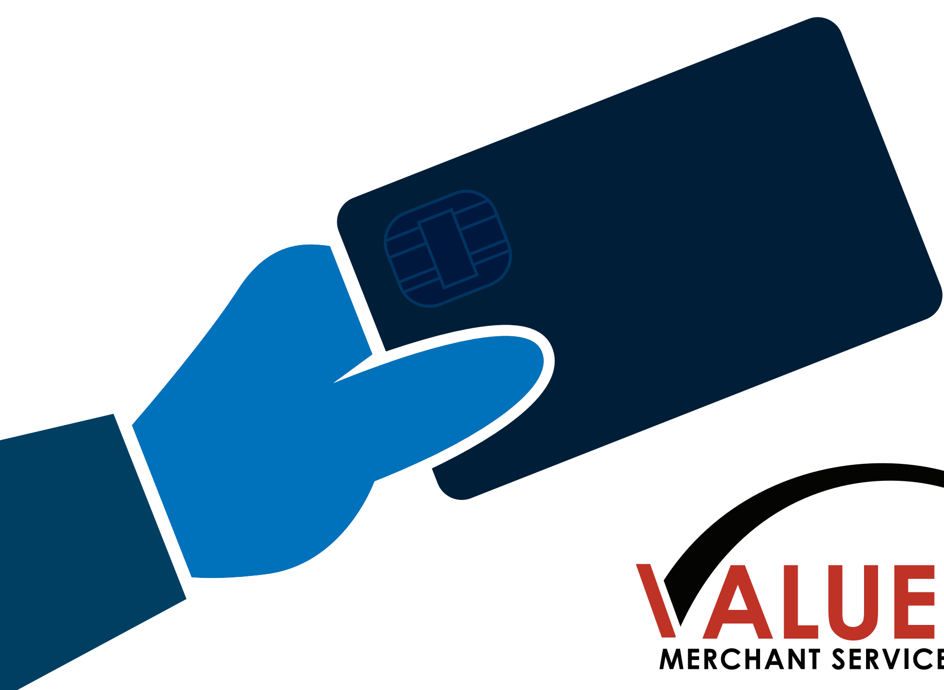
Credit Card *Processing* 101



VALUED MERCHANT SERVICES

Overview

Credit Card Processing 101 is your go-to handbook for navigating the payments industry. This document provides a quick and thorough understanding on how businesses accept electronic payments, along with related facets like the interchange process and PCI compliance.

What is payment processing?

In the most basic terms, payment processing is the automation of electronic payment transactions between two parties. These transactions are handled either through payment hardware or software, which processes, verifies, and accepts or declines credit card transactions on behalf of the merchant or business.

Table of Contents

Who's Who in the Payment Process

There are many parties involved in the payment process. They are:

Issuing Bank – The Issuing Bank is the financial institution that provides individuals with credit cards. For example, if you have your checking and savings accounts at PNC Bank, it is likely you also received your credit card from there. In this case, PNC is the Issuing Bank. The Issuing Bank also receives the majority of the interchange fee charged by the Card Associations.

Card Associations (Visa/MasterCard/Discover/American Express) - The Card Associations work with government agencies to create rules regarding credit card use, acceptance, and security. The Card Associations also develop the interchange rates.

Processors - Processors handle the authorization and settlement of a credit card transaction. Processors connect directly to the Card Associations and route transactions to the appropriate network. The Merchant is typically connected to the Processor through whatever hardware or software is being using. When a Merchant "batches" transactions and sends to the Processor at the end of each work day, the Processor will settle (move the funds) from Issuing Bank to the Sponsor Bank, calculate interchange fees, and provide the Merchant and Card Associations with processing data.

Sponsor Bank – The Sponsor Bank accesses the Card Associations, sets up ACH payments for the Processor, and moves the appropriate funds to the Merchants. The Sponsor Bank is also responsible for paying the Card Associations and the Issuing Bank their share of the interchange fees.

Types of Payment Solutions

Business-to-Consumer

Payment Terminal **-** A piece of hardware that allows a merchant to swipe or key-in credit card information as well as any other information required to process a credit card transaction.

Point-of-Sale (POS) System **–** A piece of hardware similar to a payment terminal that has functionality tailored to the business's need. For example, a grocery store POS system would have a pre-loaded product list for easy checkout.

Mobile Payments **–** The umbrella term for accepting credit card transactions from mobile devices. Methods include QR-Code based acceptance, Near Field Communication (NFC), and Card-Present transactions swiped on a piece of hardware (dongle) plugged into a phone.

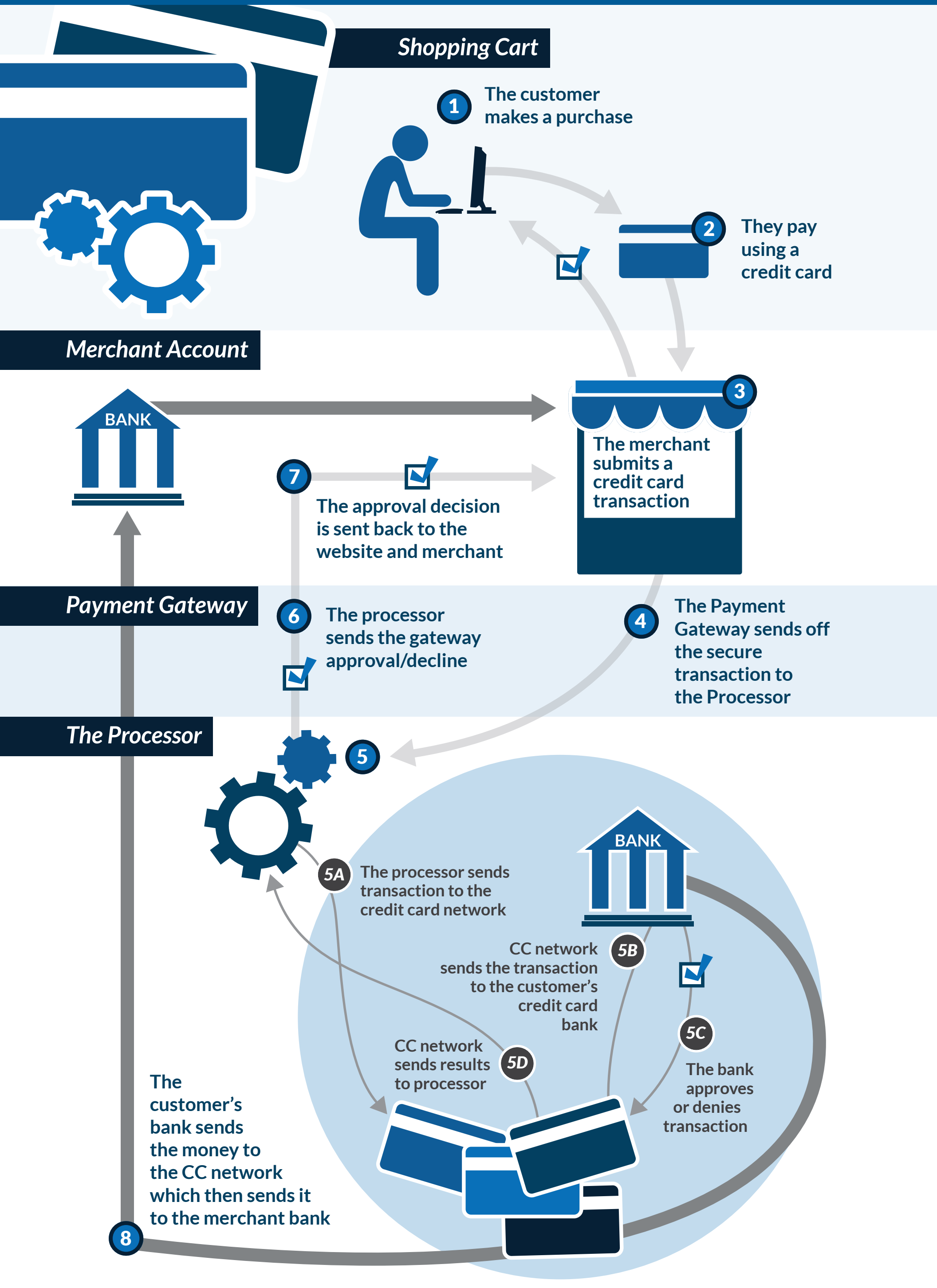
Business-to-Business

Virtual Terminal **–** A Virtual Terminal is a piece of software or web-based application that allows you to accept transactions from your computer. Virtual Terminals are typically used for card-not-present transactions and are taken over the phone or via mail order.

Payment Gateway **–** A Payment Gateway is the connector between a payment application (Virtual Terminal, POS System, shopping cart) and the card processing networks. Typically, a Payment Gateway can be "integrated" into these payment applications using an Application Programming Interface (API).

Integrated Solution **–** For companies that are accepting payments through an online shopping cart or through their Enterprise Resource Planning (ERP) system, an integrated payment solution is preferred. This allows the Payment Gateway to directly connect to your system without having a separate application to accept payments. This minimizes manual labor associated with payment acceptance and increases the accuracy of the reconciliation process.

Inside an Online Transaction



Interchange Process

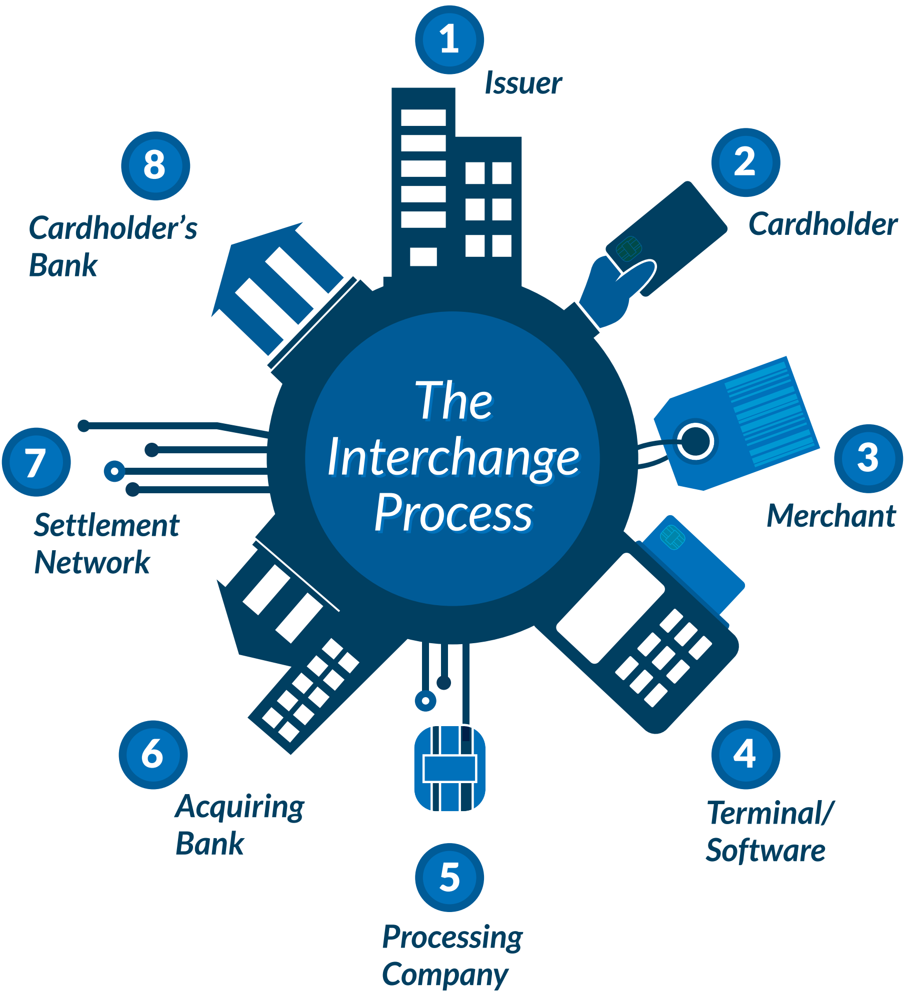
1. *The issuing bank in alliance with the cardholder's bank issues a credit card to the cardholder.*
2. *Cardholder shops at a business that accepts their credit card.*
3. *Merchant asks buyer for payment for purchase; cardholder presents card.*
4. *Merchant transmits credit card data and sales amount with an authorization request to their processing company.*
5. *The processing company routes the transaction to the acquiring bank which processes the transaction, then routes the authorization request to the cardholder's bank. The credit card number identifies the type of card, issuing bank, and the cardholder's account.*
6. *The acquiring bank which processes the transaction routes the authorization request to the card-issuing bank through the settlement network.*
7. *The settlement network transmits the data from the cardholder's bank or issuing bank back to the acquiring bank which routes the approval or denial code back to the merchant's Point-of-Sale (POS) terminal or software.*
8. *The acquiring bank performs what is called an interchange for each sales draft, with the appropriate cardholder's bank. The card-issuing bank transfers the amount of the sales draft, minus an interchange fee to the acquiring bank. The acquiring bank then deposits the amount of all the sales drafts submitted by the merchant, less a discount fee, into the merchant's bank account.*

What to know about Interchange

Interchange represents the fees paid to or collected from the card- issuing banks that provide Visa®, MasterCard®, and Discover® cards. These cards may be in the form of Consumer Credit or Debit cards, Corporate, Business, Purchasing cards, and Reward cards.

Visa®, MasterCard®, and Discover® each have their own interchange programs; combined, there are approximately 300 levels of interchange. It is important to know how your business processes transactions and how they are qualifying so you can determine:

- *The best interchange level eligibility for your company.*
- *How you may reduce your overall processing costs by managing factors which are within your control such as monitoring downgrades, processing Level II and III data, configuring technology properly, transaction timing, operating procedures, and PCI Compliance regulation.*
- *Optimal business rules to ensure the highest level of operational efficiency, interchange optimization, and lowest processing costs.*


1
Issuer
2
Cardholder
3
Merchant
4
Terminal/
Software
5
Processing
Company
6
Acquiring
Bank
7
Settlement
Network
8
Cardholder's
Bank
The
Interchange
Process

What is Interchange Cost Plus?

Merchant accounts operating on an interchange cost plus pricing structure may sound more intimidating, but they are actually much more transparent and less expensive than tiered accounts. Certain payment processors offer an interchange cost plus pricing structure, meaning merchants pay the exact interchange fee in addition to a flat markup to their merchant service provider. This eliminates inconsistent buckets and overpaying for inflated tiers.

Unlike tiered accounts that may have several different rate categories, interchange cost plus accounts only have two rates, the interchange markup percentage and a transaction fee.

For example, a business with an interchange cost plus merchant account with a rate of 0.55% and an authorization fee of $0.15 would pay the wholesale interchange processing rate for every transaction, plus 0.55% and $0.15 per transaction. The percentage portion of interchange plus pricing is commonly referred to as basis point margin. A basis point is equal to 1/100th of a percent.

Until recently, interchange cost plus pricing was only available to businesses which processed high volumes of credit card sales each month, usually $35,000 or more. Monthly processing volume and number of transactions ultimately dictates the processor's interchange markup percentage. However, increased competition in the industry has begun to make interchange pricing available to low volume and new businesses.

Questions you should ask about Interchange and your pricing:

- *Does your current processor offer transparency in their billing, or do they intentionally make it hard for you to understand exactly what you are being charged for on each transaction?*
- *What are you really getting from your processor when they debit your account each month for all of their fees? What have they done to help grow your business?*
- *Does your processor care more about charging you a termination fee to keep your business than earning the privilege of serving your needs?*
- *Do you see your current merchant processor as "just another vendor"?*

What is Tiered Merchant Account Pricing?

Differential Two-Tier Merchant Account Rate Structure:

- *Qualified Discount Rate* ***(Lowest)***
- *Non-Qualified Discount Rate* ***(Qualified Discount + Differential Interchange Amount + Differential Surcharge = Final Rate)***

Bucketing Three-Tier Merchant Account Rate Structure:

- *Qualified Discount Rate* ***(Lowest)***
- *Mid-Qualified Surcharge* ***(Qualified Discount + Mid-Qualified Surcharge = Final Rate)***
- *Non-Qualified Surcharge* ***(Qualified Discount + Non-Qualified Surcharge = Final Rate)***

Cumulative Three-Tier Merchant Account Rate Structure:

Some processors have additional variations of tiered pricing by adding the cumulative total of downgrades and adding additional transaction fees.

- *Qualified* ***(Lowest)***
- *Mid-Qualified* ***(Qualified + Mid-Qualified Surcharge = Final Rate)***
- *Non-Qualified* ***(Qualified + Mid- Qualified Surcharge + Non-Qualified Surcharge = Final Rate)***

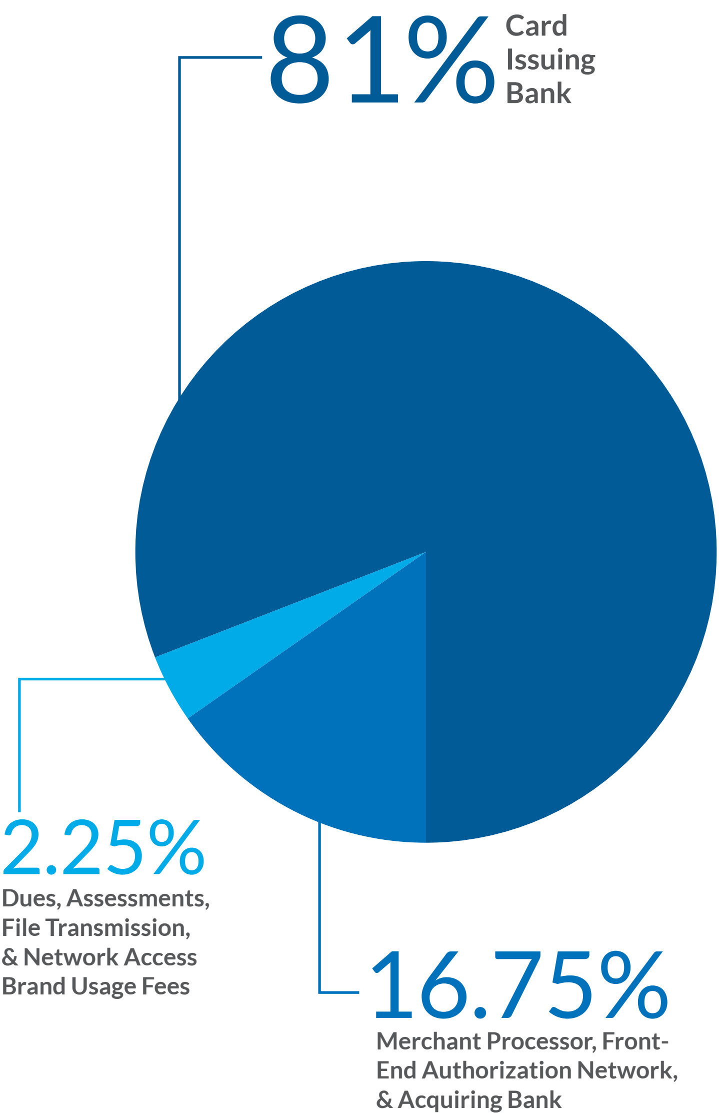
Six-Tier Merchant Account Rate Structure (credit and debit transactions are separated):

- *Qualified Credit Discount Rate* ***(Lowest)***
- *Mid-Qualified Credit Surcharge* ***(Qualified Discount + Mid-Qualified Surcharge = Final Rate)***
- *Non-Qualified Credit Surcharge* ***(Qualified Discount + Non-Qualified Surcharge = Final Rate)***
- *Qualified Debit Discount Rate* ***(Lowest)***
- *Mid-Qualified Debit Surcharge* ***(Qualified Discount + Mid-Qualified Surcharge = Final Rate)***
- *Non-Qualified Debit Surcharge* ***(Qualified discount + Non-Qualified Surcharge = Final rate)***

Interchange Cost Plus vs. Tiered Merchant Account Pricing

Pricing Element	*Tiered/ Bucketing*	*Interchange Cost Plus*
Tiered/Bucketing Pricing		
Inconsistent Buckets	☑	☐
Percentage + Transaction Fee Based on Processor's Formula	☑	☐
Often Padded April and October with Interchange Adjustments	☑	☐
Fees Based Upon Gross Sales	☑	☐
Pass-Through Cost Plus Pricing		
Published Rates on Visa.com and MasterCard.com	☐	☑
Fixed Rate Above Actual Costs	☐	☑
Percentage and Transaction Fee + Actual Interchange	☐	☑
Fees Based Upon Actual Card Type and Qualification	☐	☑
Manageable Based Upon Card Type	☐	☑
Fees Based Upon Net Sales	☐	☑
Cost May Decrease with Interchange	☐	☑
Adjustments by Visa®, MasterCard®, and Discover®	☐	☑
Detailed Card-Level-Billing	☐	☑
Transparent Easy to Understand	☐	☑
Lower Overall Cost	☐	☑

Where do merchant processing fees and interchange costs end up going?*



**Pricing calculations and bucketing strategies vary widely by processor; card type qualifications are for illustration purposes only and do not necessarily represent any specific service provider.*

B2B Credit Card Processing

Credit Cards are a common form of payment for Business-to-Business companies. The costs associated with accepting these transactions can be substantial, and it is important to understand certain payment acceptance procedures to ensure your company is qualifying for the lowest rates possible. B2B transactions are more commonly known in the payments industry as “Level 2” and “Level 3” transactions, with Level 2 and Level 3 data referring to the additional data fields that need to be transmitted to the processor to qualify for lower interchange rates.

Level 2 / Level 3 Transactions

Level 2 and Level 3 Transactions are the two different types of Business-to-Business transactions. While Level 2 data includes merchant establishment information and cardholder information, Level 3 data includes line-item detail with product and shipping information. The cards typically utilized for these transactions are business purchasing cards and government cards, for example the GSA SmartPay card.

Interchange Optimization

It is important in a business setting where Level 2 and Level 3 transactions are accepted to proactively manage your interchange costs to ensure you are qualifying the lowest rates possible. For some transactions with a particular type of credit card, the transaction can fall into five different categories (with five different associated fees) based on the information transmitted to the Card Processing Networks. If certain data-points are missing, interchange costs can increase more than 1.00%. There are ways to configure the payment application to require these fields or alternative solutions to ensure your business is qualifying at the lowest rates possible, making it imperative to work with a payments provider that understands these complex transactions.

Transaction Level Requirements

Data Type	*Level 1*	*Level 2*	*Level 3*
Merchant Name	Y	Y	Y
Transaction Amount (Total)	Y	Y	Y
Date	Y	Y	Y
Tax Amount		Y	Y
Customer Code		Y	Y
Merchant Postal Code		Y	Y
Tax Identification		Y	Y
Merchant Minority Code		Y	Y
Merchant State Code		Y	Y
Ship from Postal Code			Y
Destination Postal Code			Y
Invoice Number			Y
Order Number			Y
Item Product Code			Y
Item Commodity Code			Y
Item Description			Y
Item Quantity			Y
Item Unit of Measure			Y
Item Extended Amount			Y
Freight Amount			Y
Duty Amount			Y

Europay® Mastercard® Visa® (EMV)

Chip technology is the latest advancement in the global payments landscape. EMV offers various security features over the traditional magnetic stripe card, preventing card present fraud including card skimming and duplication. A security chip in the card uses cryptography to ensure cardholder verification, validate the card issuer, and verify sensitive data stored on the card. During an EMV transaction, the chip determines the appropriate rules of payment and the terminal enforces these payment rules.

Benefits

- *Global interoperability*
- *Enhanced security*
- *Application processing controls (restrictions or rules can be placed on chip)*
- *Offline data authentication capable*

Incentives for Merchants

A liability shift will take place, transferring accountability for fraud from the card issuer to the merchant or merchant acquirer who has not adopted EMV enabled terminals. With this liability shift, Visa and MasterCard will offer reduced compliance validation requirements which will eventually eliminate the annual mandate of validating PCI DSS compliance.

An upgrade to EMV enabled terminals will prepare merchants with the functionality to accept Radio Frequency Identification (RFID) and Near Field Communications (NFC) mobile payments.

Account Data Compromise (ADC) Relief Waiver for PCI DSS Validation

October 2013, 50% relief if:

- *75% of transactions processed are initiated at EMV compliant terminals*
- *Merchant has not been involved in a security breach*
- *Merchant must continue to comply with PCI DSS*

Program enrollment required October 2015, 100% relief if:

- *95% of transactions processed are initiated at EMV compliant terminals*
- *Merchant has not been involved in a security breach*
- *Merchant must continue to comply with PCI DSS*
- *Program enrollment required*

EMV Timeline

Visa, MasterCard, Discover & American Express' roadmap to EMV

April 2013

Visa	MasterCard	Discover	AmericanExpress
Acquirers and sub-processors must support EMV	*Acquirers and sub-processors must support EMV*	*Acquirers, sub-processors and direct connect merchants must support EMV data elements*	*Acquirers and sub-processors must support EMV, including mobile*

October 2013

MasterCard

Merchant Account Data Compromise (ADC) relief (Phase I)

October 2015

Visa	MasterCard	Discover	AmericanExpress
US Liability Shift [1]	*US Liability Shift* [2] *Merchant ADC Relief (Phase II)*	*US Liability Shift* [2]	*US Liability Shift* [2]

October 2017

Liability shift extends to Automated Fuel Dispensers

[1] Liability for counterfeit transaction sifts to party who does not have support for EMV

[2] Liability for counterfeit transaction shifts to party who has least-secure support for EMV

PCI Compliance

All merchants, whether small or large, need to be PCI compliant. The payment brands have collectively adopted PCI DSS as the requirement for organizations that process, store or transmit payment cardholder data. PCI Security Standards Council™ is responsible for managing the security standards while each individual payment brand is responsible for managing and enforcing compliance to these standards.

Secure Your Business Data

Data Breach: A Very Real Threat

Ensuring the security of electronic payments continues to create new challenges. Criminals are increasingly sophisticated in carrying out network intrusions, wiretapping attacks, and device tampering schemes. Within both the eCommerce and card present spaces, criminals have become more adept at identifying and exploiting security weaknesses to steal valuable cardholder account data and perpetrate fraudulent transactions.

Since early 2005, at least 1.1 billion records of sensitive information have been compromised in publicly announced data breaches.

How data is breached:

- *Hackers who exploit networks and Internet connections without the latest security updates.*
- *Physical losses carried off on flash drives, CDs, DVDs or electronically transferred by dishonest employees.*
- *Third-party thieves who troll trash bins for discarded computers, receipts, and paper records.*

Safeguard Data Entrusted to You

The reality of credit card fraud is not if, but when.

- *You can incur thousands of dollars in costs for audits, forensic investigation, card monitoring, replacement costs, and fines imposed by the card brands.*
- *Your faithful and loyal customers' identity may be compromised.*
- *Small to mid-sized businesses' level of security is easier to target than the large box stores' systems.*
- *The cost of a Level-4 data breach can be $25,000 to $50,000, without coverage, a data security breach can easily put you out of business.*

Build Consumer Confidence

The long-term consequences of non-compliance can be disastrous.

- *A single incident can severely damage your reputation and hinder your long-term ability to conduct business effectively.*
- *Account data breaches can lead to catastrophic loss of sales resulting in significant damage to your relationships and good standing in the community.*
- *Possible negative consequences also include: lawsuits, insurance claims, cancelled accounts, payment card issuer fines, and government fines.*

TOP 5 COMPROMISED INDUSTRIES

1. *Retail*
2. *Food & Beverage*
3. *Hospitality*
4. *Financial Services*
5. *Nonprofit*

Notes

Notes