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trends



THE OFFICIAL PUBLICATION OF THE
ELECTRONIC TRANSACTIONS ASSOCIATION



The State of EMV

**Perspectives on what's
working and what's not
since October 1**

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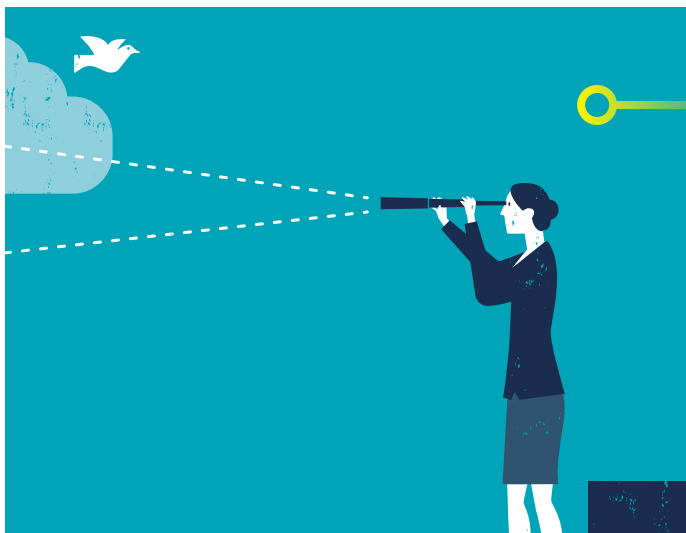


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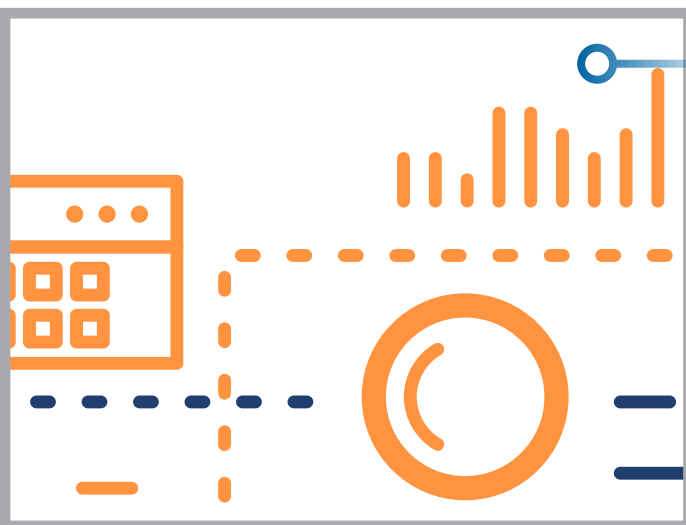
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ETA Is on the MOVE!

ETA has some exciting news for our members: We've MOVED! In order to accommodate our growing staff, ETA's headquarters are now located at 1620 L Street, NW, Suite 1020, Washington, DC 20036.

As the payments industry grows and adapts to keep up with today's rapid changes, so does ETA. Over the past year, ETA membership has expanded to more than 500 global payments technology companies, giving ETA the opportunity to represent the nation's largest and most successful ISOs, acquirers, processors, and financial institutions, as well as the nation's largest mobile network operators, technology companies, equipment manufacturers, security providers, and apps companies.



As our association has expanded, so have our events. This past April, TRANSACT 16, the premier annual gathering of payments technology professionals, brought together 4,000 attendees and 200+ exhibitors to explore the next generation of innovative ideas. The experts and exhibitors featured at the gathering highlighted the latest trends, developments, and innovations in payments technology.

ETA's annual Strategic Leadership Forum (SLF) will be hosted this year at the Breakers in Palm Beach, Florida, October 19-21, and is renowned as the elite meeting for exclusive, executive-level payments opinion leaders. It's the only event where you can engage with the leaders charting the future of our industry.

While TRANSACT and SLF only happen once a year, we recognize that the industry's innovation never slows down. In response to today's fintech revolution, we host TRANSACT Tech events designed to connect ETA member companies, opinion leaders, venture investors, and future customers in payments technology's innovation hubs. Upcoming TRANSACT Tech events include Atlanta, June 28; Boston, September 23; and San Francisco, November 10.

ETA has a broad variety of members, spanning from top payments companies to the most innovative startups. To cater to all our members, we've added numerous policy days tailored to keep lawmakers and decision makers informed of industry issues, including the upcoming Fintech Policy Forum on September 22.

Each of our events is carefully curated to be high impact, high reward for all attendees. Keep your eye on our website for all upcoming opportunities to connect.

ETA's continued growth is aimed at giving our members the best our association has to offer, and we look forward to seeing you at our new location!

Jason Oxman
Chief Executive Officer
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INTELLIGENCE

Retailers' Top Priority? A Seamless Shopping Experience

Fifty-one percent of retailers say that creating a seamless experience across channels is their top priority, according to a recent survey by Boston Retail Partners (BRP). To support a seamless customer experience, 23 percent of the retailers surveyed have already implemented a single, unified commerce platform, and another 52 percent plan to implement one within the next three years. BRP defines unified commerce as leveraging “a single commerce platform to eliminate individual channel silos and solve the omnichannel integration challenges to offer a holistic customer experience across all customer touch points—in real-time.”

“Over the last several months we have read stories that indicate malls and traditional in-store retail are dead; however, in reality, retailers like Zara and Apple are thriving in many of the same mall locations,” says Ken Morris, principal. “The key difference between retail ‘winners’ and ‘losers’ is the customer experience. Going forward, retail success will be dependent on delivering an exceptional customer experience and without it, retailers will fail.”



The goal of the “2016 Customer Experience/Unified Commerce Benchmark Survey,” which polled top North American retailers, was to understand the state of unified commerce and how retailers are enhancing the customer experience. Other key findings include:

- Forty-four percent of retailers will be increasing their focus on customer loyalty in the next 12 months.
- Three quarters of retailers plan to have a single commerce platform within three years.

- Nearly 90 percent of retailers plan to have centralized inventory management, order management system, and integrated customer relationship management as part of their unified commerce platform.
- For 89 percent of retailers, social media will be the predominant forum for brand interaction within the next three years.
- At least 75 percent of retailers plan to have mobile apps for associates and customers within three years.

Fast Fact

Nearly **one third of U.S. consumers (31 percent)** now shop online at least once a week, an increase of 41 percent from two years ago.

Source: “2016 Future of Retail Study,” Walker Sands Communications

Card Issuers' Fraud Losses Quantified

Credit card issuers lose nearly \$11 billion annually due to card fraud, and a new report says that with the implementation of EMV, certain types of fraud will only get worse before they get better.

The report, titled “Issuers Confront Application Fraud and Account Takeover in a Post-EMV U.S.” and released by LexisNexis Risk Solutions, shows that card issuers lose \$10.9 billion a year, or \$9 per card. The vast majority of the loss comes from credit cards, which account for 71 percent, or \$7.6 billion, of all card fraud. Debit cards account for 25 percent of fraud—\$2.7 billion, or \$2.80 per card—while prepaid cards contribute \$0.5 billion in fraud losses.

“EMV chip technology represents the strongest antifraud protection at the POS terminal,” says Michael C. Smith, director of fraud market planning at LexisNexis Risk Solutions. “However, as this new model continues to roll out over the next 12 months in the U.S., issuers expect certain fraud

types to increase. Notably, with the window closing on easily replicable magstripe cards, we forecast a shift and bump in identity schemes—characterized by the use of synthetic identities and the misuse of true identities.”

According to the survey, late adopters of EMV are more concerned about application fraud than early adopters by a two-to-one margin. Smith adds that companies can mitigate these issues by preparing for “the fraud impact of EMV adoption” by bolstering “their application fraud and account takeover prevention capabilities.”

The survey also indicates that 78 percent of issuers are planning significant investments in fraud mitigation this year, with most planning to invest in additional tools. Dynamic and static knowledge-based authentication lead the list of tools targeted for additional investment, followed by mobile carrier identity verification and manual reviews.

China: World's Largest Proximity Mobile Payments Market

The number of people in China using their phones to pay for goods and services at the point of sale more than doubled last year, and by 2020 almost half of all smartphone users in China will be making proximity mobile payments, according to new projections from eMarketer. The firm estimates that more than 195 million people in China are using the technology in 2016—growth of nearly 46 percent over last year.

China is home to the largest and fastest-growing mobile payments market in the world, says an eMarketer press release. Meanwhile, in the United States, 37.5 million people will execute mobile payments this year.

“China’s rapid adoption of proximity payments is in part thanks to its late-mover advantage—unlike the U.S. and other regions, China does not have a strong entrenched credit card culture,” the press release states. “In effect, China has jumped directly from cash to mobile payments.” The firm also reports widespread adoption of Alipay and Tenpay in the country’s urban areas.

“Despite a having a higher penetration rate than the U.S., China’s proximity mobile payments market still remains largely untapped, with usage mostly concentrated in larger cities,” says Shelleen Shum, eMarketer forecasting analyst. “Like in the U.S., the challenge is to get retailers to upgrade their systems to accept mobile payment methods at the POS. The phenomenal opportunity for retailers is that smartphone users in China are more willing to store payment information in their phones and are more willing to experiment with other forms of non-cash payments than users in most other countries.”

eMarketer also predicts that 72 percent of Chinese consumers will make at least one purchase via a smartphone web browser or app in 2016.



Moves & Mergers

Coalfire has appointed Patrick Kehoe as CMO. Kehoe brings 25 years of marketing and consulting experience with high-tech and cybersecurity companies to Coalfire, which specializes in cybersecurity risk management and compliance services. Kehoe previously worked as CMO at Arxan, a cybersecurity application security firm, and as SVP with marketing and partner responsibilities for Siemens Enterprise Communications. Kehoe also worked at GE, Booz Allen, and MarketBridge.

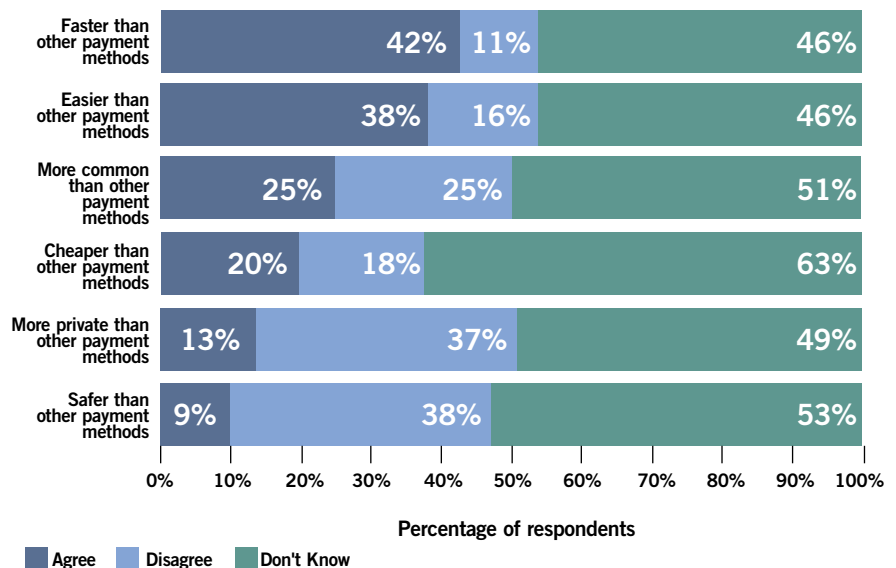
i3 Verticals LLC, a technology and payment processing company headquartered in Nashville, announced the acquisition of Axia Payments LLC. Axia, founded in 1999 and based in Santa Barbara, California,

provides electronic payment processing services to a broad range of business, government, and nonprofit organizations. Axia’s charge volume exceeded \$2.5 billion in 2015. The terms of the deal were not disclosed.

Trustwave has appointed Charles “C.J.” Spallitta as senior vice president of product management. He joined Trustwave from Hewlett Packard Enterprise, where he served as the executive director of worldwide portfolio management and oversaw the complete service lifecycle for all managed services globally, including portfolio strategy, product marketing, analyst relations, and go-to-market strategies.

Infographic

U.S. Consumers’ Perceptions of Mobile Payments



Note: Data may not total to 100 due to rounding

Source: “Who Uses Mobile Payments?” Pew Charitable Trusts

More Than Meets the Eye at TRANSACT 16

ETA's councils and committees address critical business issues

By Amy Zirkle

Attendees at ETA's TRANSACT 16 were offered a tremendous opportunity to hear from a broad segment of industry leaders and key players in the payments ecosystem. Whether listening to compelling keynote sessions presented by executives from companies such as Discover, First Data, PayPal, and Square who oversee dynamic aspects of payments within their organizations; attending informative sessions and panel discussions that provided perspective and insight at a deeper level by touching upon myriad key issues; or feeling the sheer excitement that radiated on the show floor, TRANSACT 16 brought it all together.

But, for ETA members, there was much more to experience. One of the true benefits of TRANSACT is that not only is it a vibrant trade show and conference, it also serves as an opportunity for the many member-led, industry-focused councils and committees to meet in person. During those meetings, members work together to address and consider the vital business issues that drive the payments industry.

The Value of Face Time

As an industry that embraces and utilizes technology to further innovation and expedite operations, there is something to be said for returning to some of the basic principles and approaches that have always been a part of doing business. What instantly springs to mind is the value and importance of having a face-to-face meeting.

For ETA member companies, the beauty of TRANSACT has been the ability to set aside a full day for our industry-focused committees to meet in person and discuss critical issues of common concern. A further benefit of those meetings is the fact that they set in motion connections that build further relationships that can evolve into new business opportunities and networking possibilities. For those payment geeks among us, this takes facial recognition technology to a new level. And this year, there was a lot to discuss.

At a high level, themes and issues emerged that were consistently discussed across several committee and council meetings.

Without a doubt, security remains paramount to the payments industry. We can leverage technology and innovate every day, but, if the promise of data protection slides and security is compromised, no one benefits. Our

members manage a host of security issues on a regular basis, whether dealing with network security or reliability matters.

Payments professionals are reviewing every nook and cranny of this industry to address the relevant aspects of the ongoing EMV migration. That means almost every member category within ETA is touched by this transition—and that means we are intensely focused on the goal of working together as an industry to enable EMV to become part of the payments landscape.

However, when considering the broader payments landscape and the continuing market dynamics accompanied by technological innovation, ETA member groups spent time discussing the future strategic opportunities and potential new developments to take place in payments.

A Closer Look at Committee EMV Work

Last year, ETA established a Retail Technology Committee to focus on identifying current and emerging technology and business-related issues and opportunities resulting from the convergence of traditional POS and integrated payments in the retail space. In short, the committee's focus is on enabling partnerships and exploring economic opportunities for retail technology.

During its meeting at TRANSACT 16, the Retail Technology Committee discussed a variety of issues, including the EMV transition. An important priority for the committee is to develop materials that can serve to educate the small- and medium-sized merchant community to provide guidance on how to effectively implement EMV. In the presence of integrated software vendors (ISVs) and value-added resellers (VARs) within payments, the Retail Technology Committee considered and will continue to explore the possible impact on security issues with the expanding integration of new players in the payments arena. In addition, the group is examining emerging trends in retail technology and the adoption by merchants to expand consumer choice.

Given the role the sales channel plays in the payments marketplace, earlier this year ETA decided to redefine and revise the ISO Committee so that it better reflects the emerging trends and changes that impact payment sales. Thus, ETA launched our Payment Sales and Strategy Committee, which not only looks at issues of concern to payment sales organi-

zations and the legacy ISO channel but also considers what should be the broader strategic focus.

During meetings held before the TRANSACT 16 kickoff, the committee delved deeply into a number of areas of concern with a keen focus on the ongoing EMV migration. For the sales channel, there are a number of items under intense discussion with respect to the migration. For this committee, it is especially vital for those sitting around the table to share insights and offer differing perspectives on how best to manage the migration flow and process. Reviewing common concerns and trying to work together as an industry segment as it comes to terms with the matters related to EMV certification and terminal/software upgrades proved to be a key focus of discussion.

When the ETA Risk, Fraud, and Security Council convened its meeting, the focus again turned to EMV matters. From the perspective of the council, which comprises professionals responsible for compliance and managing risk issues at their organizations, the EMV focus is largely on fully managing the EMV liability shift in an effective manner and further considering what the impact is for chargebacks. The council is working to define best practices to offer industry guidance on the shifting chargeback space in an EMV world.

In addition, the council is looking at a host of security related matters that impact risk and compliance for payment organizations. Whether the attention is on managing holistic security for merchants, addressing new malware trends, or examining third-party risk, the council is furthering its work in this space. A part of those discussions includes additional

attention to the work of the PCI Council and its various certification programs.

Given the dynamic nature of the payments industry, ETA's Mobile Payments Council and Technology Council held a joint meeting to consider a number of issues where common interests reside. Most notably, the group welcomed Brett McDowell, from the Fast Identity Online (FIDO) Alliance, who discussed the work of FIDO authentication and its relevance for enhanced security mechanisms for payments. Again, the theme of security remains an area of key focus.

Accompanying these discussions was dialogue around emerging industry trends and new technology, and how payments are evolving in light of all the exciting changes underway in our industry.

That concludes our quick re-cap of the successful round of industry committee meetings held at TRANSACT 16—but, of course, our work doesn't stop there. In fact, the work actually will accelerate now that we've had the opportunity to meet, work together, and build up our connections.

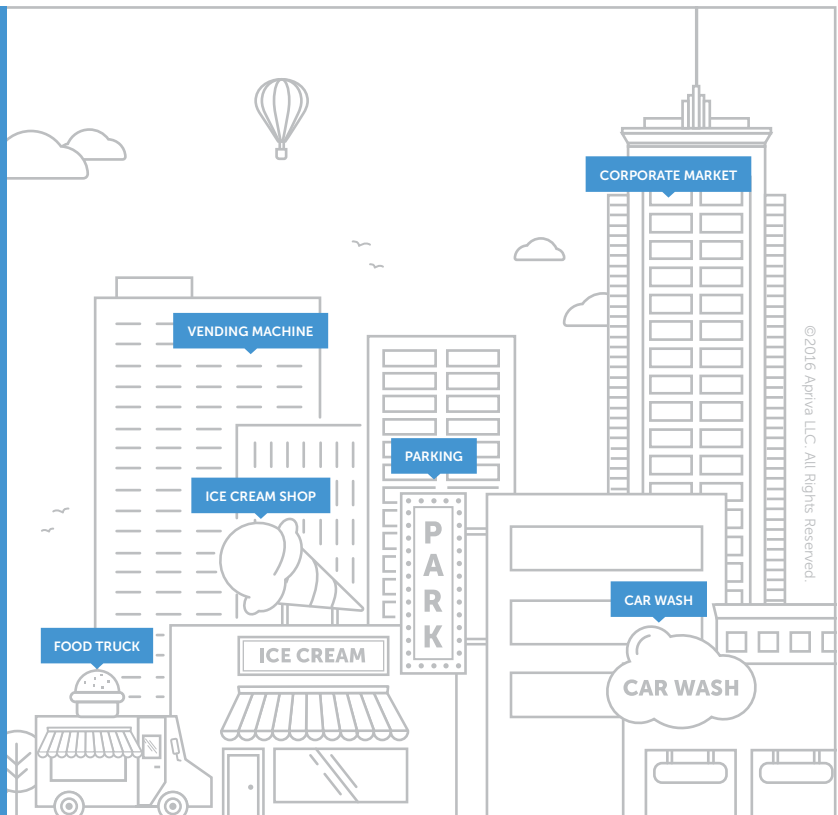
We hope that if you aren't currently actively involved in any of our industry committee and council efforts, that this review of ETA committee work will entice you to think about engaging, volunteering, and working alongside your industry colleagues as we tackle some of these important and challenging issues. **TT**

Amy Zirkle is director of industry affairs for ETA. Reach her at azirkle@electran.org.

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By Ed McKinley

MANAGING EMV EXPECTATIONS

ISOs, acquirers, and other payments pros discuss the chip card implementation process to date

Despite some headlines to the contrary, many observers contend that the U.S. transition to EMV chip cards is proceeding at an admirable pace. For them, October 1 didn't represent a deadline but instead served as a starting line. They point out that it has taken Eastern Europe 11 years to reach 58 percent EMV penetration. By comparison, the United States isn't doing so badly: Thirty-seven percent of all U.S. merchants now accept chip cards, according to The Strawhecker Group, a payments consulting firm.

What's more, defenders of America's progress toward EMV remind detractors that the government didn't issue an EMV mandate to hurry the process. They also note that the

U.S. transition is complicated by the size of the market, which is by far the largest in the world with many more banks, retailers, ATMs, transactions, and cardholders than anywhere else.

"Everybody's working very hard on this—everybody wants this to succeed," asserts one executive from a major processor. Those laboring to make EMV a reality for more retailers include the issuers, processors, and card networks, she says. "Nobody benefits if this process doesn't work."

Chasing Chargebacks and Profits

Although ISOs and acquirers initially feared that issuers might use their newfound power to issue more chargebacks to retailers, it's not really happening, according to Aliko Lia-

dis-Hall, director of underwriting and compliance at North American Bancard, a Troy, Michigan-based super ISO. “From the outset we were convinced there was a ton of abuse happening at the issuer level,” she says.

Diving into the details of chargebacks, however, has shown most were valid. In some cases, someone on the issuing side has classified a charge denied by a consumer as a lost or stolen card, Liadis-Hall says. That incorrectly removes responsibility from the issuer and places it on the retailer. Acquirers and retailers can investigate those cases by checking to see if the issuer replaced the old card with a new one, she says. If that didn’t happen, it’s likely the chargeback was false, she explains, adding that error could account for such cases, too.

Besides guarding against those losses, it makes sense to search for profits. Early in the EMV transition, a few payments industry observers suggested that the technology could potentially be a profit center for ISOs, acquirers, terminal makers, and software suppliers—all of them poised to gain from providing equipment to merchants. However, that has not come to pass for merchant-services companies such as MLS Direct, an Austin, Texas-based wholesale ISO that works with 435 independent salespeople and serves 20,000 merchants. That’s because its clients have become accustomed to the free, or at least inexpensive, terminals dictated by a competitive market, says Andy Pitts, president. “It just depends upon your relationship with each merchant,” he says of the prospect of profiting from the transition. It’s possible, but not easy, to charge merchants for the equipment.

Besides supplying the terminals at little or no cost, ISOs and acquirers have incurred the expense of readying and positioning the equipment, Pitts adds. “People are spending a lot of time and energy getting merchants upgraded.”

On the plus side, time devoted to helping clients get ready to accept EMV cards can help cement customer relationships and, thus, reduce the likelihood that merchants will abscond to another merchant services provider. Pitts contends, “If you handle it properly, the merchant is going to say, ‘Hey, he’s looking out for me.’”

Still, it’s difficult for a salesperson to expedite the EMV process for 200 accounts that took years to amass, Pitts says. “You’re not going to be able to change them all out in a short period of time,” he observes.

Rising to the Challenge

Someone, however, has succeeded in reaching a good portion of those retailers, according to MasterCard, which says that more than 1.2 million merchant locations in the United States have upgraded to chip readers.

Between 30 and 50 percent of MLS Direct merchants have done all they can to prepare for EMV, says Pitts. “The

Facts From Litigation

When difficulties arise, Americans often resort to litigation. So, it should come as no surprise that the long, hard slog toward EMV chip card acceptance is generating court cases and attracting the attention of legislators and regulators. Two Florida retailers have filed a lawsuit against 18 companies with a stake in EMV, and Walmart is suing Visa over the signature versus PIN controversy. Meanwhile, Sen. Dick Durbin (D-Illinois) is calling for the Federal Trade Commission to take action on EMV.

In a class action lawsuit filed March 8 in the Northern District of California, the Florida retailers allege that a long list of payments industry companies violated antitrust law by conspiring to impose the EMV liability shift. Many merchants tried to become EMV-ready before the transfer of liability but could not because of certification problems, the plaintiffs say. The defendants also failed to help bear the cost of the EMV transition, according to the plaintiffs, who are seeking to stop the transition and receive unspecified financial compensation.

The plaintiffs named in the suit—B&R Supermarket, doing business as Milam’s Market, and Grove Liquors—could be joined by literally millions of retailers across the nation, says Xan Bernay, an attorney with Robbins Geller Rudman & Dowd LLP, a San Diego law firm that specializes in securities litigation, antitrust cases, and class actions. Bernay says the law firm represents the plaintiffs and has filed a motion to name two California retailers as plaintiffs, including Rue 21, a national fashion retailer with more than 1,100 stores.

In another case, Walmart alleges in a suit filed May 10 against Visa in New York Supreme Court, County of New York, that the card brand’s insistence on a signature is inhibiting the retailer’s ability to route transactions on a Visa-branded card through any network available on the card.

In a two-page letter dated May 11 to FTC Chairwoman Edith Ramirez, Durbin expressed concern about what he called “problems and delays” in EMV certification that may harm small- and medium-sized businesses. He asked the FTC to search for ways of protecting those businesses. To illustrate his point, Durbin cited the case of a supermarket chain that has allegedly spent \$385,000 on 770 terminals but has been unable to use them because of delays in certification.

other 50 percent probably don’t want to deal with it,” he says. “They’re not getting enough chargebacks for it to make sense to them. I guess it will be a gradual changeover.”

About half of the merchants grasp what’s at issue with EMV, and half remain somewhat clueless, Pitts reports. The smaller merchants tend to pay less attention to the transition than the larger ones do, he notes. The holdouts probably have their reasons and may not cross over into the realm of EMV for three to five years, he predicts. Meanwhile, research and



Bonus Audio Content: Log in and listen to “The Impact of EMV Liability Shift—Lessons Learned Six Months Later” from TRANSACT 16. Visit <http://bit.ly/1UJqVKP>.

data firm Statista forecasts POS terminal adoption to EMV standards in the United States to reach 68 percent this year and 100 percent in 2020.

Still, acquirers and ISOs should keep watch on those retailers that shun EMV, cautions Liadis-Hall. The retailers could later allege in lawsuits that the industry failed to prepare merchants for the transition, she says. Besides, if merchants become unable to meet EMV liability, the financial responsibility shifts to the acquirer, she warns.

Some processors and vendors have problems of their own and simply aren't prepared to accept EMV. "I don't think it matters where the blame is," says one processor. "Some people are quick adopters, and some lag behind. They're all doing what they can."

INSTEAD OF THROWING UP THEIR HANDS IN DESPAIR, HOWEVER, ISOS AND ACQUIRERS MIGHT CONSIDER ADVISING THEIR MERCHANTS TO USE SIMPLE EMV-CAPABLE TERMINALS ... FOR THE TIME BEING.

MLS Direct uses four processing platforms, but not one has succeeded in getting ready for every situation that can arise with EMV, Pitts says, speaking seven months after the liability shift. His main processor still couldn't handle PIN debit, he notes.

Certification could be part of the problem. For some merchants, the process can be complicated due to intricacies of the POS system. In these cases, successful EMV migration often is highly dependent on the decisions and timelines of multiple parties, including software vendors, hardware manufacturers, and POS resellers.

In addition, a solution must pass three levels of EMV certification before it can be deployed. The first addresses the mechanical and electrical protocols used for transferring data between the terminal and the payment card. The second level is the device manufacturer's responsibility. It addresses the software application residing inside the device (firmware) that performs EMV processing. After the manufacturer has achieved both levels of certification, a POS developer can then use the certified device to create an EMV solution for its POS system.

The third level of certification, also called network certification, tests each unique EMV path to the networks. The testing flow follows this order: Level 1 and 2 certified

device, the POS application, any middleware or gateway in use, the processor, and finally out to the card brands. Each card brand has a set of defined EMV test cases that must be run to satisfy its EMV certification requirements. In addition, each processor may have its own test cases that its POS developers to run as part of their host message certification. This process must be completed individually for each device the POS is using.

Instead of throwing up their hands in despair, however, ISOs and acquirers might consider advising their merchants to use simple EMV-capable terminals and abandon their sophisticated POS systems for the time being, say sources. Merchants that heed that advice might want to keep most of their electronic payments running on their complex systems and use the simple EMV reader only for big-ticket or suspicious transactions, they note.

But acquirers and ISOs may find it difficult to convince merchants to set aside a Cadillac of a system, Liadis-Hall says. She notes that acquirers may have no contractual involvement in the POS systems of some of their merchants, which doesn't aid them in their attempts to counsel clients.

Throughout the EMV transition, the burden of getting the word on the technology out to merchants has fallen to ISOs and acquirers. Liadis-Hall agrees, stating that everyone in the acquiring industry has been responsible for conveying information on the transition to merchants and for helping merchants equip themselves to accept EMV transactions. However, she explains a lot of merchants just didn't see the need to change until after they began receiving chargebacks.

Benefits aside, EMV won't solve everything, says Jared Drieling, business intelligence manager for The Strawhecker Group. The technology won't stop data breaches and the resulting theft of card information, he notes. It doesn't protect online transactions and even tends to drive fraud onto the internet as card-present transactions become more secure, he says. That's the pattern that has emerged in other countries, he adds. Merchants, especially those with e-commerce operations, should pursue three layers of security—EMV, encryption, and tokenization—to protect transactions, he maintains. "No matter what EMV can do in the store," he says, "it does nothing online."

But EMV can help usher in a new era, proponents say. The technology has been positioned as a security measure, but it will also help move the payments industry into the future, says Drieling. That's because EMV terminals pack the power to accept contactless cards and capitalize on near field communication to create mobile wallets, he maintains. It enables merchants to handle Apple Pay, Android Pay, and Samsung Pay, he notes. "That's a piece that's been missing in the EMV discussions," he asserts.

This is more than EMV, others agree. The transition is enabling the industry to meet today's standards for card acceptance and preparing it to face what the future brings. "We needed to get over this hump in how we accept credit cards," says the processing expert. "The chip is here to stay." **TT**

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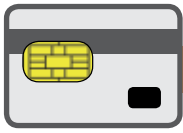
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EMV. Where the Merchants Are

Big and small merchants are handling the shift to chip cards, but **mid-sized merchants are lagging**—and retail groups are pointing fingers

By Ed McKinley

Some of the nation's largest and smallest merchants were prepared to accept chip cards by October 1, the date when liability for fraudulent EMV payment transactions shifted to them. It's the medium-sized businesses that continue to struggle with tech problems, according to multiple industry players with a stake in payments issues.

The big players—Walmart and Target come to mind—had enough resources and market power to make the transition. Some had already experienced the shift in other countries. In addition, the biggest had their own IT departments and didn't have to rely too much on third-party vendors. When they did have to go outside for help, they had the financial clout to jump to the head of the line. Meanwhile, small merchants that didn't have sophisticated POS systems were able to simply obtain a new card reader or reprogram the unit already sitting on the counter. Many businesses with just one or a few locations could even per-

suade their acquirers or ISOs to provide the new equipment at little or no cost because of competitive pressure.

But most of the merchants in the middle—think of regional supermarket chains or pizza parlors with five locations scattered around town—have neither the resources of the big players nor the simplicity of the small players. As a result, medium-sized players have been caught unprepared for chip cards. They haven't been able to integrate transactions with their loyalty programs, inventory control, payroll, and employee scheduling.

Lumped together, 37 percent of the nation's small,



medium-sized, and large merchants had EMV terminals by January 2016, according to Jared Drieling, business intelligence manager for The Strawhecker Group, a payments consulting firm. Based on the firm's research, he has projected that half would have them by June of this year and three quarters by year's end. Those percentages are based on quarterly surveys The Strawhecker Group has been conducting for about a year with 92 companies, mostly acquirers, ISOs, and industry service providers (ISPs), Drieling says. The respondents work with 4 million merchants—about half of the 8 million American merchants that accept electronic payments, he notes.

However, as Drieling explains, those numbers tell only part of the story. That's because the surveys count all the terminals that are capable of accepting EMV transactions but have not necessarily been activated or certified to receive those transactions, he notes. In other words, the terminals could handle chip card purchases but may not be doing it.

Barriers to EMV

A number of hurdles are preventing some retailers from switching to EMV. For many merchants, Drieling predicts those problems may continue in the months ahead because they arise from what he views as a variety of sources.

First, as demand outpaces supply, retailers may have trouble obtaining terminals capable of handling EMV cards. "Right now, there's a rush of merchants trying to get their hands on EMV terminals," Drieling observes. "Even if they've made the decision to now migrate to EMV, they've reached out to their acquiring partner or terminal vendor and been placed in a queue."

What's more, a lot of independent middleware providers are overworked, and some processors simply aren't ready to certify the terminals and other parts of the POS systems, Drieling explains. Stated another way, demand for certification services has grown larger than supply. "They've gotten their hands on the hardware, and then they're thrown into another queue" for certification, he says of merchants laboring to accept EMV. "Imagine the frustration."

Staff training represents a third hurdle in merchants' EMV transition, according to Drieling. Even some large retailers that got their EMV-related equipment working

early have failed to teach employees to use it. "In some cases, the staff will instruct you to just go ahead and swipe the card," he notes.

Drieling also thinks that a lot of merchants simply got a late start on EMV because they didn't believe the card networks would adhere to their timetable for the transition. "There was a feeling in the merchant community, and the merchant acquiring community, that this may be pushed back," he says. "Why do this right before the holidays?"

Whatever challenges merchants have faced in making the switch to EMV, those who still can't accept chip cards now have to shoulder the liability for any fraudulent transaction that EMV could have prevented, observes Mark Horwedel, CEO of the Merchant Advisory Group, a payments-oriented association of retailers that includes 19 of the nation's 20 largest merchants.

High-Voltage Chargebacks

As a result of the shift, chargebacks to retailers have doubled on average, and some retailers have seen five-fold increases, according to members of ETA's Risk, Fraud, and Security Council. That new burden has come as a shock to many merchants. Horwedel explains that merchants legitimately didn't know the volume of chargebacks they could expect with the liability shift because the issuers and cards brands didn't publicize the numbers in advance.

A restaurant owner, for example, might have known about two chargebacks to her business in the course of a year while unknowingly accepting another 500 fraudulent transactions during that period. Until the liability shift, issuers were dealing with the problem. That failure to comprehend the scope of chargebacks may have led some retailers into postponing action on EMV. On the other hand, perhaps they should have known what was in store for them. EVO Payments International, for example, was receiving reports from Visa and MasterCard before the shift that detailed its fraud cases, says Domnico Cirone, the company's vice president of chargeback processing.

Either way, the sudden increase in chargebacks after the shift has been large enough to lead some retailers to claim that issuers are using their new ability to issue chargebacks that aren't eligible for the liability shift, says Andy Pitts, president of MLS Direct, an Austin, Texas-based ISO.



Bonus Audio Content: Log in to listen to "How EMV Is Affecting CNP Business" from TRANSACT 16 Visit <http://bit.ly/1SCo8ER>.

Council members, however, do not believe this is happening. “We investigated hundreds and hundreds of cases of issuer abuse, and every single case we looked at was a stolen or counterfeit card,” says one member who specializes in loss prevention for a major processor. In one case, a restaurant owner insisted that the cardholder was an ex-



Cashier's Take on Chip Cards

Seven months after the EMV liability shift, shoppers are still trying to swipe chip cards at the point of sale, says a cashier at a big-box retailer in Indianapolis who asked to remain anonymous. “Smart cards aren't as smart as you think—and neither are the people who use them,” the cashier maintains.

Too many customers swipe their cards because they don't know that the store can process EMV transactions, according to the cashier. “Some people put a sign on the register that says, ‘We accept chip cards,’ to avoid the confusion,” he notes.

Other consumers still don't realize their cards have chips, the cashier continues. Sometimes he sees a customer pulling a card at random from among a dozen or so ensconced in a bulging wallet. “So their first inclination is to swipe it,” he says. “People have so many cards today that it's just unbelievable.”

The two sources of confusion—not knowing if the store takes chip cards or failing to realize a particular card contains a chip—slow down between 10 and 15 percent of the 60 or so transactions the cashier processes on a typical shift.

Even when the transaction comes off without a hitch, processing a chip card takes three or four times as long as a magnetic-stripe card, the cashier contends. Asking customers if they want email receipts also slows the process, he says.

But the situation will continue to improve as shoppers become more accustomed to using chip cards and more savvy about which retailers accept them, the cashier predicts. And consumers are getting plenty of practice. They use credit or debit cards for about 90 percent of purchases, the cashier notes, adding that a shopper hands him a check about once a month.

cellent customer who had frequented his establishment for five years and that the chargeback must therefore be false. The processor asked the restaurateur for receipts and found the names on the cards and receipts didn't match. The customer's “good reputation” was based on counterfeit or stolen cards.

Moreover, the chargebacks don't make sense as a business model because they wouldn't bring adequate return on investment over a \$5 tab, say council members. While inconsistencies may occur, they are not the rule. Moreover, federal regulators would apprehend issuers indulging in such practices, says Cirone.

At the same time, retailers are reacting to chargebacks according to their individual circumstances. Criminals often use cards fraudulently to make off with pricey jewelry or big-ticket flat-screen TVs, and retailers in those high-risk categories long ago saw the value in becoming proactive with switching to EMV, notes Drieling. But those retailers are still experiencing “heartburn” as they learn the fundamentals of chargeback management. Merchants win about 60 percent of the time when they dispute chargebacks, he maintains.

Attention to detail can neutralize a lot of chargebacks, Cirone says. It often comes down to a consumer checking two contradictory boxes on a form or an issuer committing some other type of error in the paperwork, he says. Preventing fraud itself also prevents chargebacks, Cirone points out. For example, software should prompt a cashier when a card without a chip has data in its magnetic stripe indicating that it should have a chip. That card has just been identified as counterfeit, he notes.

Where Chargebacks Arise

The retail category experiencing the highest number of chargebacks these days is petroleum, but the fraud is occurring inside the stores, not at the pumps. Next on the list is bars and restaurants, followed by vending machines. While fraud at vending machines might seem surprising, it happens because thieves are testing fraudulent cards in the machines, not just stealing a soft drink.

Because they are not making off with big-ticket items, perpetrators may think paying for a meal or drinks with a bogus card is a victimless crime, says Cirone. In fact, hackers on college campuses sometimes sell fraudulent cards for \$5 each, resulting in a rash of almost “free” restaurant and bar binges. Besides feeling the theft of dinner and drinks ranks as a mere prank, students know they're less likely to face the consequences of their actions in a restaurant than they are in an electronics store packed with surveillance cameras and security personnel, notes Cirone.

As higher-risk retailers improve their responses to fraud through EMV, some perpetrators of fraud are moving downmarket to grocery stores and fast-food restaurants, according to Drieling. Even for small-ticket merchants, the cost of chargebacks can mount up over time, he says. Other

merchants, such as a one-off corner shop selling coffee and donuts, don't have much exposure and their fraud losses wouldn't justify upgrading to EMV-compliant systems, says Craig Shearman, vice president for government affairs public relations for the National Retail Federation.

Chip, PIN, and More

Sources from various merchant groups say the use of chip and signature instead of chip and PIN continues to be a hot-button topic for merchants. The point of contention centers on the decision to not require PIN in the United States. Chip cards and PINs each address a different type of fraud, according to SellSafeInfo.org, a consumer-facing website of the ETA. With or without a PIN, chip cards prevent counterfeit fraud while the PIN prevents lost and stolen fraud. In 2014, counterfeit fraud accounted for \$3 billion in losses, while lost/stolen fraud accounted for \$800 million, according to data from Aite Group reported by Statista.

While proponents of chip and PIN EMV cards contend that most of the world uses that system instead of chip and signature, Drieling says that is a misconception. "When we look at EMV adoption around the globe, it's almost evenly split between PIN and sig," he contends. Signature prevails in Spain, Italy, Portugal, Germany, Turkey, and most of Southeast Asia, while chip and PIN holds sway in Canada, the United Kingdom, Ireland, and France.

Ultimately, Shearman predicts that consumer demand for PIN might persuade issuers to change their preference. If one big bank made the change and marketed its PIN cards effectively, competition could push others to follow suit, he says.

But reissuing EMV chip and signature cards as chip and PIN doesn't strike Drieling as likely because of the expense. The issuers say they chose signature because some merchants don't have PIN pads and because some consumers might find entering a PIN too much of a change from signing their name. Their opponents, however, note that consumers are already accustomed to punching in PINs when using debit cards.

Another concern is that the banks and card brands didn't spend enough to familiarize consumers with EMV, Horwedel claims. In addition, plans for debit card transactions weren't decided until so late in the EMV transition that retailers had little chance to get ready for the two-option approach to routing, Horwedel complains.

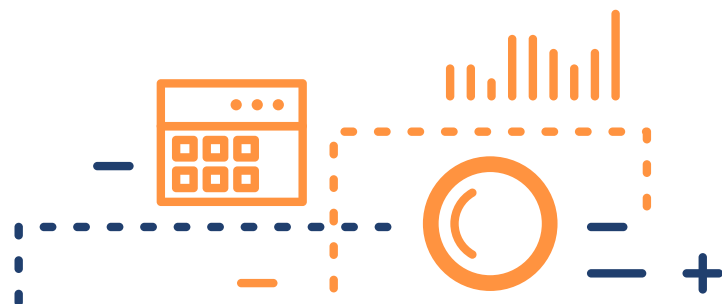
However retailers feel about EMV, the technology seems certain to proliferate and in the process become less problematic. Yet, sources agree that as the perpetrators of fraud become more sophisticated, the way the industry uses EMV will change to meet the new challenges. **TT**

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Small Data, Big Effects

By Scott Goldthwaite

How small- and medium-sized merchants can profit from simpler analytics

As we begin to see evidence of the evolution from reliance on Big Data by big companies to the adoption of Small Data by smaller merchants, it's important to understand the difference between the two types of data—and the benefits that Small Data can offer. While the largest retailers have the benefits of maintaining data warehouses, business intelligence tools, and data analysts to comb through their own Big Data to spot customer trends, make targeted offers, and steer payments to lower costs methods, smaller businesses do not have these capabilities. However, small businesses do have a need to better understand their customers without the heavy investment in Big Data tools, technology, and personnel.

The March 2016 announcement that Square has integrated with Facebook to allow its clients to buy and target Facebook advertising is a harbinger that smaller-budget companies will increasingly take advantage of segmented data sets for the purpose of better understanding their customers. Just as Square clients learn to leverage targeted information to attract new and repeat customers, small to medium-sized businesses throughout the country are beginning to identify methods to capture Small Data and use it to grow their sales and increase their profits.

Irv Henderson,
co-founder and CEO of Talech

Cory Capoccia,
president of Womply

Shaun Donaghey,
founder and CEO of Generator Payments

But what exactly is Small Data, and how can smaller companies leverage it to make strategic business decisions? Three payments industry experts—Talech's Irv Henderson, Womply's Cory Capoccia, and Generator Payments' Shaun Donaghey—offer their take on the importance of Small Data to the U.S. market and share insights about why merchant service sales teams must evolve to offer solution-based sales to remain relevant in an increasingly data-driven business climate.

What is the difference between Big Data and Small Data?

IRV HENDERSON: Big Data takes extremely large data sets and analyzes them for patterns, trends, and associations. Small Data is the democratization of data collection, storage, and analytical tools that makes insights about small businesses accessible and intuitive. While some tools are more appropriate for Big Data sets—machine learning, for example—Small Data sets can nonetheless take advantage of analytics that surface important insights about business performance.

For example, with a Small Data set, we can take a stand-alone business and evaluate its customers' spending patterns for recency, frequency, value, and preference. Or, we can use the same data set for evaluating inventory burn down, forecasting. This level of data analysis obviously has huge implications for the way a business owner runs their corner store.

CORY CAPOCCIA: From my point of view, Small Data is the mass democratization of the access, storage, and processing of data. To benefit from Big Data, historically, it was a prerequisite that you were a large organization that could afford to support the large server farms necessary to extract value from the underlying data sets. Advancements in computing storage and processing technology have liberated us from that cost-prohibitive overhead and, in turn, enabled collaboration around an ecosystem of Small Data.

SHAUN DONAGHEY: Small Data is simplified Big Data that is accessible to the small business owner. Whilst Big Data has relied on specialist skills, tools, large budgets, and platforms to leverage, Small Data provides a simple, cost-effective, and intuitive way for a small business owner to benefit, if done right.

How would you describe Small Data to the business owner at the corner store?

HENDERSON: Small Data is about analyzing the data in your business that can help you run your business better through a focus on increasing revenues and controlling costs. For example, as a business owner, it's about understanding what items sell well together, so you can encourage customers to make a larger spend at the point of sale.

CAPOCCIA: Small Data enables small business owners to make data-driven decisions without requiring a large, upfront investment of time, technology, or training. For example, Small Data is making advanced staffing decisions based on Small Data highlighting how the business has performed due to weather or local events.

DONAGHEY: What if you could make better business decisions for your business every hour of every day using information readily available to you? Imagine being able to predict

certain business events that would drive revenue growth and profits, all through a simple accessible interface—would that be of interest to you?

How do you segment the market between merchants that use Big Data and merchants that use Small Data?

HENDERSON: The segmentation between Big Data and Small Data can be broadly defined along merchants' size (read: budget) and business management. In general, bigger merchants who have growing concerns of greater than \$1 million are more data-driven in their decisions. This is particularly true for business owners who have ambitions to grow their operations across many locations.

While costs related to level of investments may limit small to medium-sized businesses (SMBs) who are able to invest in the near-term, the decreased costs related to the proliferation of the cloud, mobile, and inexpensive SaaS software will make the investment case more compelling going forward.

CAPOCCIA: Historically, this was entirely defined by a merchant's revenue/size. Large multi-location regional or national retailers were the only merchants that had the resources (time, tools, technology, budget, etc.) available to access Big Data. Even if subject matter experts (SMEs) had access to the same technology, they wouldn't have the time or the skill set necessary to benefit from the Big Data. Given advancements in technology, we're now about to apply large amounts of computing power against the same Big Data sets, but distill the information down into a Small Data form that is not only palatable, but actionable, for SMEs.

DONAGHEY: Revenue, number of sites/stores, scale, IT savviness and SaaS adoption, existing software/tools, ownership/management model—these are all metrics which could be applied to assess whether a merchant is a "Small Data" candidate. There isn't a single definable characteristic—a coffee shop owner with 10 sites is just as eligible to benefit as an operator with a single store.

How can merchants utilize Small Data to increase sales, reach new customers, and retain profitable customer relationships?

HENDERSON: To effectively use Small Data, merchants must first capture data at the point of transaction—in store or online. Because many small business owners have a strong physical presence, they're often able to capture data when the customer comes directly to the store. In our experience, point-of-sale (POS) and/or loyalty programs are quite efficient at capturing Small Data as these programs are "listening" and capturing critical data on transactions in the business—what's selling, who's buying, when it's selling, how often it's selling, etc.

Once the data is captured, merchants are able to work with their own data set and take direct action to effect business outcomes. For instance, merchants can run a highly targeted promotion against highly valued customers who've previously visited the store. Or, they can run a promotional campaign against their existing customer base to refer a friend.

CAPOCCIA: There are so many ways that merchants can utilize Small Data to improve their business, so let's focus on a very tangible real-world example to illustrate.

Online reputation is critical for merchants to actively monitor and manage. Nine out of 10 consumers are translating their online buying behaviors on websites like Amazon into the offline world. Consumers are actively researching offline businesses online to identify the business with the best overall rating. This applies to consumers choosing which dentist or doctor to see, where to get their car repaired, where to eat, which hotels to stay at, which activities to book, etc. Managing online reputation is difficult and time-consuming for merchants because they have to actively monitor activity across numerous websites—from Facebook to Yelp, Trip Advisor to Open Table, Google to Angie's List, etc. What is even more challenging is trying to understand the relationship between online reputation and revenue generation. For example, merchants do not understand the impact to their revenue when their overall reputation goes down by one star.

Harvard University conducted a study recently where it discovered that a one star change in a merchant's online reputation can result in a decline in revenue by as much as 10 percent. Imagine you're a hotel generating \$1 million in annual revenue...that means \$100,000 of your revenue is at risk.

Small Data solutions that actively manage a merchant's reputation, and tie that activity back to the merchant's transaction and revenue performance, help merchants attract more customers while simultaneously retaining the customers they have invested to acquire.

DONAGHEY: Small businesses have one great advantage over medium-enterprise organizations. They can be nimble, agile, and make decisions instantly. They are in control and have a deep connection to their business. Data they own and control allows them to make informed decisions. A merchant could use Small Data to predict cooler weather and analyze foot-traffic trends to offer location-based incentives on hot drinks if a customer signs up to its loyalty program.

What's the ROI for merchants to invest in data management tools?

CAPOCCIA: For SMEs who utilize data management tools, our belief is that the biggest ROI is the return on their time. They are able to make more informed decisions about how to run their businesses more effectively, in a fraction of the time it would have taken them without a data management tool. Given that they are often heads down operating in the

business, time is the greatest thing that can be given back to merchants. If Small Data can help them grow their business more efficiently, then that is a huge win.

DONAGHEY: The question should be, what you can lose if you don't? The small business owner isn't interested in tools so he can passively view and analyze trends. What he needs is proactive support in making quick decisions that will positively impact the business. The ROI is surely measurable by the impact on top/bottom line.

How do security and privacy regulations impact Big Data and Small Data?

HENDERSON: For consumers, security and privacy regulations are providing some assurance that the massive amounts of data being collected by businesses will not be abused. For business owners, the regulations are helping to provide a structure that balances consumer privacy against the business priorities. Regulatory levers around security and privacy will continue to manage the tension between the enormous amount of data being collected on consumers and the protection of this data both in terms of its storage and usage for commercial purposes by SMBs.

CAPOCCIA: Consumer privacy is at the top of the list. With the power of Big and Small Data comes great responsibility to be a good steward of the data and to leverage the data in a way that creates a better interaction between merchants and consumers without breaching anyone's privacy.

DONAGHEY: Privacy for consumers will be of concern, although a number of Big Data sets are anonymized (or so we are told) to a degree to protect the individual. If data is anonymized, what role does security have? Data collection sits alongside other processes that consumers are inherently comfortable with (or opt in for)—using the credit card to pay for goods, allowing location-based services, opting in for notifications, proximity alerts, geo-fencing, etc. As long as identity cannot be traced to an individual or address, Big/Small Data should be OK.

Where do you see this market two years from now?

HENDERSON: In payments, all the experts know what will happen in 10 years; but, no one knows about the next two years. It's a puzzle. We believe during the next two years, the migration to more data-driven decision making at the SMB level will be slow and steady.

There are three primary trends that are irreversible at this point: Tablets are deeply penetrated in U.S. homes, data is inexpensive to store, and the proliferation of software that targets business owners is at an unprecedented level. These three trends are shifting merchants' expectations of the value of services.

CAPOCCIA: In addition to the trends highlighted by Shaun and Irv, we also believe that the increasing number of younger generations who are either taking over or starting up their own businesses is accelerating the pace of adoption of Small Data solutions. Because of this increasing adoption, it will be an absolute requirement to have a solution in place to remain competitive.

DONAGHEY: Small Data will be recognized as more than a value-add to small businesses, but something that should be critical to their tactical and strategic daily operations as much as running a POS, maintaining inventory, managing staff, etc. To reach this, though, there needs to be education, relevant success stories, and a willingness on the part of the small business owner to embrace a new way to help grow their business.

How do you think Small Data conversations change the way that merchant services sales teams engage business owners?

HENDERSON: In the payments industry, sales forces that have traditionally focused on merchant services have increasingly had to focus on value selling over a discussion on “basis points.” SMBs want to understand how new software services (mPOS, loyalty/gift, accounting, reputation) can help them run their businesses better.

Increasingly, sales forces need to be knowledgeable about the services that business owners are adopting. Traditional merchant services sales reps risk disintermediation as customers’ expectations shift well beyond basic card acceptance.

CAPOCCIA: It is one element of the “new sales” shift where merchant service sales teams are recognizing that they must evolve into solution-based sales vs. being a one-trick pony selling a commoditized service where the only differentiation is price. The reality is that in order to be relevant to the needs of business owners today, merchant service sales teams have to change or else they will quickly become irrelevant and extinct.

DONAGHEY: There needs to be a large shift in merchant sales reps’ attitude and education to become solution advisors, if that is at all possible (perhaps in certain dark reaches of the ISO community it is not). Some technology companies, like cloud-based POS providers, have been doing this for a while—but merchant services reps have a unique advantage to engage the owner in a comprehensive business discussion that would lift their credibility if they approached a prospect with more consideration than getting ink on a contract, and the merchant will expect and demand this over time. **TT**

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PROCESSING 20 YEARS

Chipping Away at Slow EMV

Getting to the root of the problems with transaction times

By Henry Helgeson

One of the most frustrating aspects of the U.S. roll-out to the new EMV standard has been the user experience. Transaction approvals can be very slow—in fact, there are several reports of retailers shutting down their EMV implementations because it just takes too long. It's one of the biggest consumer complaints about the U.S. transition to EMV.

We regularly speak with retailers of all sizes, and many are telling us that they don't want EMV implemented across their multiple locations unless they can see transaction times that are acceptable to them. What's acceptable? Certainly not the 10- to 15-second range that many are experiencing. So why is this happening? Prolonged transaction times can be attributed to poor implementation across the industry as people rushed to make the October 2015 deadline, on top of generally sloppy coding.

These issues have resulted in a very poor experience at the point of sale (POS). Transaction approval length aside, EMV is still a new experience and it is not being rolled out in a uniform fashion. It requires significant consumer and employee training and messaging, and consumers don't know where they can and cannot use EMV. There are inconsistencies between cards, both debit and credit. It's an awkward experience, and that's the last thing a merchant wants at the POS. And because so many focus much of their energies on the Q4 holiday season, this makes for an unsettling year-end proposition.

Mobile can be seen as something of a silver bullet here...tap your phone and the transaction is done. It's simple, it's intuitive, and it's a seamless process.

But until mobile really takes off, some in the payments industry are taking steps



to address the EMV user experience fail. The card brands recently announced “quick” chip options that address the chip interaction time and enable the cardholder to remove the card before transaction completion. However, quick chips do not speed up total transaction time if the systems are not well implemented.

We don't believe EMV has to be slow. In

fact, our experience at Cayan has been quite different. Our developers in Belfast, Northern Ireland, have been using EMV for years, and they spent a lot of time researching the most efficient way to read and process information from the chip. The result has been much faster EMV transaction times—typically less than 4 seconds, which is on par with magstripe transactions.

What we did specifically was examine one million EMV chip and signature transactions processed on our platform, and analyzed two components of the transaction: terminal interaction with the chip and the round trip authorization with the processor. From a consumer's perspective, this represents the time between the consumer's initial insertion of the chip card into the device and the moment he or she receives approval and is ready to sign for the purchase.

We found that our in-market solution has a median time of 1.60 seconds for the terminal interaction with the chip. The median time to authorize the purchase is 1.92 seconds, with an average time of 2.56 seconds. The resulting median time for chip and signature transactions processed on our platform is just 3.66 seconds—with an average time of just over 4 seconds.

EMV speeds are not all created equal: While some card brands and issuers are extremely quick, our data indicates that one card brand's EMV transactions take a full one second longer than the other card types.

Despite EMV inconsistencies across the payments industry, the growth of mobile has implications for broader EMV adoption. Admittedly, there have been several barriers that have long served as impediments to mobile payments growth. Lingering security concerns, issues with ease of use and onboarding, and lack of merchant acceptance have slowed the opportunity. But

these items are all being improved upon significantly, largely driven by EMV. In a recent webinar Cayan conducted with Jordan McKee, senior analyst of mobile payments at 451 Research, McKee pointed out that EMV is starting to help remove impediments to mobile payment adoption. McKee called EMV a key component as it supports advancements in security (e.g., EMVco to

mobile wallets are a good start, but they will not drive merchant or consumer adoption at scale. Most wallets today are really just credit card surrogates. That is not a value proposition: Credit cards actually work really well. But what does need development, and what actually matters to merchants and consumers, is everything beyond the transaction. Loyalty, rewards, offers, location-

SO WHAT'S NEXT? MOBILE PAYMENTS VIA MOBILE WALLETS ARE A GOOD START, BUT THEY WILL NOT DRIVE MERCHANT OR CONSUMER ADOPTION AT SCALE. ... LOYALTY, REWARDS, OFFERS, LOCATION-BASED SERVICES—THESE ARE THE AREAS WHERE INTEREST AND UPTAKE ARE OCCURRING TODAY.

kenization spec, identical ISO standard), user experience (mobile better than chip), and merchant acceptance (driving contactless with liability shift). This inevitably lays the foundation for value-added services—the true driver of this opportunity.

So what's next? Mobile payments via

based services—these are the areas where interest and uptake are occurring today.

Faster EMV is a start, but clearly there's still plenty of work to do. **TT**

Henry Helgeson is CEO of Cayan and chair of ETA's Retail Technology Committee.

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Brett McDowell



As executive director, Brett McDowell manages the strategic direction of the FIDO Alliance and coordinates its liaison activities with external industry groups, standards bodies, and government agencies worldwide. He previously was head of ecosystem security at PayPal and has held numerous leadership positions at security and standards organizations.

The following has been edited for length and clarity. A fuller edited version of the discussion is available on the Transaction Trends website: <http://bit.ly/1XYuin2>.

Why was the FIDO Alliance formed?

The founders of the FIDO Alliance were facing a “password problem,” which is online authentication, consumer authentication, authentication in the enterprise. When an end-user needs to authenticate themselves to a web application or a mobile application over the internet, we as an industry have been dependent on an architecture known as a shared-secret credential system. That’s when the user has to know the secret, and the system has to be expecting exactly that same secret, and when the secret is matched on the server, the user gains access to the resources of that application. The problem with the shared-secret architecture is that it has many vulnerabilities. FIDO Alliance founders were looking at how easily and effectively those vulnerabilities were being exploited by cybercrime, in particular but certainly not exclusively, in the financial services area. So, we formed the organization on the core idea of a new model.

Explain FIDO Alliance’s approach.

We knew [the credential] could not be a shared secret, so that basically meant it was going to be public-key cryptography for online authentication. That means having a private key as your real credential. Instead of a password, we use a cryptographic private key that is on a device-centric architecture. That means the private key is in the user’s hand, on their well-protected device; the only thing sitting on the server is the public key that matches, which is not a secret and is not something that can be reused if

stolen. For user verification, the server pushes down a challenge, and then the user has to be verified, and that’s going to let the device, with that permission, sign the challenge with the private key and send it back. They get authenticated because the public key lets the server service provider know that it was signed by the same private key that was registered with the service.

How is FIDO Alliance educating stakeholders?

We’re happy to be liaison partners with the ETA. At TRANSACT 16 in Las Vegas, we held a FIDO education session. We will continue to try to work with ETA, and other trade associations, to help with the distribution of our educational materials.

We’ve developed White Papers, which is a resource center on our website [www.fidoalliance.org]. We also run a series of seminars around the world, and we place FIDO speakers at as many conferences as we can. We run a monthly webinar series that educates and highlights key points about FIDO. We have a monthly public newsletter that we send out to keep people abreast of how things are going with FIDO, and we have a blog where we’re increasingly writing educational pieces about FIDO technology and what’s happening in FIDO marketplace.

How many devices currently have FIDO technology?

There are three flavors of FIDO Certifica-

tion. One is live and is functional certification. This is where we test servers and clients and devices for their compliance to the standard. In one year, we have certified over 150 different products from over 60 different companies. Now, the subset of those are actual, let’s say, mobile phone handset manufacturers. I believe we have at least 14 different models that are FIDO Certified.

What is the next big thing for FIDO Alliance?

To help cement FIDO into the ecosystem’s infrastructure, we’ve partnered with the World Wide Web Consortium (W3C). The W3C is the standards body for web browsers and other core web components. Last November, we submitted to the W3C the specifications that would need to be implemented by a web browser, and they have since accepted those and created a new working group called the Web Authentication Working Group, which will produce what they call the Web Authentication Standard, and that is based on FIDO specifications. This will obviously help in cementing FIDO as the authentication platform within the web platform itself. Another key milestone would be that Microsoft publically announced that every Windows 10 device will be FIDO compliant; they’ve publically committed to implementing FIDO 2 within the Windows 10 ecosystem. **TT**

—Josephine Rossi

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