ISO&AGENT

January/February 2018

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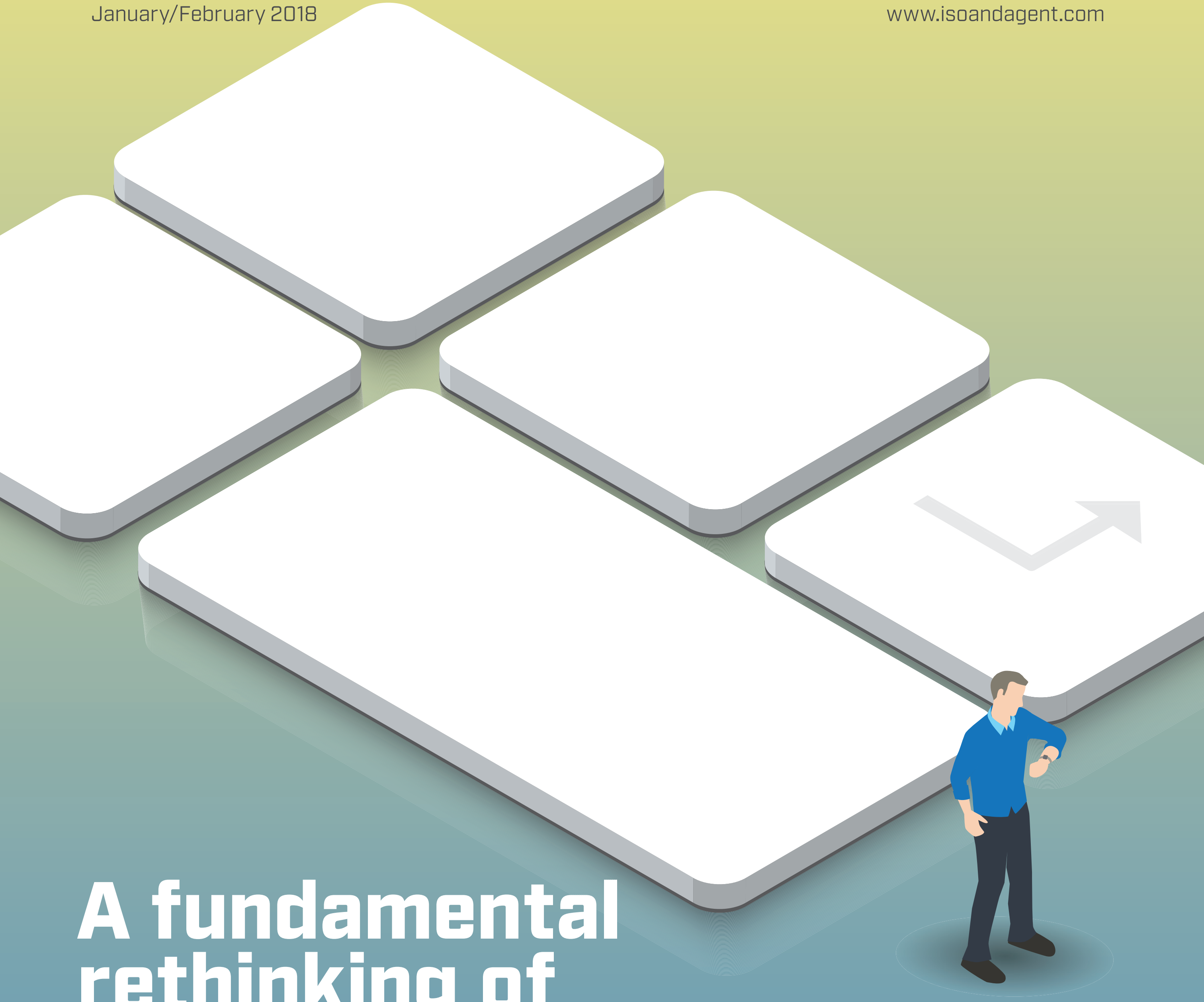

A fundamental rethinking of authentication

Merchants assert that the old rules of card payments should no longer apply. Recent decisions on signature authentication show that networks don't disagree.

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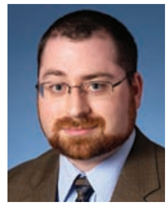

Daniel Wolfe
Editor

Merchants are going high-tech

TECHNOLOGY IS GIVING MERCHANTS MORE OPTIONS.

The troubled — but steady — advancement of bitcoin and other cryptocurrencies gives merchants more ways to accept payments in a market where processing speed and costs are still important factors. But bitcoin is also a victim of its own success, and its own rising fees and transaction times led Stripe to discontinue its suport of the digital currency.

Meanwhile, the plastic card is turning into a new platform for innovation, with companies developing ideas for multi-account cards and built-in biometric authentication.

Behind the scenes, even more factors are at play, reducing the risk of card-not-present payments and eliminating the necessity of signature authentication. And 3-D Secure is being reinvented to take advantage of many of these developments, giving merchants more ways to accept payments securely in online and mobile channels.

It is vital that ISOs, agents and their partners be up to speed on all of these developments to educate merchants on the ways they can benefit from these trends and better serve their customers. **ISO**

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3-D Secure gets a digital makeover

3-D Secure 2.0, a revised version of an e-commerce authentication system, harnesses new technology to become more user-friendly. But is it enough to win over jaded merchants that swore off the 1.0 version? **BY KATE FITZGERALD**

Patience could be wearing thin for those awaiting action from the card networks' emerging fraud-prevention protocol known as 3-D Secure 2.0. But after many delays, the technology appears to be awakening from hibernation.

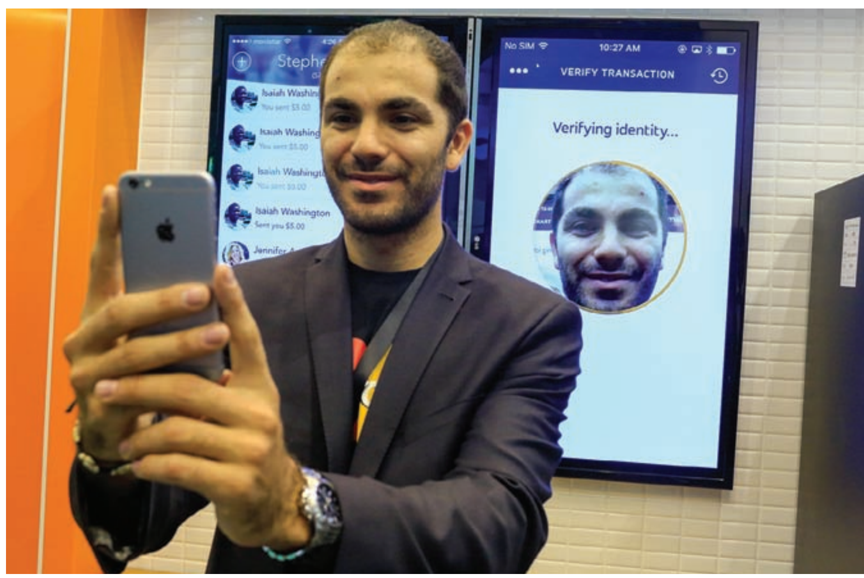
Key factors driving renewed interest include U.S. issuers finally moving past the painful EMV migration to focus more attention on resolving card-not-present fraud, plus Europe's new PSD2 payment regulations taking effect, mandating the development of dynamic strong authentication for transactions.

3-D Secure 2.0 leverages risk-based authentication in real time with additional data, including biometrics.

"Authentication strategies across Europe are being reviewed in light of PSD2 SCA requirements, and as we finally get more clarity on those, the adoption of 3-D Secure 2.0 should accelerate," said Zilvinas Bareisis, a senior analyst with Celent.

New categories of digital merchants are showing real enthusiasm for the new, streamlined version of 3-D Secure 2.0, according to Bob Reany, Mastercard's executive vice president for identity solutions.

"Some of the biggest advocates for 3-D Secure 2.0 are large merchants who deal in digital content, and considering that previously there really was no mechanism for this category of goods within 3-D Secure, their interest in the new version is very promising," Reany said.



A demonstration of Mastercard Identity Check, or ªselfie pay,º which is an implementation of biometric authentication in 3-D Secure.

There's much less excitement among mainstream e-commerce merchants—including many in North America—given the experience of the first, clunkier iteration of 3-D Secure that emerged around 2000. That version promised to thwart online fraud by requiring consumers to take an additional step to authenticate transactions directly with the bank — a detour from the merchant checkout page which added friction and hurt sales, according to the stores that used it.

"Many merchants still see 3-DS as a challenge possibly resulting in increased shopping cart abandonment, in exchange for limited gain in fraud control," said Michael Vaselenak, a consultant at VCS Technologies in Toronto, who said most Canadian merchants didn't find the first version of 3-D Secure to be particularly useful.

But merchants now are fed up with ever-escalating costs around controlling online fraud, and more are interested in collaborating with card networks and issuers to fine-tune the new version of 3-D Secure 2.0 to their needs so they might benefit from fraud-loss liability shifts the networks are promising for participating merchants. **ISO**

Fuel Rewards carves a niche

As the Plenti multi-merchant rewards program sees some of its merchants cut ties, a different multi-merchant pact called Fuel Rewards says it has found success by narrowing the focus of its marketing message. BY DAVID HEUN

Even as more retailers dropped out of the Plenti multi-merchant loyalty program this month, the faltering American Express program does not represent a death blow for such collaborations.

Plenti's mistake may have been its attempt to suit every industry that it could handle, with participants selling food, clothing, gas and other products. By design, no one merchant was highlighted over any other — a move meant to avoid competitive conflicts.

Dallas, Texas-based Excentus is taking a different approach in Fuel Rewards, a multi-merchant loyalty program that funnels all rewards to purchases at Shell gas stations.

The attraction of cheaper gasoline has resulted in Excentus enrolling 12 million U.S. consumers who saved $1 billion in fuel costs overall.

"Gas discounts tend to be particularly attractive rewards programs," said Gil Luria, director of research for equity capital markets at D.A. Davidson & Co. "Grocery chains such as Kroger's and Safeway have been leveraging them for several years as their primary loyalty program."

Gas is a frequent recurring expenditure for most households, Luria said.

"Other cross-brand rewards programs tend to be less successful, likely because of the differences in shopping

behavior within the target consumer group," he added.

What works for Fuel Rewards likely has played against Plenti and other multi-merchant arrangements that have had varying degrees of success. American Express says it will continue with the Plenti program, but acknowledged it was in discussions with merchant participants regarding the program's future.

Consumers like to earn and redeem points in the easiest fashion possible, and the link between Plenti and other merchant loyalty accounts was not always clear. Plus, Plenti had exclusivity rights for each retail sector — if one merchant from a particular category signed up, its competitors got locked out. Fuel Rewards simply has Shell gas stations as its foundation and sole fuel provider, and opens the program to all other retailers and restaurants.

"Plenti got kind of messy on the execution side," said Brian Riley, director of card services for Mercator Advisory Group. Riley said he carries both a Fuel Rewards card and a Plenti card, and he has noticed significant differences.

"I could not get the Plenti card to work correctly on occasion, and I have points earned that I cannot get at," Riley said. "Under American Express, I expected it to be a very strong program, but for whatever reasons, it just did not have good execution at the point of sale."

Fuel Rewards launched in 2012 as a card program, featuring a Fuel Rewards card used to authenticate membership and lower the cost at the pump based on points earned. After seeing the pump adjust the price, a member would then insert a payment card to initiate the transaction.

It still operates in much the same manner, though Excentus has developed an "Alt ID" number to key in at the pump as an alternative to swiping a card.

Excentus is eager to expand options at the pump with its partners, particularly Shell, which has its own portfolio of cards, said Jeffrey Hassman, chief marketing officer of Excentus.

"We are always trying to make it easier for customers to redeem, and that is the kind of thing that requires Shell and us to work together in developing payment methods," Hassman said.

ExxonMobil has its own prominent loyalty program in SpeedPass, which recently launched a new app for loyalty and payments.

ExxonMobil remains a part of the Amex Plenti program, but acknowledged early on that incorporating it into the Mobil network was a complicated process.

Excentus wants to avoid any integration problems and wants to consider contactless and mobile payment if such mechanisms appeal to consumers. But the program's biggest asset is the buy-in of its fuel partner.

"Having Shell in your market as the dominant player really makes the program work well," Mercator's Riley said. "At every Shell station, the pump indicates what to do and makes it very easy for a Fuel Rewards member … It's very clever, and they have enough offers at the merchant locations to make it interesting and to make you want to keep using it."

Merchant locations include the Rewards Network of restaurants, T-Mobile, Jiffy Lube, and Giant, Hy-Vee, Country Mart and Stop-and-Shop grocery chains. **ISO**


OPEN

A FUNDAMENTAL RETHINKING OF AUTHENTICATION

Merchants assert that the old rules of card payments should no longer apply. Recent decisions on signature authentication show that networks don't disagree.

By David Heun

Image from gettyimages.com

With the major card brands deciding to no longer require signature authorization on card transactions, merchants want to see more network rules go the way of the dinosaur.

Standing out like a sore thumb is the card network practice of charging higher fees for card-not-present transactions, a practice that made a lot of sense in its early days when merchants might mail or phone in orders with payment information.

Those transactions remain high-risk even today, but other situations categorized as card-not-present are far more secure.

Newer transaction types like e-commerce and mobile payments use tokenization, biometrics and other security layers, making them arguably more secure than someone presenting a plastic card in person.

Even if this were not the case, online merchants carry the liability for fraud.

"Mobile payments and other innovations have been assigned card-not-present rates with little or no thought or analysis of the unique characteristics of these transactions," said Mark Horwedel, CEO of the Merchant Advisory Group. "It's high time the networks removed the premium charged for transactions that occur on the internet or in other venues in which the merchant is taking most or all of the risk of fraud."

Stephanie Martz, senior vice president and general counsel of the National Retail Federation, says much of the problem lies in whether the payment card networks would establish less expensive options for routing online and mobile payments.

"Until there are true routing options for online and mobile transactions, charging monopoly rates is going to continue to be a problem," Martz said.

Visa was the last of the four major U.S. card brands to have announced plans to drop the signature requirement, but said it cannot address any potential rate or interchange adjustments or details for this story. Mastercard did not respond to inquiries.

The complexity of the interchange tables in the U.S. has been at the core of many legal problems between card brands and merchants, but also has a role in how difficult it might be to determine exactly where the card networks could address overall changes.

Rates differ by type of transaction, retail sector, risk levels and the amount of the transaction.

"There are definitely a lot of gray areas," said Brian Riley, director of card services for Mercator Advisory Group. "For example, Apple Pay transactions come across the network differently (as cardholder present) than your regular e-commerce transaction, but it's the question of whether the card is really present or if it is present within an operating system."

In some ways, that's what merchants are arguing — that today's technology provides many more ways to positively determine that persons initiating transactions online are actually who they say they are.

Still, a standardized approach to card-not-present transactions is unlikely, Riley said.

"It's not going to all be done in one way," he added. "You have market power players like Walmart and Jet, which add a whole different dimension, and you have many different mobile wallets, which operate under a whole other interchange table."

This landscape leaves the networks and industry stakeholders contemplating new options such as "customer present" for mobile wallets that render the plastic card obsolete.

This isn't just an option for new digital lines of business. Older industries such as airlines operate almost solely on card-not-present transactions for bookings and, as such, pay a premium to the card brands for that type of authorization and processing.

While the airlines should arguably have different fees because they are paid in advance, these companies have been operating too long on the dated perception of card-not-present transactions, which can carry as much as a 20% premium over card-present transactions, said Chris Priebe, finance director for treasury payments and risk at Southwest Airlines.

"Payment technology is much more efficient and secure now."
-Chris Priebe, finance dir., treasury payments and risk, Southwest Airlines

"Payment technology is much more efficient and secure now, but with the card-not-present rules, we still own the fraud if someone steals from us," Priebe said.

For every dollar of actual card fraud loss and loss prevention that Southwest is obligated to incur, Priebe estimates that Southwest pays an additional $10 to the card companies in the form of the card-not-present premium.

In another sector, that's equivalent to paying 10 times your car insurance premiums, but still having to pay for all damages to your car.

Merchants argue that no insurer

could afford to price their product this way in a free market, nor should the card networks continue to price this way for card-not-present commerce.

That said, the advancement in e-commerce transactions allowed the airlines since the 1990s to ultimately lower costs as bookings moved online.

“You can’t deny that without card-not-present, the airlines wouldn’t have much online business, and lower online prices have made the customer much happier as well,” Priebe added. “But the software and hardware advancements of the day had as much to do with our success in our dotcom channel as did the creation of card-not-present acceptance rules. Software and hardware costs have declined precipitously, whereas CNP network fees have done nothing but increase over the past 20 years.”

Merchants will continue to press the card brands and payment providers on what they would consider a fair price for digital payments.

“Clearly, something has to happen,” said Thad Peterson, senior analyst with Boston-based Aite Group. “We have transactions occurring now in the card-not-present space that are as, or more, secure than transactions happening in the physical world space.”

A concept that has been brought up among payments professionals is “device present” rather than card present, Peterson said.

“That would seem to be a logical approach in terms of migrating to something different,” he added.

Regardless of how interchange rates evolve, everyone involved in payments is on the same page about making it easier for consumers to complete transactions online or at the point of sale.

“Everyone in the industry understands that friction is the enemy and anything to reduce it is a win,” Peterson said. “To me, it’s a consistent then to remove signatures and move to dual interface cards and other mobile initiatives.”

That sort of development would lead to card-not-present transactions being far more secure and, thus, not in need of higher risk protection for issuers and the networks.

Horwedel and his MAG organization are a little more blunt about it.

“The networks have historically been reluctant to retire these relics of the past simply because they reward the issuers and penalize the merchants,” Horwedel said. “Logic should prevail as with the retirement of the signature requirement.” **ISO**

THE SUNSET OF SIGNATURE

Signature authentication in North America will largely cease to exist in April.

Visa will join the other major card brands in making the signature requirement optional for all North American merchants accepting contact or contactless chip-enabled EMV cards.

Visa's January announcement signals what many in the payments industry had considered a foregone conclusion Ð that signature authentication has been rendered obsolete by the advancement of emerging technologies like artificial intelligence analytics and biometrics to deploy for future payments security.

ªVisa is committed to delivering secure, fast and convenient payments at the point of sale,º Dan Sanford, vice president of consumer products at Visa, said in a press release.

In addition to other card brands also dropping signature Ð and earlier rules that had bypassed signature on small-value transactions anyway Ð Visa cited as a reason its own deployment of more than 460 million EMV chip cards to function at more than 2.5 million merchant locations with EMV chip readers.

EMV security has resulted in a 66% fraud decline for EMV merchants in less than two years, diminishing the need for signature authorization, Visa said.

Mastercard got the ball rolling on eliminating signature when it said last October that it would no longer require the authentication method, also beginning in April of this year.

Discover and American Express followed suit with the same general guidelines in early December.

Those moves by the other major card brands left only Visa stuck on signature.

Visa stubbornly stayed the course with signature over PIN at the onset of EMV in the U.S. in October of 2015, citing a desire for a smoother deployment and customer experience at the point of sale.

Still, it was increasingly clear that signature was an ineffective and clunky method by which consumers presumably proved they were the actual cardholder.

Prior to Visa's announcement, American Express was the last to fall in line with Mastercard and Discover in eliminating the signature requirement for authorization on all card transactions at the point of sale.

Amex said in December it was eliminating signature collection for all Amex merchants globally to provide a more consistent and simplified checkout process, while also reducing merchant expenses associated with retaining signatures.

ªThe payments landscape has evolved to the point where we can now eliminate this pain point for our merchants,º Jaromir Divilek, executive vice president of global network business for Amex, said in a press release.

ªOur fraud capabilities have advanced so that signatures are no longer necessary to fight fraud,º Divilek said. ªIn addition, the majority of American Express transactions today already do not require a signature at the point of sale as a result of previous policy changes we made to help our merchants.º

For one of the largest retailers in the world, the move to eliminating signatures provides merchants much ªgreater flexibility as they experiment with and adopt new technology to provide customers with a faster and more convenient shopping experience,º Mike Cook, senior vice president and assistant treasurer at Walmart, said in the release.

ªThe introduction of our Walmart Pay mobile app has raised our customers' expectations for being able to check out quickly and easily,º Cook said.

ªHaving to sign a receipt can be a hassle for customers and is not necessary to prevent fraud at the point of sale.º

Dynamics learns from the past

For years, Dynamics has been trying to build a market for its high-tech payment card. Its newest iteration benefits from its experiences. BY DAVID HEUN

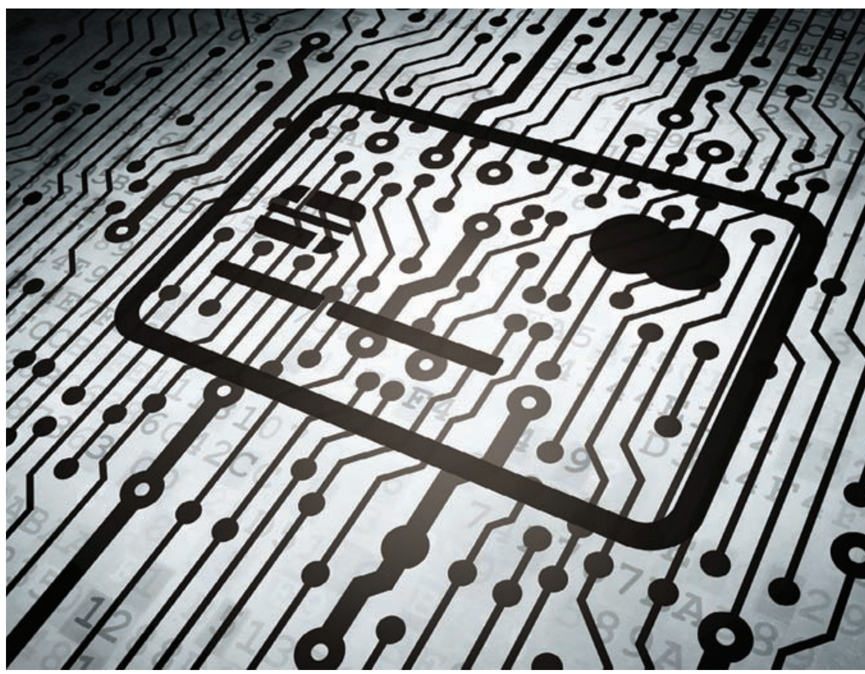
Dynamics Inc. has been committed to bringing high-tech multi-account cards to market for years, but it's tough to sell banks on pricier plastic in the age of mobile wallets and e-commerce.

In unveiling its new Wallet Card, the Pittsburgh-based manufacturer's intelligent card division says it has learned from the recent developments in digital payments. Dynamics went so far as to call its product the first "Internet of Things card" — and true to its name, the card has a direct line to the internet.

Like the company's earlier cards, the new product can rewrite its magstripe to draw funds from more than one account, such as a checking account and a rewards balance. The new product supports EMV and NFC, and it uses a digital connection from Sprint, enabling a lot more.

"Today, a consumer can be watching TV and hear news about a retail or other breach, and then they start looking for their cards to see who to call or what to do," said Dynamics CEO Jeff Mullen. "With the wallet card, they would get a message right on the display of the card that the bank is aware of the breach and has already issued new card codes to your digital card."

That sort of technology can go a long way to help Dynamics break down a wall that has been difficult in the past — convincing U.S. banks and issuers to



take a serious look at Dynamics' wallet card, said Thad Peterson, senior analyst with Boston-based Aite Group.

"I was very skeptical when I went in, but this is a physical manifestation of the digital wallet and I was pretty impressed," said Peterson, who attended Dynamics' presentation at the Consumer Electronics Show in Las Vegas. "The fact that it changes with a push of the button, it is pretty impressive because when it changes the account number, it changes the mag stripe, the EMV chip and the NFC as well."

Dynamics' earlier card also made a strong first impression, but hit some turbulence on its way to market. The vendor won "Best in Show" at multiple Finovate events and signed Citigroup as an early issuing partner, but its Citi card languished in pilot. Dynamics had a more successful deal with UMB Bank, which brought a Dynamics card to market even as Citi dialed back its own commitment.

The new Wallet Card operates on the Visa network, and Dynamics has lined up the IndusInd Bank in Mumbai, India, as well as Sumitomo Mitsui Banking Corp. in Japan as issuers that plan to provide the new cards to customers this year.

Mark Nelsen, senior vice president of risk products at Visa, indicated that the company will offer a Visa Wallet Card this year as well.

"We are excited to welcome the Dynamics wallet card into the Visa family," Nelsen said at the CES technology show, taking place this week in Las Vegas. "It is packed with new technology that creates new experiences, better security, better rewards, and a host of other things."

The product is important for Visa because the company has "been doing card evolution for 50 years now, and this starts to bring new life into card products," Nelsen added. It also allows Visa to move forward with significant growth in the mobile arena as well as keeping a plastic card relevant well into the future, he added.

Some cards will feature three payment buttons for credit, rewards and installment payments. Other electronics within the card allows the user to change colors or logos, depending on the payment button picked. The card itself does not display a credit card or debit card number; rather the card numbers always show on the card's digital display.

"We are wanting to change the payments world without changing how it works," Mullen said. "This is a complete digital card, a true mobile device that doesn't require the consumer to do anything from a [battery] charging perspective."

Dynamics isn't alone in trying to reimagine the plastic card. Gemalto has developed a card with a built-in fingerprint reader as a security play, for example.

Dynamics is heading in a different direction with the wallet card, noting that any type of fraud exposure or instances of the card being lost or stolen is remedied almost immediately through the digital reissuing of a card number.

In addition, when a cardholder is not using the card, it can be turned off to render it useless if it is lost or stolen. The cardholder would "restart" the card through a PIN that can be as small as one or two letters or numbers. If it is in the wrong hands, after a certain number of unsuccessful attempts on the PIN, the card will turn off and stay that way until the actual cardholder inputs a restore code.

The cards will allow downloading of other cards within the same brand or issuer, but it can include, for example, a Visa credit card processed through TSYS and a prepaid card processed through First Data, Mullen said. Dynamics estimates each download takes between 10 and 20 seconds and, by the official launch, that time could be cut in half by Sprint.

But a high-tech card, no matter how impressive, is still a tough sell for banks that are slow to replace tried-and-true technology.

"There is no overnight success story in payments, because it takes years to sell the large issuers into it," Mullen said. "On average, it takes 40 years for a payments technology to run its course and for changes to come into the market, but the good news is that once you have established a technology, no one turns off the core process of payments."

Ultimately, Dynamics has to establish "a critical mass of banks," Mullen added. "When that occurs in this industry, the other banks will take notice and then more people adopt the technology." **ISO**

Gas stations get EMV options

As their 2020 deadline for EMV compliance nears, gas stations are finding more ways to upgrade their pumps for the new payment card standard. BY JOHN ADAMS

Most U.S. merchants faced a 2015 deadline for EMV compliance, but gas stations have until 2020. Those extra years bring with them an assortment of new technology that can fundamentally change the ways motorists fuel up.

At least that's what gas station executive Eric Bunts hopes will happen. Bunts is the CIO at Mirabito, a gas station chain that's an early adopter of "outdoor EMV" for its gas pumps.

Mirabito has migrated three of its locations in upstate New York. It has a total of 108 locations, which average 6 gas pumps per store. It didn't give a timeline for its complete migration, though the gas chain hopes it's retrofitting its pumps in a manner that minimizes the work required to change pumps from magnetic stripe to EMV. It's using Optic, an NCR gas terminal add on that's designed to work across different pump manufacturers and different pump ages, with an open software model for remote updates.

"It's adaptable to legacy hardware and that's a benefit since I'm running 40-year old pumps in some cases," Bunts said. "So you want to be able to retrofit them and breathe life into old hardware."

There's also more awareness of mobile contactless payments. Mirabito will start accepting contactless mobile payments next month at its gas pumps, and again hopes to benefit from consumers using apps such as Apple Pay at other stores. "We've already seen people try to hold up their mobile phones to try to pay at the pumps and we don't even have the Apple Pay sign on the pumps yet." Bunts said.

Mirabito will offer marketing and rewards programs though an integrated bar code scanner. That opens the possibility of wringing more revenue out of the pumps since they can run ads.

Since other merchant categories have completed their EMV migrations, consumers are largely familiar with how chip-card terminals operate. Still, customers are not accustomed to this process at gas pumps, Bunts notes.

"We anticipate a learning curve, stuff like leaving cards in the pump and leaving... since it's really only been a few weeks since we started deploying at the pumps," Bunts said. "But there's such an awareness of cybersecurity and theft and certainly a marketing push for chip cards in general now."

Gas stations are the next and generally final merchant category to move from magnetic swipe to EMV chip cards in the U.S., with a card network-imposed liability shift that was delayed to 2020 (from an original date of 2017) to accommodate the logistics of the turnover. For example, updating gas pumps for EMV may require digging up concrete to replace older wiring. ISO

Why Stripe bailed on bitcoin

Even as many payments companies still wonder what to do about bitcoin, Stripe announced its support years ago. Experience has taught it some tough lessons. BY JOHN ADAMS

Bitcoin has lost touch with its original mission of being an alternative decentralized currency, and Stripe has decided that it is no longer worth supporting for payments.

Though the online payment processor may reconsider its decision down the road, its announcement strikes a major blow to the cryptocurrency's potential for transactions.

"Empirically, there are fewer and fewer use cases for which accepting or paying with Bitcoin makes sense," wrote Tom Karlo, a product manager at Stripe, in a note posted on Stripe's website announcing the company's plan to end support for bitcoin on April 23.

Bitcoin is, in some ways, a victim of its own popularity — and the resulting wild, sudden swings in its value, Karlo explains.

"Transaction confirmation times have risen substantially," Karlo said. This, in turn, has led to an increase in the failure rate of transactions denominated in fiat currencies. "By the time the transaction is confirmed, fluctuations in Bitcoin price mean that it's for the 'wrong' amount."

Bitcoin's fees are high, as much as tens of dollars for a regular transaction, "making Bitcoin transactions about as expensive as bank wires," according to Karlo.

Stripe, which began supporting bitcoin for payments as an early adopter in 2014, is the second major company to say it won't support bitcoin for payments in just the past few days, joining Visa, which said bitcoin and other cryptocurrency's are not "payments players," according to an CNBC interview with Visa CEO Alfred Kelly. Gaming platform Steam also halted bitcoin payments in December, citing costs.

This isn't a death knell for bitcoin, but it is a bad sign for the digital currency's viability in payments.

"Over the past year or two, as block size limits have been reached, Bitcoin has evolved to become better-suited to being an asset than being a means of exchange," Karlo wrote. "Given the overall success that the Bitcoin community has achieved, it's hard to quibble with the decisions that have been made along the way."

But even this success as a trading asset is less than certain, as as many still see bitcoin as a bubble. Experts are predicting bitcoin does have a future for retail payments, though given the size and influence of Stripe and Visa, it's hard to see that happening soon.

In Stripe's case, the rejection is not a Jamie Dimon-style ideological rejection or a national regulatory posture as in China. It's instead a reluctant step back as bitcoin loses its original appeal. Stripe notes that other cryptocurrencies are more viable for payments, noting that it provided seed funding to Stellar. **ISO**

Is Amazon Go too ambitious?

In Amazon's new cashierless convenience store Ð which uses mobile devices and cameras to tally up purchases Ð Jetsons technology meets Flintstones shoppers. **BY NICK HOLLAND**

After a year of teething trouble at the Amazon Go cashierless concept store in Seattle, the e-tailer has finally opened its doors to the public. While a fascinating exercise in the potential for technology to streamline choke points in a store, no amount of Jetsons-esque technology can prepare the company for a stampede of consumers accustomed to Flintstones-era retail.

The Amazon Go store represents the pinnacle of current generation technology, described by the retailer as: "Made possible by the same types of technologies used in self-driving cars: computer vision, sensor fusion, and deep learning," which allows consumers to "simply use the Amazon Go app to enter the store, take the products you want, and go! No lines, no checkout".

However, the Amazon Go store has not had an auspicious start, with the pilot raising issues such as not being able to track more than 20 people in-store and incorrectly tracking items that are moved from shelves. While the bugs have apparently been ironed out, the idiosyncrasies of human behavior are likely to be just as problematic in unattended retail as they are in driverless cars.

"The true test to see if this thing is ready for prime time is to let moms with 3-year-olds shop in the store," said Michael Moeser, director of payments at Javelin Strategy and Research "There's a big difference between a 30-year-old picking up and putting back items and a 3-year-old knocking over displays and throwing things in a cart."

The reason for the complex array of sensors in the Amazon Go store relates to a number of factors — customer analytics, inventory management and real-time diagnostics — but there is also one critical reason for the technology: trust.

In a study conducted by the University of Leicester in the U.K., losses incurred through self-service technology payment systems totalled 3.97% of stock, compared to just 1.47% otherwise. There are checks and balances in place with today's self-service checkouts but these are far from foolproof.

A key difference with Amazon Go is every shopper is known from the moment they enter the store. Amazon has glass-gate turnstiles set up at the entrance, prompting shoppers to check in by scanning an app, much like subway riders might scan an app or a fare card before entering the system.

In Amazon's utopian shopping model, nobody is a stranger. This doesn't wipe out the possibility of shoplifting — any more than security cameras or guards wipe out shoplifting at other stores — but it does change the dynamic in a meaningful way.

"Amazon may be planning on using this one store as a final testing ground, as everyday traffic from the public will test the store concept's technology and algorithms, and will likely lead to improvements," said Dan Keyes, research associate, E-Commerce at Business Insider Intelligence.

Opening the store to the public is a big step, but also a very restrained one. There may be some significant limitations to scaling the Amazon Go concept to anything much larger than a convenience store or quick-service restaurant, with the overhead of technology costs becoming a gating factor at scale.

"No doubt it works in the context of a convenience store," said Thad Peterson, senior analyst at Aite Group. "The real test is scalability, and if scalable, at what cost? How many clerks/POS terminals can be eliminated to offset what has to be a significant install/ management cost?"

However, one of the biggest hindrances for the cashierless store may be that it is just a little too inhuman.

The Amazon Go store isn't entirely a walk-in vending machine — there are associates present for shelf stacking and food preparation, but they are very much relegated to the background. According to research by Retail Touchpoints, 90% of consumers say they are somewhat or extremely likely to make a purchase when they receive assistance from a knowledgeable store associate. Again, the type of store may dictate the degree of human interaction required — you are more likely to ask for consultation on a pair of jeans than a carton of milk, but the power of human interaction should not be underestimated by Amazon, particularly in a store so reliant on digital solutions to an analog experience.

Finally, it is worth asking — what is Amazon doing here? Its intention for retail domination has been clear and present for some time; even prior to the Whole Foods acquisition, Amazon operated a dozen or so retail bookstores throughout the U.S. These doubled as showcases for the company's technology, but otherwise don't look much different from the traditional brick-and-mortar booksellers Amazon once competed against.

Amazon might need to consider its strengths and limitations at some point. It's not unheard of for Amazon initiatives to flop. A few short years ago, Amazon debuted an aggressively priced mobile card reader called Amazon Local Register, and this product quickly frustrated early users and eventually disappeared. The Amazon Fire phone was an even more spectacular failure, even though much of its technology lives on in other Amazon products.

If the company's retail ambitions fail, it would affect the 89,000 Whole Foods employees who are closely watching their new parent company's next moves.

There are already concerns that Amazon's reliance on technology is trumping tried-and-tested retail practices. A recently introduced Whole Foods platform called Order-to-Shelf has caused food shortages in stores, according to Business Insider, which said staff described the system as "militaristic" and "morale crushing." Customers and staff are blaming Amazon for the problem, even though the system was implemented before the acquisition.

Amazon may need to tread lightly to alleviate concerns that its passion for Jetsons-era technology is not blinding it to the needs of the average Flintstones family. **ISO**

Why cryptocurrency still matters

Bitcoin's volatile price and its shifting regulatory status has always worked against its viability for payments. But despite recent setbacks, many companies are still pushing ahead with bitcoin acceptance. **BY CHERYL WINOKUR MUNK**

After Stripe unceremoniously dropped support for bitcoin payments, it would seem that the infamous cryptocurrency had fully transformed into an investment asset that was too bloated for use in payments. But despite these events, many companies are still exploring the potential of digital money for payments.

While most U.S.-based payments processors are not yet offering cryptocurrencies to their customers, they are experimenting internally with how they can offer these services, says Areiel Wolanow, managing director of Finserv Experts Limited, a consulting firm that focuses on blockchain and cryptocurrencies.

It's a competitive proposition; once one processor offers the option, others have to consider it or risk losing market share. This is already happening in Europe and is likely to occur in the U.S. market as well, says Pavel Matveev, chief executive of Wirex, a London-based provider of cryptocurrency wallets.

"Once more and more processors often the capability, more merchants will sign on as well," Matveev says.

Wolanow says he expects to see convergence between cryptocurrency exchanges and traditional payment processors within about two years.

"The business case for this convergence is already strong; it will get stronger still when more countries start digitizing their fiat currencies in the way that innovators such as Estonia or Uruguay are already experimenting with," he says.

In the U.S., some ISOs are already starting to dabble in cryptocurrencies. In September, for instance, Aliant Payment Systems, a provider of merchant services and credit card processing, announced a strategic processing relationship with BitPay, an Atlanta-based global bitcoin payments provider.

To be sure, cryptocurrency acceptance is still very early stage in the U.S. compared with other locations around the globe. In Tokyo alone, for example, there are around 15,000 retailers that accept cryptocurrency, and more merchants in other regions are adding this capability as well, Matveev says.

In the U.S., however, digital payments acceptance is proceeding at a slower pace, and, in many cases, it continues to take a backseat to mobile adoption. For some time now, many ISOs have been more heavily focused on mobile payments and broadening the enablement of contactless payments.

"The acquiring industry, for the most part, is still in the thinking stage when it comes to digital currencies versus rushing into implementation. There's a recognition that there's potential and opportunity, but there's still a lot of thinking and analysis that needs to be done," says Amy Zirkle, vice president

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of industry affairs at the Electronic Transactions Association.

Even so, observers say that because the area is so new, there's a lot of room for enterprising ISOs and agents to help large and smaller merchants understand the market and the various opportunities. Many U.S.-based merchants who don't currently accept cryptocurrency may be confused about this space and what's involved in accepting cryptocurrency payments.

The buzz around bitcoin

"Merchants, especially mom and pop shops, may be hearing a lot about cryptocurrency, but may not know what to make of it or how to adopt it," says Philip Au, a cryptocurrency researcher in New York. "This is a tremendously ripe space for advisory and transaction services."

It may not be a money-maker for ISOs, but it helps ISOs remain relevant and allows them to have conversations with merchants and it shows merchants they are on the cutting edge, says Kelly Mendenhall, vice president of product at CO-OP Financial Services, a payments and financial technology company. Progressive ISOs have an opportunity to help merchants understand the crypto market and what the advantages may be for them, he says.

"It will never hurt an ISO to be in a position to strike while the iron's hot," he says.

Indeed, there are some compelling reasons certain merchants might want to accept cryptocurrencies.

For starters, all cryptocurrency transactions are final, unlike with credit cards where chargebacks are rampant. There's also the potential for substantial savings. Merchants typically pay in the range of 2 percent and 4 percent or more on every credit card transaction, whereas the fee for cryptocurrencies can be a fraction of that.

Cryptocurrencies also provide merchants the opportunity to widen their customer base—especially for those doing a fair amount of business where fiat currency is not reliable, such as Africa, Wolanow says. For others, it's a marketing opportunity. Many customers want to know that the businesses they work with are innovative and on the cutting edge, Wolanow says.

Cryptocurrencies can also be a boon for industries such as online travel, gambling, cannabis and fee-based dating websites that are heavily cash-based, says Ryan Taylor, chief executive of Dash Core Group Inc., which provides software and business development for the Dash cryptocurrency.

At present, bitcoin is the most widely used cryptocurrency, but it's not the only game in town. Just recently, for instance, two payments companies, IDT Corp. and MercuryFX, announced they plan to use Ripple's cryptocurrency, XRP, to improve the speed and efficiency of cross-border payments. MoneyGram is also working with Ripple to test XRP transfers.

And Taylor of Dash Core Group says his company is in talks with companies including merchant acquirers, ISOs and traditional payment processor to offer Dash as part of their existing platform for specialist purposes, such as cross-border transactions. "Those conversations have started over the course of the last couple of months," he says.

Amanda B. Johnson, a cryptocurrency enthusiast and Dash advocate, says it behooves merchants that accept cryptocurrencies to offer customers multiple options. Even though bitcoin is the most widely used cryptocurrency, there are notable drawbacks to using it. One sticking point is that fees associated with bitcoin purchases can be exorbitant (Stripe cited this as one of the factors for its decision to discontinue bitcoin processing).

For many purchases, especially small ones, it's considerably less expensive for customers to use credit cards, Johnson says.

Some of the discussion around cryptocurrency acceptance has been tainted in the wake of bitcoin's volatility. If the price of goods changes so rapidly throughout the day, it may not be as desirable from a merchant's perspective or for customers, industry participants say. In 2017, for instance, bitcoin's value was a nail-biting roller coaster ride, ascending from around $1,000 early in the year to slightly shy of $20,000 in mid-December. In January, the price dropped 50 percent from its 2017 peak.

Another concern is the potential of foreign governments to crack down on bitcoin and what that could do to the market. "If a government can come in and shut down an exchange overnight, it puts a tremendous amount of risk front and center for merchants and consumers," says Erick Kobres, chief technology officer of Revel Systems, a POS provider based in San Francisco.

The bitcoin backlash

These inherent risks have led a number of large merchants to shy away from bitcoin, despite initial support. Microsoft, Dell, and the online game distribution platform Steam have stopped accepting bitcoin payments—at least for now.

Revel has also pulled back. A few years ago it partnered with a bitcoin exchange to allow its merchants to accept bitcoin. Few merchants signed on and those that did discovered customers weren't so interested, Kobres says.

Revel isn't in any rush to jump back in. At this point, the company is monitoring developments in the cryptocurrency space, answering questions from merchants as they surface and providing cautionary advice to those who express interest in offering cryptocurrencies. So far, merchants aren't beating down the company's door for cryptocurrencies and Revel isn't pushing them either because cryptocurrencies are still a very risky proposition, Kobres says. **ISO**

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