminal manufacturers are also incorporating technology for future payment capabilities without a significant impact on terminal costs. Smart card readers and infrared ports are appearing on payment terminals to provide merchants with investment protection, future functionality and the ability to participate early in incentives and marketing programs offered by the card associations. These enhancements deliver an unprecedented level of future compatibility for retailers, making it easier to plan and implement new capabilities to point-of-sale systems.

Innovative transaction systems from Motorola

Motorola offers innovative end-to-end advanced payment solutions designed to allow retailers to improve customer service, meet new industry regulations and reduce the costs associated with payment transactions. Our payment terminals offer the rich functionality required to offer your customers all of today's available payment methods — including signature capture; keypads for PIN entry and compliance with the American Disabilities Act (ADA); magnetic stripe readers; smart card readers; near field communications (NFC) ready and biometrics capable. Our advanced technologies will help you improve efficiency at the point-of-sale — regardless of which type of payment your customer selects. In addition, our devices give you the ability to interact with your customer, right at the point of sale. You can present your customers with surveys, discounts, specials — and even a short form to apply for a loyalty program or store credit card. You can also compile valuable information on your customers to assist in the development of successful targeted one-to-one marketing campaigns. And our advanced functionality will help your retail establishment achieve cost-effective PCI compliance.

To find out how Motorola's payment solutions can help improve customer service and reduce costs in your retail establishment, please visit us on the web at www.motorola.com/retail or access our global contact directory at www.motorola.com/enterprise/contactus.

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