

# TRANSACTION

## *trends*



THE OFFICIAL PUBLICATION OF THE  
ELECTRONIC TRANSACTIONS ASSOCIATION

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## ETA Educational Opportunities Worth the Investment

**D**ynamic change in the payments industry is driving new partnerships and conversations across the ETA membership. From the new frontier of social media-integrated payments to the EMV migration, we're seeing electronic commerce transform. While no disruption comes without growing pains, we're excited by the unprecedented new business opportunities for ETA member companies.

Adoption is a deciding factor in the success of our industry, and EMV is an excellent example of our progress. We expected the transition to take at least five years, which is the time it took most European nations to get to 50 percent market penetration of chip transactions. But the pace of adoption in the United States has been incredible. Nearly three-quarters of Americans already have at least one chip card. And nearly 2 million U.S. merchant locations have upgraded to chip readers.

Although there have been some bumps along the way, ETA member companies have diligently responded to merchant and consumer concerns with innovative solutions that have increased transaction speeds while maintaining the highest levels of security. This has made our industry's EMV story a successful one. In fact, counterfeit activity fell 16 percent overall during the first quarter of 2016 and is down more than 80 percent at some of the nation's largest retailers.

ETA is advancing the industry's message of innovation and security, curating events and resources to respond to new challenges and opportunities. At our upcoming Strategic Leadership Forum, October 19-21, ETA is honored to present General Michael Hayden, former director of the Central Intelligence Agency and the National Security Agency, to discuss the current threats facing the payments industry, lessons learned as a military and intelligence community leader, and the current U.S. political climate. Every payments executive should take advantage of this exclusive opportunity to gain actionable intelligence from a world-renowned leader on security, military leadership, and cyber threats.

This November 10, TRANSACT Tech San Francisco will bring together leading innovators from banking, retail, and fintech, as well as innovative startup executives and venture capitalists, to help attendees further business connections, build strategic relationships, and secure new opportunities. If you need to understand how tech startups are changing payments, and how partnerships with payments technology innovators can grow your business, there is no better place to be than TRANSACT Tech San Francisco. Register today at <http://electran.org/events/slf16>.

And remember, as always, ETA remains enthusiastically dedicated to advancing an environment where payments innovation can thrive, while driving the global economy through trusted and secure electronic transactions.

Jason Oxman  
Chief Executive Officer  
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## Contactless Wristband Payments Launch in Rio

Digital security firm Gemalto has launched a contactless transport ticket wristband for public transportation riders in Brazil's second largest city. In partnership with Rio de Janeiro's public transportation ticketing operator, RioCard, the contactless wristband payments are now an option for the millions of people who rely on Rio's buses, ferries, subway, and train systems. Users wave their wristband near the contactless readers already deployed throughout the city to access public transportation. Officials say this ease of motion allows for smoother travel logistics, increases transaction speeds, and helps build a foundation of simple and secure contactless payments for Rio's residents long after the 2016 Summer Olympic and Paralympic Games conclude.

The system was launched in August ahead of the Games—an opportune time to release the contactless payment system. In addition to the 37 percent of Rio's 12 million people who already rely on the city's buses, many of the 500,000 visitors and thousands of athletes who travelled to the Games in August relied solely on public transportation. "The new RioCard



wristbands support our goal to create a more convenient and secure travel experience for all residents and visitors to Rio de Janeiro," says Cassiano Rusycki, CEO of RioCard.

Gemalto is supplying RioCard with its waterproof Celago Contactless wristband, which will be certified by Visa and MasterCard to enable all of the secure functionalities of traditional contactless EMV cards. Contactless transit cards were first adopted by RioCard in 2003 and have become part of daily life for millions of users in Rio. "Gemalto has worked with RioCard implementing a pilot program in 2013 that leveraged its near field communication SIM card technology, allowing people to use their mobile phones as RioCard contactless transit cards," says Rodrigo Serna, president for the Americas at Gemalto.

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### Fast Fact

Payments volume is consistently on the rise. **More than \$4.9 trillion was spent** via Visa, Mastercard, American Express, Discover, and PayPal in the United States in 2015.

Source: "The U.S. Economic Indicators Report," The Strawhecker Group/ETA





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## ACA Gives ACH Processors a Revenue Boost

Since its inception in 2014, the Affordable Care Act has opened up access to the health-care sector for electronic payments providers, according to press materials from the Aite Group's latest report, which says ACH payments processors in particular will reap revenues of \$281 million by 2019.

The research and advisory firm estimates commercial ACH reimbursement will increase at a compound annual growth rate of 7 percent from 2015 to 2019 as health-care providers increase uptake of the electronic fund transfer standard. Commercial paper check reimbursements will suffer a modest decline of 4 percent during that same period.

"Health-care providers are not only increasing electronic payments and remittance transactions but also want to receive a mix of payments as long as doing so pushes them closer to their ultimate goal—administrative simplification," says Mike Trilli, Aite's senior health insurance analyst, in a statement. "In a hotly contested space where independents compete against health systems' deeper pockets, reallocating their labor force or reinvesting expense savings into new capabilities is a formula for success and one the industry should watch closely as healthcare continues its digital journey."



## Retailers Get a Post-Brexit Bounce

Foreign shoppers are capitalizing on currency fluctuations to bargain shop in Britain, according to the latest data from Worldpay. Retail transactions tracked by the payment processor in the pre- and post-Brexit referendum period show foreign card spending volume growth up by 3.4 percent in the month following the vote. Non-U.K. card sales online jumped 5.3 percent post-Brexit, while bricks-and-mortar retailers experienced a 3 percent growth.

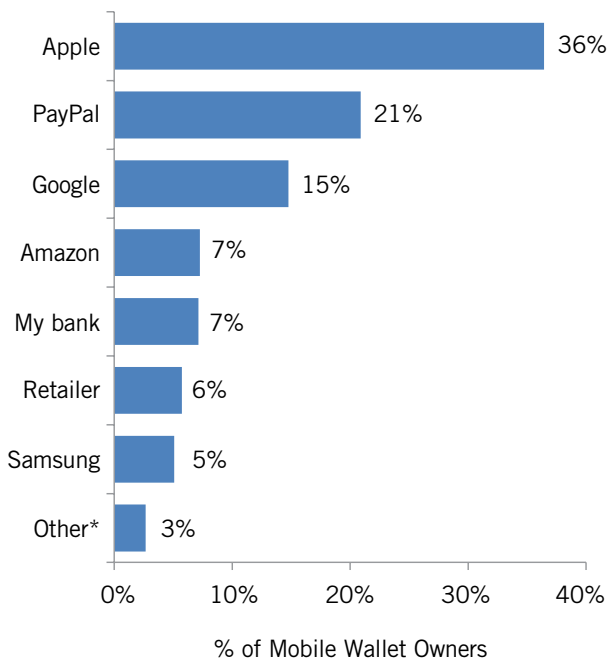
Further analysis reported by Worldpay shows that visitors are spending more, with an 8.8 percent increase in transaction value. The average value of in-store transactions for non-U.K. cards rose by 11 percent since the Brexit vote.

Worldpay says data shows an average online transaction value of £126.79. This is up 11 percent "year-on-year" and up 8.6 percent from the period before June 23.

"The biggest winner in non-U.K. card spend following the Brexit result, however, was Northern Ireland, which saw an extraordinary 23.4 percent spike in volumes, possibly due to visitors from the Republic of Ireland crossing the border to take advantage of the weaker pound. Here, average transaction values also increased 6.4 percent to £39.76," WorldPay reported in a press statement.

## Infographic

### Consumers' Current v. Preferred Mobile Providers



Source: Study of Mobile Banking & Payments, June 2016, First Annapolis Consultin



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## Are Consumers Willing To Try Biometrics?

Consumer confidence in fingerprint authentication is growing, according to a new report from Javelin Strategy & Research. Almost half of U.S. consumers consider it to be effective (49 percent), and 65 percent of consumers are willing to use the solution. Javelin says the confidence is driven by “widespread acceptance of the use of fingerprints to identify individuals paired with a streamlined user experience.” Eye scanning was the second most favored modality, with roughly 57 percent believing it is effective and approximately 47 percent willing to use it.

“PIN and signature are solutions from another past life. FIs and issuers need to consider how to optimize the cardholder verification process for 2017 and beyond. Biometrics will be central to that proposition, bolstered by solutions that reduce friction and empower cardholders,” says Al Pascual, research director and head of fraud and security, in a press release.

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### Fast Fact

Forty percent of consumers would **not feel comfortable using a mobile pay app** that had recently been hacked.

Source: 2016 Consumer Loss Barometer, KPMG



## Moves & Mergers

**iPayment Holdings Inc.**, a provider of payment solutions and processing services, has announced the appointment of two new members to its leadership team: O.B. Rawls IV was named interim CEO and president in August, and ETA President Greg Cohen has joined as COO.

Michael Collester has been named COO of **JetPay Corporation**, which provides debit and credit card processing services, payroll and human capital management, and pre-paid card services.

Gordon E. Eubanks has been named to the board of directors for **Kount Inc.**, a fraud and risk-management solutions provider. Eubanks comes from leadership roles at Oblix Inc. and Symantec Corporate, and will provide strategic growth guidance for Kount.

**Paysafe**, a global provider of payment solutions, has acquired Income Access Group, a Montreal-based technology and digital marketing business servicing the global gambling and gaming market.





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# Securing the Future of the Payments Industry

## ETA groups log many achievements this summer

By Amy Zirkle

**W**hile the dog days of summer often mean a slowing down of the pace of business activities, that certainly has not been the case for the payments industry. With fall upon us, there are a number of important issues being addressed by several relevant external industry groups—as well as within ETA's member-led committees, councils, and working groups—that continue to ensure the growth of a robustly secure and vibrant payments ecosystem.

### Security Remains Key

The payments industry continues its work to promote the growth and advancement of new technologies to support payment and product delivery, while maximizing security. Work addressing payments security is currently underway in several arenas, and ETA is front and center as an active participant and contributor.

**Federal Reserve Secure Payments Task Force.** The Federal Reserve System's Secure Payments Task Force includes a diverse array of stakeholders tasked with advancing the work outlined in "Strategies for Improving the U.S. Payment System," published in January 2015 (read it here: [bit.ly/FedImprovePayments](http://bit.ly/FedImprovePayments)). The mission of this task force is to advise the Fed in its leader/catalyst and operator roles on payment security matters, and identify and promote actions that can be taken by payment system participants collectively or by the Federal Reserve System.

The objectives of the Secure Payments Task Force include the following: to provide advice on payment security matters; to coordinate with the Faster Payments Task Force to identify solutions for any new or modified payments infrastructure so that it is both fast and secure; and to determine focus areas and priorities for future action to advance payment system safety, security, and resiliency.

ETA has been actively involved with the task force from its inception and participates on several of the task force's working groups, including Information Sharing for Mitigation of Payment Risk, Payment ID Management, and Data Protection (newly established). In addition, the Risk, Fraud, & Security Council has established a separate working group that provides support and input into the Fed's efforts.

**PCI Security Standards Council.** In May of 2015, the PCI Security Standards Council announced the establishment of a Small Merchant Task Force aimed at developing guidance and resources that simplify data security and PCI Data Security Standard (PCI DSS) compliance for some of the most vulner-



able businesses preyed upon by cybercriminals—notably, small merchants. These businesses typically do not have the technical knowledge or resources to understand how to apply PCI Standards to protect payment data against today's threats.

The work of the Small Merchant Task Force centered on providing practical ways for smaller merchants to improve payments security, as well as reduce their risks and make PCI DSS compliance quicker and less complicated. Perhaps more importantly, the task force developed guidance materials instructing small merchants on how to protect the payment environment, including working with security assessors, vendors, and service providers, and how to ensure that security goes well beyond PCI compliance.

At ETA's upcoming Strategic Leadership Forum (SLF), attendees will have the opportunity to hear from other participants on the task force, including the co-chair from the National Restaurant Association, as they provide insight into the importance of small- and medium-sized merchants improving their payments security.

**Retail Technology Committee.** Established a year and a half ago, ETA's Retail Technology Committee comprises ETA member companies focused on enhancing and maximizing the use of technology to drive and support the retail experience for merchants and consumers. The committee has been working on a comprehensive document that will serve as a guide to merchants on how to modernize their payment systems and safely, securely, and effectively implement EMV.

In addition, the committee continues to work on PCI-related matters, including addressing potential challenges surrounding management of third parties for terminal installation and integration. The Qualified Integrator and Reseller (QIR) program was established by the PCI council and covers those integrators and resellers who sell, install, or service equipment at the merchant's point of sale. In light of the recent announcement by Visa that acquirers must ensure that their Level 4 merchants use QIR certified entities, a number of important issues related to resolution of the development and implementation of this program have emerged. These issues include gaining an understanding of how the QIR program is implemented, clarifying the time frames and implementation process, as well as ensuring the relevance for the broader payments ecosystem, including independent software vendors and value-added resellers.

**Risk, Fraud, & Security Council.** ETA's Risk, Fraud, & Security Council continues its work on several significant business issues related to risk avoidance, compliance, and security matters. Touching upon matters pertaining to the EMV migration and the accompanying concerns regarding the liability shift, the council also deals with the important issue of the changing landscape surrounding chargebacks. It is developing guidance and industry information for ETA members regarding best practices for EMV and how to address and manage the growing instances of chargeback activity.

In addition, the council is providing a closer examination of security as it relates to technological issues tied to maintaining network security. While the group is focusing on a number of PCI matters, there is also discussion around the ever-expanding use of cloud technologies as a means to maximize storage and what the broader implications are for security related to use of cloud. Additional matters include growing instances of malware and what can be done to address that, along with a deeper examination of third-party risk management.

## Innovation Continues To Ignite Payments

The vibrant and exciting innovation underway in payments continues at a rapid pace. While security is a critical factor, it

cannot be stressed enough that the growth of payments is tied to the tremendous potential new technologies offer. ETA sees the strategic opportunities that new technologies will facilitate for development in payments. There are a number of external organizations that recognize this and are working to expand and leverage application of technology to payment products and services.

**W3C.** The World Wide Web Consortium established a Web Payments Interest Group focused on how to maximize and expedite e-commerce to benefit all users and stakeholders, particularly buyers and sellers in payment transactions. Included in those discussions is a focus on the growing use of application programming interfaces (API), which have really become an essential element enabling customization and innovation to support payment transactions. Here too, APIs are quickly become a key component for companies to effectively integrate payments as part of their product offerings.

**Mobile Payments Council.** Perhaps the most notable example of where innovation in payments is best exemplified is in the mobile payments space. ETA's Mobile Payments Council has been focused intensely on all that innovation has enabled for payments from a number of vantage points, including the use of APIs to expand growth of frictionless payments as a means to deepen the reach of commerce. The council continues to assess and consider how the mobile wallet space is changing almost daily and what that means for the entire payments ecosystem.

The mobility or portability of payments truly presents an opportunity to unleash innovation, and the council recognizes that potential and, in the next few months, will be focusing on several topics, including development of a roadmap for biometric authentication, deployment of augmented reality and virtual reality technologies to accompany payment applications, and maximizing the use of connected commerce (Internet of Things).

**Technology Council.** The work of ETA's Technology Council seeks to identify and examine the broad arena for payments and technology. With a focus this year on the ever-expanding use of data analytics to support product and service delivery, the council undertook a closer examination of "Small Data" as a key driver and will be presenting much of that work as part of a panel discussion at SLF.

The council also is shifting focus to the Internet of Things and the potential opportunities afforded to the payments ecosystem, not only from the perspective of how payments will be provisioned but also what security considerations must be addressed. And of course, as blockchain continues to attract attention and interest in the media, the council has been exploring what it means for payments beyond the development of bitcoin. **TT**

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# Playing the Long Game

Early adoption of mobile payments has been slow, but **industry innovations** will speed momentum for consumer and merchant acceptance

By Ed McKinley

**T**he future may belong to mobile payments, but it is taking some time for the new era to fully arrive. Although the number of people using their smartphones to pay at the point of sale and the amount they're spending are both growing prodigiously, mobile payments still account for only a tiny fraction of all purchases. "In the U.S., it's way less than 1 percent of transactions, but it's growing nicely," says Thad Peterson, an Aite Group senior analyst.



That word “nicely” fits the stats, according to Bryan Yeager, an analyst covering digital trends for the research company eMarketer. “You have double-digit growth year-over-year in terms of the number of users and triple-digit growth in terms of transaction value,” he says.

Last year, the number of Americans making mobile payments grew 41.4 percent from the previous year to 23.2 million, Yeager notes. The number of mobile payments users is expected to climb by 61.8 percent this year to a total of 37.5 million, he explains. The value of their mobile purchases reached \$8.71 billion last year, up 136.8 percent from 2014, and consumers are projected to make mobile purchases of \$27.05 billion this year, an increase of 210.7 percent over last year, according to eMarketer research.

Growth in dollars is outstripping increases in the number of users because consumers are making larger purchases—perhaps buying a chair instead of just a cup of coffee—as they gain confidence in the security of mobile payments and more merchants accept the transactions, Yeager says. Spend per user is expected to total \$721.47 this year, up from \$375.82 a year ago.

That wildfire growth, however, needs perspective. Yeager explains that the 37.5 million consumers making mobile payments this year are just 9.6 percent of the nation’s mobile phone users. Even by 2019, only about three in 10 smartphone users will be making purchases with their devices for a total of \$210.45 billion. “In the context of total credit card transactions, which are in the trillions of dollars in the U.S., we’re just barely scratching the surface,” he maintains. “It’s a very long game in terms of ubiquity.”

Still, mobile will eventually have its day, predicts Jeff Crawford, a senior manager at First Annapolis Consulting Inc. “I don’t think there will be a single catalyst that makes everybody use it,” Crawford says. He likens the spread of mobile to the gradual adoption of EMV, where chip cards are becoming widespread, but merchant acceptance is lagging behind.

Meanwhile, awareness of specific electronic wallets is growing as names like Apple Pay, Android Pay, and Samsung Pay penetrate the collective consciousness, notes Melissa Fox, also a senior manager at First Annapolis. “Even if they haven’t used them, they are aware of them,” she says of respondents to the third edition of the firm’s “Study of Mobile Banking & Payments,” which tracks consumer adoption and use of mobile banking and payments products. As that awareness grows, the future will belong to mobile payments, concludes James Anderson, an executive vice president in the

MasterCard Digital Payments and Labs group. “The interactivity and the connectivity associated with smart devices is going to be something that is compelling to merchants to figure out and solve.”

### **Catalysts of Change**

One factor that could hasten adoption of mobile payments comes as a byproduct of the EMV transition, analysts agree. Consumers and merchants often consider dipping a chip card more time-consuming than swiping a card with a magnetic strip, so they might become willing to move on to the next step of paying with a mobile device. EMV also may speed up the arrival of mobile payments because many, if not most, EMV-capable payments terminals also accept the near field communications (NFC) signals that can enable waving or tapping a digital device to pay.

Growth will continue as consumers replace aging handsets that aren’t capable of making mobile payments, Yeager notes. Nearly all of the smartphones sold or leased these days have the ability to make payments, but Peterson notes that the current generation of smartphones is the first to be NFC-ready. As consumers become more comfortable using the capabilities of their phones, Crawford predicts the likelihood increases that they will make payments using them. Meanwhile, the percentage of mobile phone users who have smartphones will rise from the current level of about 70 percent, he says.

In addition, the spread of wearable computing devices, such as smartwatches, smartrings, fitness trackers, digital eyeglasses, and even articles of clothing with microchips, seems likely to increase mobile payments. Commuter transit companies implementing mobile payments could, according to Yeager, familiarize the urban public with mobile payments and, thus, “be a really big catalyst” to adoption. Such a system could increase the speed with which passengers get through turnstiles and help to build momentum for mobile payments.

As so often happens with new technology, big merchants will integrate innovation sooner than small- and medium-sized merchants, says Crawford. Large retailers are attracted to mobile payments as a way of tying together loyalty programs, he maintains. Starbucks, for example, has excelled at making sure its mobile payments transaction experience pleases consumers, and the company already receives more than 20 percent of its revenue through mobile payments, according to published reports.

Because most stores don’t accept mobile payments, consumers are discouraged from trying to make them, Fox

says. Conversely, merchants shy away from accepting mobile transactions because customers aren't demanding them. Samsung plans to address the acceptance issue by introducing a phone that focuses a magnetic ray in a terminals card swiping mechanism to vibrate the head as though a card had been swiped, says Tim Sloane, vice president, payments innovation, and the director of the Emerging Technologies Advisory Service at the Mercator Advisory Group.

Security concerns also continue to hold back mobile payments adoption. "We see it in survey after survey," Yeager says. Consumers often balk at loading their cards onto a phone and transmitting the information to a terminal. "It's a new behavior that people have to learn," he continues. "I equate it to where we were 10 or 12 years ago with e-commerce and people had to have a lot of trust to put their information online." Since then, retailers have built their security reputations on the internet despite some notable data breaches.

### Tokens of Security

In general, consumers are becoming more confident in the security of mobile payments, says Nachiketa Mitra, vice president, payments, for Cognizant, a consulting company. Mitra cites an Experian survey that found 61 percent of respondents believe "biometric identification is either just as secure as or more secure than the current systems of passwords."

MOBILE PAYMENTS DON'T NECESSARILY THREATEN THE ESTABLISHED ORDER OF THE PAYMENTS INDUSTRY, SUCH AS ISOS' MERCHANT-SERVICES RELATIONSHIPS, SAY EXPERTS.

It's only right that consumers should be feeling better about the security of mobile payments, says Sloane. The thumbprint or password can stay in the phone, he says. To obtain that information a hacker would have to enter each individual device, a time-consuming endeavor that's not worthwhile unless the owner of the phone is a multimillionaire or a corporate treasurer.

Peterson maintains that cards are safeguarded even more effectively by keeping a digitized card in the phone instead

of storing it in the cloud or entering the information into merchants' terminals. "With Apple Pay or Android Pay or Samsung Pay, you're loading a tokenized version of that card in your wallet," he says. "It's probably the safest payment method there is," he says. "You combine the token, the biometric, and the device. There's no way for anybody to hack the device to get the card number."

Even with greater security, privacy issues can hold back mobile payments, says Fox. Some consumers simply don't want to advertise their whereabouts on the internet or share information on what they're purchasing, she says, characterizing those concerns as a lack of trust.

Even battery life becomes an issue when consumers begin to rely upon their smartphones for payments. "The physical issue of helping people make payments when their phones run out of juice has to be addressed," says Yeager. He cites one example of the possible consequences: U.K. transit riders have had to pay the highest exit fare when their phones ran out of charge and thus could not document the length of the ride.

Technicalities aside, mobile payments will spread if consumers become enamored of them. "Merchants want to accept the way customers want to pay," notes Fox. "As goes consumer adoption, so goes merchant adoption."

Observers contend, however, that mobile payments constitute a new form factor for paying with established payment methods. Mobile represents another way of transacting with a card or directly through a bank account or prepaid account. That means mobile payments don't necessarily threaten the established order of the payments industry, such as ISOs' merchant-services relationships, they say.

### Infrastructure Issues

Meanwhile, transactions continue to travel over the infrastructure created by the banks and card brands or through the automated check handling (ACH) system. Instead of thinking about the "card," MasterCard executives now think about the "account," which clients can use to make mobile payments, Anderson says.

Still, schemes to accept mobile payments outside the established infrastructure have gotten attention, even if they do not seem to be making inroads with consumers. Some of the nation's largest retailers have worked together to establish their own system called the Merchant Customer Exchange (MCX) with an ACH-based mobile wallet platform known as CurrentC. To establish MCX, some big merchants vowed they wouldn't accept NFC mobile payments, but they later relented. CurrentC itself, however, never saw the full light of day. One rollout postponement in 2015 and another in May of this year accompanied by a 30-person layoff and a refocus by MCX toward "partnerships with financial institutions," according to TechCrunch. In June, Consumerist reported MCX informed CurrentC beta test users in Columbus, Ohio,



Learn more about the evolving payments market. Log in and listen to "Why Traditional POS is Being Left Behind" from TRANSACT 16. Visit [bit.ly/1U0dDcN](http://bit.ly/1U0dDcN)

that accounts would be deleted at the end of the month.

It's not easy to compete with card brands, Anderson maintains, citing MasterCard's 40 million merchant locations and more than 2 billion cards. Plus, consumers want to continue the relationships they have with issuers like Bank of America, he suggests.

Some banks have plunged into mobile payments, using digital and traditional media to associate their names with Apple. Banks seek that connection with Apple after struggling since the Great Recession that began in 2007 to restore their brand equity and trust among consumers, Yeager says. A few banks are offering their own mobile wallets, he says, including Wells Fargo, Capital One, and Chase Payments.

MasterCard introduced MasterPass in July to help banks and credit unions enter the realm of mobile payments. A long list of major banks and some smaller banks have accepted the card network's offer to employ MasterPass, which works in all digital use cases, according to Anderson. "Our strategy is the banks being successful on their own terms with their own brands empowered by MasterPass," he says.

Visa describes its entry, the Visa Digital Commerce App, as a product that enables issuers to put their own brand on a mobile app. Issuers can use it to offer real-time account balances, card controls, alerts intended to head off fraud, and token services, according to a Visa website.

The outbreak of bank-based mobile wallets should find a market, surveys indicate. Research shows 45 percent of consumers would prefer to get their mobile wallets from banks, says Fox. That's true even when consumers are using mobile wallets from another source, she indicates, and it's true

among consumers who have digital wallets and those who do not have one but are interested in getting one. Consumers already trust their banks, and they would like mobile payments to integrate with their mobile banking. "Banks and issuers can play a bigger role than they are today," she concludes.

Retailers offering their own mobile wallets include giants such as Walmart and CVS. But having so many mobile wallet options can confuse consumers, Yeager says. Some users would prefer a universal wallet that's accepted everywhere, a model Samsung approaches with its Loop functionality, Yeager says. Some retailers, however, have enough customers to justify a wallet.

Walmart, for example, has tens of millions of customers already using its app for coupons and promotions, he notes. They can integrate payments with that and then use the incentives to steer customers toward the payment option, he says. In other examples, Walgreens and Kohl's are integrating their loyalty programs with Apple Pay, and Jamba Juice is working with Android and a number of others, he says.

Companies that are using the established card networks' infrastructure are making the right decision, Peterson says. "One of the smartest things Apple did was to embrace the payments system," he opines. "They made everybody a partner, and that was brilliant because it took a huge challenge off the table." Perhaps they're bringing the future of mobile payments just a little bit closer. **TT**

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*Ed McKinley is a contributing writer to Transaction Trends. Reach him at [edmckinley773@yahoo.com](mailto:edmckinley773@yahoo.com).*

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# At the INTERSECTION of P2P and Social

As Millennials lead the person-to-person transaction movement, more companies are launching P2P apps and blending social media with payments

By Christine Umbrell

**D**uring the past several years, U.S. consumers—and young adults in particular—have been using person-to-person (P2P) payments technology to send money to each other via mobile application, employing this technology to split a restaurant bill or share rent or travel expenses. This trend is growing, with more Americans of all ages using apps such as Venmo, Square Cash, and PayPal to transfer funds. Now, many financial institutions, including Wells Fargo, Chase, and Bank of America, also are offering P2P transactions between account holders. It seems Americans are becoming more willing to use their smartphones to make financial transactions, prompting more companies to join the P2P movement.

As we transition to an increasingly cashless society, P2P offers benefits for transferring funds, primarily to friends and family—but to a growing number of retailers as well. In many cases, the transfer of payment is free for the user, and comes directly out of a bank or credit card account that is linked to a mobile application.



Bonus Content: Discover other ways young people are affecting the payments business. Log in to listen to “Millennials: How They’re Shaping the Future of Payments” from TRANSACT 16. Visit [bit.ly/1TOhOrS](http://bit.ly/1TOhOrS).

## Bridging the Generational Gap

“The market for P2P payments continues to grow and evolve as new technologies, new vendors, and new capabilities stream into our daily lives, providing consumers with a dazzling array of options for sending money to other people for whatever reason they need,” concludes a report by Javelin, “P2P Payments in 2015.” The study found that Millennials ages 25 to 34 are the “power users of mobile P2P” because they typically send the largest amounts with the most frequency. The top three uses for P2P payments are to give gifts (39 percent), to pay a bill (38 percent), and to repay a friend for entertainment and dining (29 percent), according to Javelin.



The rise in popularity of P2P can be attributed to several factors, says Matthew Goldman, founder of Wallaby Financial and CPO of BankRate, with adoption by young adults as the most significant driver. “At its most basic, people don’t carry very much cash anymore. There is a lot of attention to Millennials not carrying credit cards, but they do carry debit cards, as do most of the general population,” he says. “With little cash, but active social lives, there is a need to pay each other for meals, tickets, and more. P2P payments makes this easy.”

Millennials were “the early adopters, with whom P2P became popular, and now it’s moving out of the early adoption stage and into the mainstream,” says Emily Boese, senior manager at First Annapolis Consulting. In August, First Annapolis released its latest “Study of Mobile Banking & Payments,” which found that adoption of P2P has more than doubled in the past year: While only 13 percent of consumers had made a recent P2P payment using their mobile phone in May of 2015, that number had grown to 27 percent in June of 2016.

The report also found that use of P2P payments is highest among Millennials. Thirty-seven percent of consumers younger than 35 have made a P2P payment, compared to only 23 percent of those ages 35 to 44, and 15 percent of ages 45 to 54, according to the First Annapolis data.

“Consumers are increasingly confident transacting online and on mobile phones,” says Boese. And just as Millennials were some of the earliest adopters of smartphones, they are paving the way for a broader spectrum of individuals to test P2P payments.

### Larger, More Social Transactions

As P2P gains acceptance among consumers, the technology is evolving, with many developers working in tandem with social media to expand options. “Embedding P2P payments in other experiences is the biggest trend to watch,” says Goldman. Square,

Facebook Messenger, and Google’s payments within Gmail are the “best examples” of this strategy, he says. “Putting a payments button in an existing social experience makes it easy.”

Venmo, the current P2P poster child darling due to its “simple interface, mobile focus, and a little bit of fun thrown in to make it very popular,” says Goldman, is well-known for its tie-ins to social media. Transactions are free with a linked debit card, linked bank account, or current Venmo balance, while credit cards require a 3 percent transaction fee. Each Venmo account has a limit of \$299.99 in transactions per week—unless a user verifies his or her identity by linking with a Facebook account or adding personal information, including last four digits of a Social Security number, zip code, and birthdate; then, the per-week limit rises to \$2,999.99.

In addition to allowing P2P transactions, Venmo has several features that are familiar to social media users. Users can add, search, and invite friends to join the platform, and each transaction is automatically shared on the user’s Venmo newsfeed—including who the user paid and why (but not the amount), unless the user selects a privacy setting. Friends also can “Like” or “Comment” on charges, creating a truly social transaction environment.

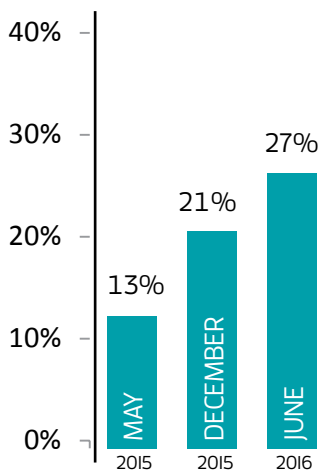
Similarly, several other apps blend payment capabilities with social networking. Snapchat has a new P2P feature called Snapcash; Square’s Square Cash app allows customers to set up profiles and locate nearby Square Cash users via Bluetooth; and Fiserv’s Popmoney app allows users to access the payment’s memo field to send messages. Even Bitcoin recently entered this space: Bitcoin provider iPayYou announced last July that it has launched “Pay-by-Twitter,” a service that allows users to support their favorite campaigns and charities and share funds with friends and



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## GROWTH OF P2P TRANSACTIONS

Percentages Who Reported Sending/Receiving Money Via P2P Using Mobile Phone "in Past 12 Months"



Source: "Study of Mobile & Banking Payments," First Annapolis Consulting Inc.

family using Twitter handles. The recipient is not required to have an iPayYou account as long as he or she has a Twitter handle.

### Retail Mix-Ins

As more consumers choose to leverage P2P as part of their everyday lives, merchants are finding ways to partner with these apps to allow consumers to purchase retail products and services via this technology. For example, Venmo, which

was purchased by PayPal through its \$800 million acquisition of payments processing startup Braintree in 2013, announced in July that it has added a "Pay With Venmo" buy button that enables in-app payments in partnership with several e-commerce merchants. Users can "speed through checkout, split and settle the bill instantly, and share the experience with friends," according to the blog announcement. It also provides more ways for users to interact with Venmo and can tie them more closely to the products they purchase. Initially launched in partnership with 11 merchants—including Munchery, Gametime, Priv, Parking Panda, Boxed, and delivery.com—Pay With Venmo will reportedly be expanded to include more retailers in the near future.

Combining a popular P2P app with retail options—also known as P2B, for P2P payments for businesses—may benefit both Venmo, which charges merchants 2.9 percent of each transaction, plus \$0.30, and the participating merchants, who gain access to a new payment form that is popular among Millennials, as well as others. This could give a boost to merchants because consumers ages 18 to 24 conduct an average of 10.7 e-commerce purchases a month, and consumers ages 25 to 34 conduct 13.9 purchases a month, according to Javelin research.

In addition, PayPal has announced a partnership with Visa, which gives Venmo access to Visa Direct services, meaning consumers can instantly load their Venmo accounts with a Visa debit card—considerably shortening the amount of time consumers have to wait before making in-app purchases.

Facebook also is reported to be building a new P2P/retail function. Currently, Facebook allows users to send money to friends through its Messenger app, but several news sites have reported that the company will offer its Messenger chat app as

## Banks Expand P2P Offerings

Just as we are seeing growth in the number and capabilities of non-bank-owned apps such as PayPal and Venmo that enable person-to-person (P2P) payments, there has been a significant evolution in the P2P offerings of U.S. financial institutions.

Most of the major banks offer P2P transactions through their mobile apps or websites, many of which are facilitated by clearXchange, an Early Warning Services (EWS) company. The clearXchange P2P network, which will reportedly be renamed "Zelle" in the first half of 2017, is owned by several large U.S. banks and works through mobile banking apps to offer P2P functions. While there has typically been a waiting period of up to three business days, or longer, for many bank P2P transactions to go through, at least three banks are now live with "real-time" P2P payments on the clearXchange network: Bank

of America, U.S. Bank, and JPMorgan Chase. More banks are expected to follow suit and add real-time functionality to their P2P offerings.

In addition, EWS announced in August that both Visa Direct and Mastercard Send will be enabled on clearXchange.

Visa Direct is a payments platform designed to allow financial institutions, developers, and partners to offer secure real-time P2P payments and business disbursements. The Visa Direct platform has the ability to transfer funds within minutes to and from more than 200 million Visa debit cards in the United States, as well as to and from non-Visa branded debit cards, according to Visa. Funds are transferred into a customer's account linked to a debit card without the need for deposit account number and routing code details.

Mastercard Send is a personal payments service that reaches nearly all U.S. debit card accounts, and enables

sending and receiving funds, according to Mastercard.

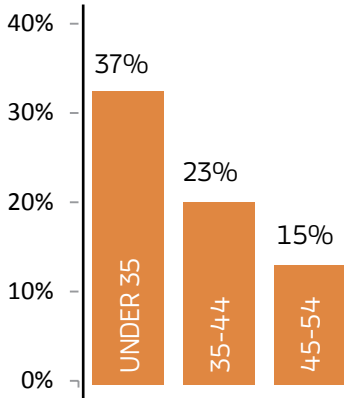
Fiserv already offers Visa Direct as part of its Popmoney personal payments service. Now, EWS is enabling P2P payments on its clearXchange network using U.S.-issued debit cards through the Visa Direct platform.

"Early Warning's partnerships with Fiserv, Visa, and Mastercard create nearly universal reach to the U.S. banked population—a critical element for customer adoption," according to a press release issued by First Annapolis Consulting.

"We're always looking at ways we can deliver convenient, fast, and secure payment solutions to meet our customers' needs," says David Godsmann, head of emerging payments at Bank of America, in a Visa press statement. "By working with Early Warning and Visa, we can offer consumers more choice and greater options for faster payments."

## P2P TRANSACTIONS BY AGE

Percentages of Individuals Who Have Made a P2P Payment



Source: "Study of Mobile & Banking Payments," First Annapolis Consulting Inc.

another way to pay for in-store purchases. According to the reports, Facebook is building POS functionality into Facebook Messenger, and even potentially incorporating Apple Pay. If that comes to pass, Facebook Messenger could be used for purchases in brick-and-mortar stores in addition to online retail businesses, eliminating the need for consumers to stand in line at checkout counters.

### Opportunities for Merchants

The P2P space has become an area that retailers and ISOs/acquirers will not be able to ignore. In the first quarter of 2016, more than \$3.2 billion was transferred among users of the

Venmo app, up by \$1.26 billion over the first quarter of 2015, according to PayPal's earning release. In January of 2016 alone, \$1 billion was transferred via Venmo, according to PayPal. And the average Venmo user sends money through the app several times per week, says PayPal CEO Dan Schulman.

P2P will no doubt have some effect on the traditional payments profession, but just what that effect will be is unknown at this point: "There is some threat of displacement over the long run as P2P players already have their own acquirer," says Boese, "but I could also see a future where the acquirer/ISO is a distribution channel for P2P services to merchants."

As P2P becomes even more mainstream, payments professionals will be called upon to help merchants understand how P2P works, and how these transactions might be leveraged by retailers. Payments professionals should "be aware of what merchants want, and have ongoing conversations to determine the optimal solution for each merchant," says Boese. While restaurants and bars may be the earliest merchants to accept P2P payments, Boese suggests that some retail companies also may adopt this trend sooner, rather than later. She describes the payments evolution as "a series of slower changes"—so there is still time to determine if and when specific merchants should try to form partnerships or develop buy buttons.

"The industry as a whole is going through a period of change," says Boese. "Consider different options to stay at the forefront of these trends." **TT**

*Christine Umbrell is editorial/production associate and contributing writing to Transaction Trends. Reach her at [cumbrell@contentcommunicators.com](mailto:cumbrell@contentcommunicators.com).*

## Smarter Solutions For Secure Payments



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# Payments on AUTOPILOT

How the IoT and emerging technologies will change how customers pay—and live

By Ed McKinley

**A**s the Internet of Things (IoT) enables an increasing number of smart objects to “talk” to each other without human intervention, payments could slip into the background. Analysts agree that exchanging value could even assume a position similar to the status of household plumbing: You know it’s there, but it doesn’t require much thought most of the time.



Apps like Uber have already made paying more or less “automatic.” Just hop into the car and enjoy the ride without reaching for cash or a credit card upon arrival at your destination, says Tim Sloane, vice president, payments innovation, and director of the Emerging Technologies Advisory Service at the Mercator Advisory Group. Vacationers who stay at resorts using wristbands to tally expenses automatically also pay without much friction, notes Penny Gillespie, a Gartner research director. “It seems to encourage spending,” she says of the practice.

### Effect on Daily Life

In the near future, the family budget will have to include payments that nearly go unnoticed as machines’ electronics, sensors, software, actuators, and connectivity make our wants and needs known to suppliers without asking us, Sloane says. “My washer could ask for more detergent,” he suggests.

“There are a lot of strange examples of IoT,” agrees Thad Peterson, an Aite Group senior analyst. “The important thing with the Internet of Things is to get past the ‘gee whiz’ stuff and look at the stuff that is really important.” A home thermostat, for example, can “speak” with a utility company, adjusting temperature to conserve energy and reduce bills, he says.

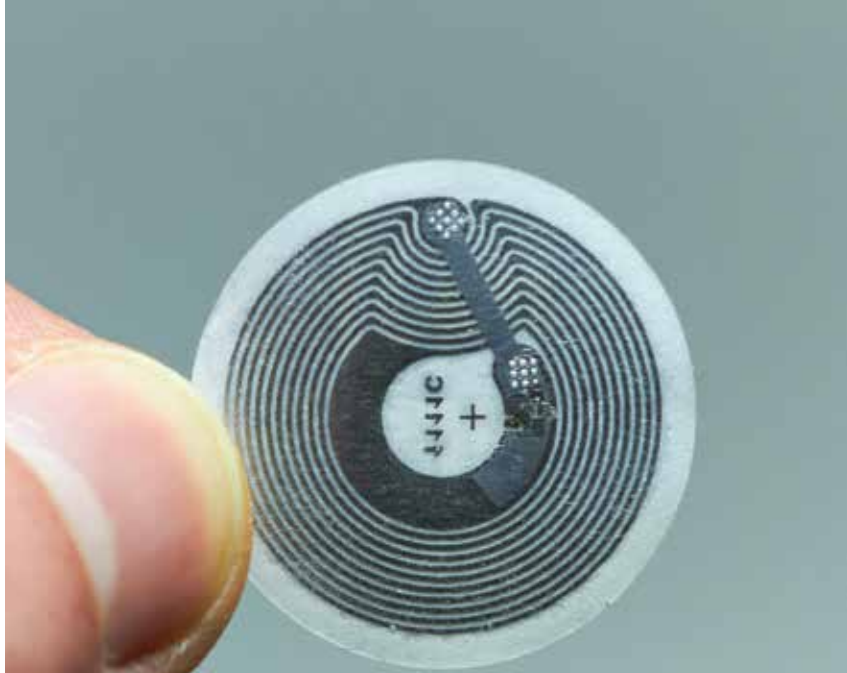
As smart machines proliferate, retailers could use the IoT to monitor systems at a business and replenish products when needed, notes Bryan Yeager, an analyst covering digital trends for the research company eMarketer. For example, Amazon could keep tabs on a printer, take note when toner runs low, and automatically order delivery of toner at exactly the right time. In other words, a computer in the printer communicates with a computer at the distribution center. Yeager explains that “it’s detecting the usage level in the device and integrating that into the ordering, not predicting based on past usage.”

In another example of the IoT, a customer could enter a store, pick out some merchandise, and simply walk out with it. Payment would occur automatically when the customer exits, and there’s no fiddling with cash, checks, cards, or mobile devices at the point of sale. Consumers can get that feeling today by ordering ahead, paying in advance on their phones, and showing up at the store or restaurant to gather their purchases, Yeager points out.

Despite the convenience, making payments through the IoT may not find a large, receptive audience anytime soon, warns Jeff Crawford, a senior manager at First Annapolis Consulting Inc. Mobile payments are taking off slowly even though the mobile smartphone has become ingrained in modern life. That does not bode well for IoT payments made by refrigerators that are running out of milk or automobiles in need of oil, he warns.

### Chip Invasion?

Some purchases under the heading of the IoT seem much less jarring. With computers beginning to appear in watches,



## The Curious Journey of Contactless Cards

Everything old becomes new again. Contactless credit and debit cards are making a comeback in Europe, especially in the United Kingdom, because consumers and merchants find EMV transactions too slow. The contactless cards, which users simply tap on or wave above a terminal, resemble the contactless plastic that failed to catch on in the United States a few years ago, says Thad Peterson, an Aite Group senior analyst.

Does that mean contactless cards might get another chance in the United States? Probably not, according to Peterson. America seems likely to skip contactless again, this time because the U.S. payments system will be moving from EMV cards to payments made mostly with smartphones and via the Internet of Things (IoT), he says.

Besides, most Americans have little or no experience with contactless cards. It’s different in places like London, where years ago the Oyster Card began to make riding the Tube beneath the city easier and quicker. Once Londoners became acquainted with using the card on the subway, retailers began accepting the payment for merchandise.

rings, fitness trackers, eyeglasses, and even articles of clothing, consumers can use the IoT at their own discretion, free of the fear that machines will usurp human authority in some scenario worthy of science fiction.

Banks could even stop issuing cards with chips and instead simply issue the chips themselves, says Gillespie. Consumers could use the chips as they choose, inserting them into anything that makes sense for payments. “Right now, the phone seems like the most likely suspect, but, in the future, it could be a chip that is worn however desired,” she says.

The smartphone is expected to get a boost as a payments vehicle in the early 2020s, when new tech standards take effect, Gillespie says. The standards, called 5G because they will

# AS SMART MACHINES PROLIFERATE, RETAILERS COULD USE THE IOT TO MONITOR SYSTEMS AT A BUSINESS AND REPLENISH PRODUCTS WHEN NEEDED.

create the fifth generation of wireless communication, have not been agreed upon, but many experts are predicting a quantum leap in speed and functionality.

Phones also have a head start on security, compared with putting chips into nearly everything and building in payments capability, Gillespie notes. For some time, companies throughout the payments industry have been

working to prevent fraudsters from hacking into mobile payments made with phones. Building digital trust in IoT will take time and will require great effort, she says: "Not only does your partner have to be trustworthy, his technology has to be trustworthy."

## Unique Security

While some are pondering how the spread of computing power in almost any object will change the world, potential for disruption is looming in the high-tech use of humans themselves. Yes, that would be biometrics for authentication.

Authentication requires something you know, something you have, and something you are, explains Gillespie. A fingerprint is something you are, and it ties the phone to the phone user, but the bank doesn't have a record of the fingerprint, she says. A remedy might exist, she suggests, if banks and telecommunications companies could agree to cooperate. In any case, fingerprints stored on the device appear more secure than biometrics stored in the cloud, Yeager says. And, as Peterson notes, fingerprints form the basis for Apple Pay, making it extremely secure; he also states that Samsung is introducing a phone capable of iris scans.

Meanwhile, a Canadian company has worked with a wearable that identifies its user based on heart rhythms, and banks are using voice recognition to authenticate

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representatives of corporate accounts. In Asia-Pacific, companies are using vein recognition for ATM access. "There are certainly some interesting experiments going on," says Yeager.

Biometrics can even identify a person by measuring and recording characteristics of his or her gait and then comparing the records with a new reading of the walk of the person carrying the device, Sloane says. Using that method or other types of biometrics, a device could keep a constant fix on the identity of the user. That way, the consumer would not have to take any action for authentication; instead, the user is constantly identified. What's more, measuring the gait could also detect early signs of ailments that include arthritis and diabetes, he notes.

Smart devices store so much data that they can perform tasks like estimating the time needed for a commute, even if the user hasn't mentioned where he or she lives or works. The device would know from observing geo-positioning over time, says Sloane. Unprompted, a device could assemble data it has collected and then make a "decision" to remind a user sitting in a Starbucks to leave in 18 minutes for a meeting. Consumers might "freak out" that their phones are observing them so closely, but they can't deny the potential advantages that brings, he notes.

Besides, society has long since acquiesced to the loss of privacy in a connected world, Gillespie says. She recalls a meeting in 2003 with executives who talked at great

length about the "evils" of biometric payments. They feared the public would associate fingerprints with criminality and find surrendering the prints too invasive. Her message to the executives was that government would use biometrics and thus help condition the public to accept them. Eventually, Americans would embrace biometrics, she told them. "Information that is protected, guarded, and used in context is usually well-received," she maintains. "Besides, we gave up all privacy with the introduction of the internet."

Those still clinging to the remnants of privacy may make their last stand by keeping their whereabouts a mystery to machines, but the inaccuracies of geo-positioning also make the technology a bit ineffective for authentication, says Peterson. "It can get pretty vague," he contends.

A stronger authentication method is the device ID, Peterson suggests. In an Apple Pay transaction at the point of sale, a tokenized credit card in the phone provides the credit card information for that account, the thumbprint that identifies the user, and a device ID that says the user owns the device, he says. "That's pretty secure," he notes.

Now, it's merely a matter of getting used to computerizing just about everything and paying without giving it a second thought on the Internet of Things. **TT**

*Ed McKinley is a contributing writer to Transaction Trends. Reach him at [edmckinley773@yahoo.com](mailto:edmckinley773@yahoo.com).*

The advertisement features a dark blue background with a radial light effect. At the top left, the text "eProcessing Network" is written in white, with a yellow padlock icon to the left of "eProcessing". Below this, the word "INTRODUCES" is in white, followed by "Premier Plus" in large yellow letters. To the right is a 3D rendering of a white and blue card reader with "PREMIER PLUS" printed on it. Below the card reader is a gold shield-shaped emblem with "PROCESSING 20 YEARS" inside. On the left, two bullet points describe the device: "Our Secure EMV and MSR Bluetooth Card Reader" and "Supports iOS and Android". At the bottom left, the phone number "800-296-4810" and the website "eProcessingNetwork.com" are listed. Along the bottom edge, there are seven circular icons representing different services: eCommerce, Bill Pay, QuickBooks, Texting, Level 3, CDM, and Inventory.



# Changing the Public Perception of EMV

Despite confusion or frustration, payments pros need to communicate chip migration successes

By Jared Drieling

Just one year ago, many U.S. consumers were completely unfamiliar with the letters “EMV” or the term “chip card.” Today, most Americans know the words and likely have a chip card in their wallet or purse, accompanied by an opinion about the change. But, they may still not fully understand why the shift to EMV is an important advancement in securing the payments infrastructure.

Despite claims to the contrary, we’re exceeding most expectations in terms of EMV adoption. We expected the transition to take at least five years, which is the time it took European nations to get to 50 percent chip-transaction market penetration. Nearly three-quarters of Americans report they already have at least one chip card. According to preliminary results

conducted by The Strawhecker Group (TSG), about half of all U.S. merchants now have an EMV terminal and a third of U.S. merchants are enabled and activated (in other words, accepting chip-on-chip transactions).

### Why the Negative Publicity?

For years before the liability shift, the payments industry worked to drive awareness, education, and early integration of this technology and to help businesses convert to this more secure form of card payment, which protects them and their customers. The card brands and issuing banks spent millions on merchant and consumer campaigns to ensure the public was aware of the change well before October 1, 2015.

Despite those efforts, confusion has been a signature of the shift and unfavorable stories in the media have been in no short supply. The EMV migration has been a challenge for merchants. Seventy-six percent of them, in the National Retail Federation’s inaugural “State of Retail Payments 2016” study, reported that EMV implementation was their top challenge during the past 12 months. Merchant frustration regarding EMV, especially around testing and certification, has led to nearly daily headlines criticizing the payments industry’s handling of the chip card migration.

Initially after the EMV starting line in October 2015, many media reports incorrectly described EMV as a government mandate or an initiative that had little benefit for merchants

in general. We are now starting to witness more EMV education in the market, specifically from the media in terms of how it views and understands the importance of EMV in the U.S. payments ecosystem.

However, the growing pains associated with the switch to chip cards have proved frustrating for consumers. Nearly a year after the shift, consumers still often face confusion and delays at checkout counters when trying to make payments. Many consumers don't know what to do at checkout—whether to swipe or insert a card, or sign or use a PIN. They are dealing with longer lines, and merchant staff is still learning about the cards and how they work.

Social media magnifies these frustrations. A single tweet can spread like wildfire. For example, a recent tweet calling for everyone to get on the same page on EMV garnered tens of thousands of retweets and likes and led to a story in the *New York Times* (read it here: [bit.ly/EMVtweet](http://bit.ly/EMVtweet)). Keep in mind, this tweet did not come from a celebrity but from a gentleman with less than 2,000 followers.

### Moving Forward

When communicating with the public, it is important that we put the migration in context. This process of upgrading every merchant in the United States is unprecedented in its complexity and scale. In fact, this is the largest change in commerce in the past 40 years. Payments is an ecosystem, requiring many in-

dependent players working together to advance this vital consumer convenience.

To put EMV into perspective, the transition from analog to digital television in the United States took six years. It took the mobile

should entice previously reluctant merchants to upgrade their terminals.

Beyond security, the chip card upgrade also ushers in the future of payments, as most EMV terminals are equipped to accept contactless

## DESPITE CONFUSION OR FRUSTRATION, AS AN INDUSTRY WE NEED TO COMMUNICATE OUR SUCCESSES.

phone industry 13 years to reach 25 percent adoption. Even the upgrade from cell phones to smartphones took five years to reach 25 percent of the population.

Despite confusion or frustration, as an industry we need to communicate our successes. EMV is working to protect the U.S. payments ecosystem from counterfeit card fraud. The share of financial losses stemming from counterfeit activity fell 18 percent in the first quarter of this year, reaching its lowest level since early 2013. Merchants who have made the switch are enjoying the benefits of EMV; in March, Visa merchants that accept chip cards reported a 35 percent year-over-year decline in fraud. That's a huge cost-saving incentive, which

payments, enabling tech-savvy consumers to pay using the mobile device that is rarely out of hand's reach. This technology also offers merchants possibilities for personalized marketing, engaging rewards, and myriad opportunities to capitalize on Big Data.

The EMV migration, despite its present perception, has made great strides in which the payments industry as a whole should take pride. It is a step toward making payments more secure for everyone. **TT**

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# Kevin Overcash



is the director of SpiderLabs North America, Trustwave's team of ethical hackers, forensic investigators, and researchers. He has more than 35 years of engineering experience and 18-plus years of working for commercial network security vendors. *Transaction Trends* talked to him about the firm's most recent study on security testing and general vulnerabilities in the retail and financial services sectors.

**The latest study indicates that organizations of various types are not testing their security. What kind of testing are you referring to, and why aren't they doing it?**

The security testing in the study refers to performing occasional or regular scans of their network infrastructure and websites as well as penetration tests of critical networks and applications. Many organizations are required to perform these tests by regulations (such as PCI), but for those that are not, security is often not performed proactively, rather reactively after an incident occurs. While the trend has certainly improved and more organizations are proactively performing security testing, many continue to procrastinate.

**Please elaborate more on the financial services industry participants and how proactive they are about testing.**

"Financial services industry" in our study includes banks as well as credit card processing services, investment firms, and insurance companies. These industries provide easily resold assets (such as credit card numbers) that have attracted hackers due to the easy rewards. As a result, this industry has in general been far more proactive with regard to security and regulations. Many organizations in the financial services industry have developed large in-house security teams that work with managed security

providers to perform proactive security testing and monitoring.

**What types of attacks are most common in the retail sector and other industries where payment information is stolen?**

The "2016 Trustwave Global Security Report" summarizes data collected by monitoring billions of alerts daily in our security operations centers, and we found that over 90 percent of the attacks detected in the retail sector last year were related to credit card data theft. The most common forms of attack to obtain this data are exploiting remote access, most commonly over WiFi to attack POS devices; SQL injection attacks against websites to extract customer information out of databases; and misconfiguration of network services that permit attackers access to sensitive data.

**As consumers, we hear a lot of about breaches regarding payment information, and studies show retailers are most often hit. Yet, many experts say that PII is more valuable than card numbers to the bad guys. Consequently, do you think the retail sector is the most vulnerable?**

For PII, the health sector is a much higher value target than retail. Retailers will have addresses, phone numbers, and email addresses—

as well as credit card data—but health-care providers have all of that plus information like family members and Social Security numbers, the latter being the most valuable for identity theft. That said, retailers are a softer target because of their public exposure. There are thousands upon thousands of retail branches that are easily accessed by the public and entry-level employees. This makes those networks easy prey for the bad guys, and they can still use addresses, emails, and phone numbers to do much of their dirty work.

**Based the work that SpiderLabs does with the retail community, what observations have been the most enlightening?**

Something often unexpected is that in the retail industry, some of the biggest security risks relate to entry-level employees. Security training for these employees is frequently focused on physical theft whereas training regarding email and computer security is often secondary. In addition, organized criminals will often enlist employees to clone credit cards, harvest customer data, or enable an attack on the company's infrastructure, and better methods of monitoring for this type of behavior need to be implemented. **TT**





—Josephine Rossi

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