Crimson Times
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IF YOU DON'T KNOW WHERE YOU ARE GOING, ANY ROAD WILL GET YOU THERE.

IN THIS ISSUE

Crimson Times Newsletter

by Angelo Kalpakis (akalpakis@crimsontt.com)

Security seems to be the topic of conversation for so many business and organizations from all forms of merchants. I'm sure many readers have had some breach or have heard of friends that have had card numbers, cash or some other form of monetary violations occurring throughout the years.

The credit card companies are doing everything they can to counter the criminals, but they tend to move at a very slow pace to implement changes.

A few years ago, while at the NRF show, we here at Crimson stumbled across a new technology known as P2PE (Point to Point Encryption). This process encrypts the credit card details during card swipe and a token is then assigned to the data. The token is submitted to the credit card provider and decrypted only once it arrives behind the providers firewall. How safe is this? Well, Crimson is in the process of rolling out 4 customers using this technology. Nothing is guaranteed, but this is a step closer into the right direction.

Crimson has invested a lot of time and effort to bring this P2PE technology into existence with the ITB Retail Suite. Certification is a much more involved process but being able to inform your customers that this technology is many steps closer to ensuring their information is safe is a priceless venture.

This certification process has kept the staff at Crimson extremely busy but not limited us in achieving some much needed goals for the future of the company and the product. To say we have been busy is an understatement. Everything from new development to new customers to demos to marketing direction; everyday brings a new challenge and experience that you cannot put a number or dollar figure on. Dave and I started Crimson Transaction Technologies back in 1998 supporting legacy based customers using old DOS software inherited from our former employer (REF Retail Systems). In 2003, we rolled out our first installation with BC Moore & Sons down in the Carolinas. Three years of intense development and planning went into the initial product resulting in a very stable and robust environment we could market and sell. The first store went live on October 19 and I made it a point to be the first transaction to register on our system, actually it was the 4th. The first 3 transactions resulted in a configuration problem. We here at Crimson are always looking at ways to grow the business and bring on new customers and personnel to help with the foundation Dave and I had originally established some 11 years ago.

In the coming months, we will be making a major announcement that will guide us towards the next series of milestones.

Quote

"Yesterday's home runs don't win today's games."
- Babe Ruth, Former Hall of Fame Baseball Player

The Evolution Of Credit Cards

A Historical Perspective On Credit Cards.

by Noah Shelson (NShelson@crimsontt.com)

It is kind of hard to fathom a time in history when the only form of currency was a barter exchange. "I'll take one goat for a dozen chickens". Obviously, this method would not carry us into the future, but the advent of a currency system was born to bridge the gap the barter system left behind. Monetary currencies were implemented to give each desired item a value and to make prices consistent, whereas in the past the price of a goat could be exchanged for a dozen chickens or a dozen eggs. Now there is an exact calculated method for payment and transactions, as well as the ability to purchase goods and services without physically handing over money or a check and solely on the basis of credit.

It was not until the late 1800's when the concept of credit was created for the purchasing and exchange of goods. It was at this time that 'credit coins' and 'charge plates' were utilized as currency in place of money or a written check. It was not until the early 1900's when oil companies and department stores began issuing their own 'propriety cards'. These cards were only accepted at the business that issued the card and in limited locations and with limited availability. These cards were created to develop customer loyalty and improve upon the stores' customer service and were not primarily used for the convenience, the purpose credit cards have today.

By 1946, the use of the propriety cards was becoming widespread and the concept of purchasing goods on credit caught the eye of a banker in Brooklyn, New York by the name of John Biggins. Biggins introduced the first bank card called 'Charg-it'. When a customer would use the 'Charg-it' card, for a purchase, the bill would be sent to Biggins' bank branch and the bank would reimburse the merchant and obtain payment from the customers. The major drawback with the 'Charg-it' system was that all purchases had to be made locally and only those with an account at Biggins' bank could use the 'Charg-it' card.

Shortly after Biggins became a name with the 'Charg-it' card, a man named Frank McNamara had a business dinner in New York City. When his bill arrived, McNamara realized he did not have his wallet on him. Managing to find a way to cover the cost of his meal, McNamara thought there needed to be another option to cash. McNamara and his business partner Ralph Schneider invented the Diner's Club Card. The Diner's Club Card debuted as a small cardboard card designed and mainly used for travel and entertainment purposes. However, it was the first credit card in 1950 that had widespread use.

By 1961, the Diner's Club and American Express (formed in 1850 as an alternate option to the U.S. Postal Service) were now offering plastic credit cards. These cards were designed for the customer to pay his full month's bill at the end of the month and no balance carrying over to the following month. This was referred to as the 'Closed Loop System'. In the Closed-Loop system, the merchant, consumer and issuer are all intricate. In this structure, the issuer both authorizes and handles all aspects of the transaction then settles directly with both the consumer and the merchant.

To contrast the Closed Loop system, MasterCard introduced the 'Revolving Balance'. With this method, there was no longer a requirement for the consumer to pay the full balance of his bill at the end of each month. The revolving balance now placed a carried-over risk and interest charge on the outstanding balance. It was at this same time when Bank of America introduced the general-purpose credit card that eventually franchised out to BankAmericard brand (present day Visa) and operated in the same fashion as their competitor MasterCard.

MasterCard and the company that will one day be known as Visa did not utilize a Closed Loop System. Instead, they used an Open Loop system, which required interbank cooperation and the transferring of funds. American Express and Discover Card are proponents of the Closed Loop system and continue to employ this system. It was not until 1987, when American Express issued credit cards that allowed for customers to pay over-time and not at the end of every month.
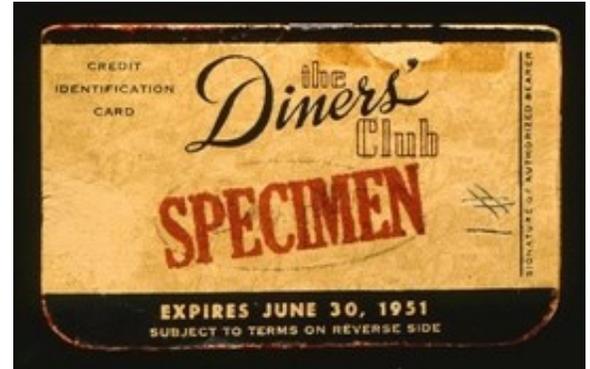
As time went on and the credit and processing environment changed, the makeup of the industry had to evolve as well. For instance, outside service companies began to sell processing services to Visa and MasterCard association members. This reduced the costs of programs for banks to issue cards, pay merchants and settle accounts with cardholders thus allowing greater expansion of the payments industry. Because there were more avenues to acquire a credit card, companies no longer offered one type of card. Companies began to offer different credit cards with various functionalities including reward air-miles and bonus-point systems.

Security and fraud heavily contributed to the great evolution of the credit card industry because advancements in technology led to credit card fraud and other illegal activities. As a result, rules and standard procedures were developed by the credit card companies for handling the bank card paper flow in order to reduce fraud and misuse. These standards continually updated and modernized to the trends that occur in the industry. This same contingent of credit card companies developed an arbitration procedural system to dispute charges between the customer and merchant.

As the credit card evolved from its early days to the complex and secure form we use today, credit card companies learned to adapt to their environment and appease the masses. It is hard to imagine going to a retail-store these days and having only the ability to pay with the local currency. Credit cards are widely accepted and most people prefer to purchase goods with them. But as hard as it is to imagine the days when a local currency was your lone option, try envisioning going to your local car dealership and offering him goats in exchange for a car!

Preventing The Hack

What Does The Future Hold For Credit Card Security and Design?

by Noah Shelson (NShelson@crimsontt.com)

Advancements in technology have made credit card fraud and misuse a major dilemma for retailers, cardholders and the credit card companies themselves. Most notably during the Christmas season of 2013, two of the United States' major retailers (Target and Neiman Marcus) were victimized by hackers who stole thousands of cardholder's personal and financial information. In addition, in June 2014 P.F. Chang's China Bistro announced that they are investigating whether the restaurant franchise was the latest target of a data hack after thousands of stolen credit cards appeared for sale online. Of all the credit cards stolen, the common link was the credit card's use between March and May of this year in the restaurant's multiple locations. Unfortunately, this demonstrates that retail is not the only industry vulnerable to computer hacks looking to steal customer data.

How is it possible in this era of technological advancements have we continued to use outdated credit card technology that is susceptible to these criminals? Magnetic stripe credit cards were meant to be safe when they were initially introduced; however, they are proving to be extremely flawed in our modern day. The exposure to potential security breaches through the magnetic stripe and signature credit card, should go the way of the Dodo bird and make way for computer chip security cards with pin numbers, known as EMV. EMV pays homage to the voluntary industry efforts by Europay, MasterCard and Visa in its creation. The EMV endeavour was a complete effort by these industry leaders and not powered by federal government regulations.

In 2002, the three companies agreed to collaborate and develop standards to encrypt chip on their credit cards differently. The chip encrypts data differently for each transaction, making it more effective in preventing fraud; however, it is not a complete remedy to the fraud dilemma.

Outside of the United States of America, most of the developed world, including Canada, has already adopted new versions of everyday credit cards that feature an EMV chip card for security. The countries recognized that credit card fraud was rising too quickly to not make progress and adapt to technology. However, the chip and pin solution is not a cure-all from fraud either. Chip and pin fraud has occurred in the other countries but the rate of occurrence is significantly less than that of the stripe and signature cards.. In the countries that have adopted EMV chip cards, online fraud increased as the rate of in-store/face-to-face fraud fell.

Another method that is becoming increasingly popular is the no-touch readers known as Near-Fixed Communication Readers (NFC), where customers simply tap their credit card to an NFC Reader. Usually used for purchases under $50, there is no pin or signature requirement. Although this sounds like an easier and faster means to make purchases, it can also be unsecure. Data thieves can simply put their own NFC Reader up against a person's wallet and without his knowledge steal his money. The same issues with fraud apply to applications like Google Wallet which allow the consumer to make purchases with their cellphone. Where available, Google Wallet acts as a credit card where the consumer would simply tap their phone to an NFC or in some other applications prompt a barcode for scanning. This also has its security flaws, because in the common event that someone misplaces their cellphone, whoever finds the device will have access to their credit card and banking information.

If the former and current credit card options are this susceptible to hackers, how can the credit card companies devise new methods and security features to prevent fraud? Many novel concepts have been considered, but none of which have been tested. For instance, fingerprint scanning, voice control or eye scanners can be designed as state of the art security features for credit cards. Instead of using a pin number than can be seen by anybody peaking at your finger movement or relying on a forgeable signature, fingerprints, eyes and voices can be used as ultra-safe measures.

Fingerprints are akin to snowflakes where no two are alike. Imagine making a purchase with your credit card and instead of being asked for a signature or pin, they simply ask for your fingerprint on the sensor and purchase is made. The same concept can be utilized for the eye scan but voices can be duplicated or copied. In order for the voice to be as effective as the fingerprint security, there would need to be an additional element added, such as a pin number or password because the chances credit card hackers contain the same voice and pin is hard to fathom.

Other features that can be implemented to credit cards to assist in security and updating technology could include a small LCD screen on the card that can feature a real-time statement so that if there is a fraud/breach of security the consumer could see it immediately. The LCD screen could also be useful for novelty ideas such as an integrate currency converter. This would be useful when a person is traveling abroad, the card will display the converted amount that will show up on your statement. Another interesting novelty would be to eliminate all the different credit cards and bank accounts and make them all accessible from one card. This multi-channel or multi-account credit card would give the consumer a choice of which account/credit card to use for their purchase.

Futuristic and modernized technology for credit cards is a necessity that needs to be implemented immediately. Companies that are currently and constantly victimized by hackers cannot afford to suffer any more security breaches or consumers will no longer shop in their stores. Hackers will always continue to be relentless in their efforts to steal people's personal information but that just means the credit card companies need to be proactive and always one step ahead.

RSPA Retail Now 2014

The Crimson team is proud to be a part of this summer's RSPA Retail Now Conference and Convention in Kissimmee, Florida. The event will be held at the luscious Gaylord Palms Resort and Convention Center from August 4th to the 6th. Retail Now is a premier event for the retail technology industry and is a prime place to see what is new and exciting in our industry. Please come and visit us at the Wincor-Nixdorf booth and learn about all the new and exciting things we are working on in 2014 and 2015.

IT's COMING.....

Crimson Times
Fourth Edition

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Look For Us At...

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Retail Now 2014
August 4-6, 2014
Gaylord Palms Resort &
Convention Center
Kissimmee, Florida

OMTRA
Fall Conference 2014
September 7-10, 2014
Residence Inn by Marriott
Kingston, Ontario

NRF
NRF Annual Big Show 2015
January 11-14, 2015
Jacob K. Javits Convention Center
New York City, New York

Crimson Transaction Technologies is a privately held software development company specializing in store systems, fee collection systems and secure payment processing applications. The application is ideally suited for non-standard Point-of-Sale requirements and where customers require a high level of flexibility to meet their business requirements.