

DIGITAL TRANSACTIONS

Trends in the Electronic Exchange of Value

12TH ANNUAL

THE **10** MOST PRESSING ISSUES IN E-PAYMENTS

PANIC!

10 CANNABIS

7 DUAL-INTERFACE CARDS

8 NONBANKS AS BANKS

5 INTERCHANGE

4 FASTER PAYMENTS

1 FUEL-PUMP FEARS

9 EMV CONVERSION

NFC

2 ONLINE FRAUD

3 THE BUY BUTTON

ALSO IN THIS ISSUE

- + EMV's Impact on Eateries
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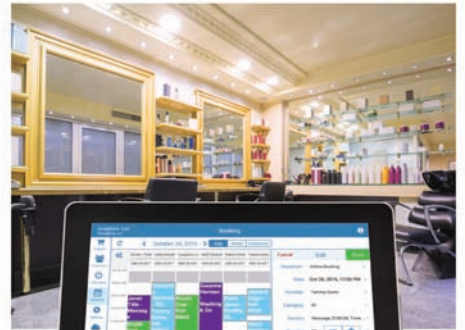
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DIGITAL TRANSACTIONS

Trends in the Electronic Exchange of Value

Our compilation this time ranges from that perennial headache, EMV, to related issues surrounding contactless and near-field communication technology, to online checkouts, with much in between.

PAGE 22



C O N T E N T S

November 2018 ■ Volume 15, Number 11

12TH ANNUAL

22 The 10 Most Pressing Issues in E-Payments

If understanding a problem is the first step toward a remedy, here are 10 first steps for the executives who must grapple with the complexities of payments every day.

4 The Gimlet Eye

More Than a Token Effort

6 Trends & Tactics

Getting Contactless Right Means Just Doing the Work

There's no magic to it—just a lot of blocking and tackling on basics like messaging to consumers and training for cashiers.

Acquirers Can Anticipate a Nice Volume Increase Over the Holidays

U.S. retail sales will be up more than 4% this month and next compared to last year, says eMarketer.

The Fed Mulls Muscling in on Faster Payments ...

All of a sudden, the Federal Reserve says it may want to take a more active role in making real time a reality.

... While TCH Looks to Link Thousands of Banks Soon for Real-Time Payments ...

Based on its current projections, The Clearing House will have more than 3,000 financial institutions using its real-time payments engine by the middle of next year.

... And Real-Time Bill-Payment From Mastercard Could Lure Biller-Direct Fans

Mastercard's early entry in faster payments lets consumers pay bill in real-time, with help from Vocalink and TCH.

Plus, Security Notes discusses the many advantages of digital money with conditions attached.

14 Acquiring

EMV Finds a Seat in Restaurants

Forget an a la carte approach to point-of-sale services. EMV has trained restaurant operators to want inclusive features to help run their businesses.

18 Security

The Scariest Security Nightmares in Payments

Digital Transactions examines the five most worrying cyberthreats facing payments companies and asks experts what can be done to guard against them.

30 E-Commerce

Bypassing Customs

Across the world, governments are cracking down on immigration. Cross-border payments, however, continue to grow with the global economy. Will blockchain be next?

34 Acquiring

The Long And Bumpy Road to Crypto Acceptance

ISOs have been slow to jump on the bandwagon for digital currency because the list of barriers to mainstream use remains too long.

38 Endpoint

Contactless Cards in America—When, Oh When, Will They Appear?

The United States is way behind other markets in adopting tap-and-go cards. That's about to change. Thad Peterson explains why.

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More Than a Token Effort

The nation's two big card networks (maybe we should just start calling them payments networks) come in for a fair bit of criticism, particularly from merchants. Much of it is justified. But the fact remains they are pretty good at doing what networks must do: switching a great bulk of transactions between great swarms of payments parties so that buyers get what they pay for and sellers get paid.

They may be huge, lumbering systems slow on the trigger when it comes to innovation and a tad too keen to reward financial institutions at the expense of merchants, as the aforementioned criticism would have it, but they constitute the backbone of electronic—dare we say digital?—transactions here and much of the world. So they have an interest in safeguarding payments and in making them easier for consumers and merchants to initiate and handle.

All of which is by way of prelude to some interesting developments that emerged last month concerning tokens, those random digital strings that stand in for actual card credentials to thwart criminals bent on accessing other people's money. Netflix and Visa announced a deal that expands the online-entertainment giant's use of tokens, particularly with card-on-file transactions, where out-of-date card numbers can cause broken transactions. Visa also said it added 20 token requestors, bringing its worldwide total to more than 60.

Mastercard said it is working with a collection of gateways and processors, ranging from established players like Worldpay to major upstarts like Square and Stripe, to make all cards bearing its brand eligible for tokens by 2020.

The networks have been talking about tokenization for years. They rolled out the technology on a formal basis in 2014 around the same time Apple Pay emerged with its dependence on totally digital cards. But now the game's afoot, and in all fairness credit is due to these systems for the investments they have made in this technology.

One big question lingers, as we pointed out last month ("Token Economics"). That is, as transaction volume builds, how much longer can the networks refrain from charging for tokenization? Visa, for example, four years ago wiped away the fees it planned to levy and instead declared its tokens would be free to requestors as long as they process with Visa.

Economic theory would predict higher prices from the pressure of greater demand. A recent blog post at PayPal, for example, referred to a coming "tokenization tidal wave" as more digital services emerge.

But don't look for fees any time soon. This is still an unfolding commercial rollout. Plenty of time for the laws of economics to catch up later.

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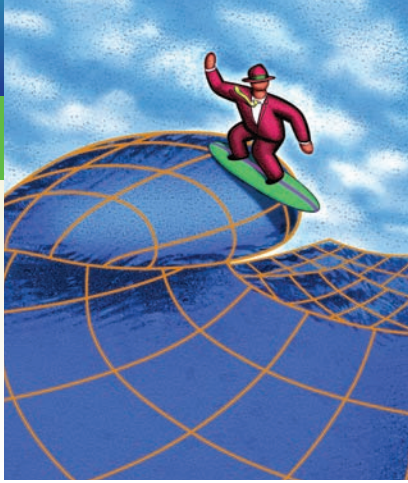


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TRENDS & TACTICS

Getting Contactless Right Means Just Doing the Work

It's no secret contactless payments have struggled in the United States, but less discussed is what needs to be done to boost usage. A paucity of dual-interface cards—EMV plastic that can either be inserted into terminals or tapped on them—is much to blame, but it turns out the answer goes well beyond that gap.

In fact, the solution is far from high-tech. It lies in a lot of basic blocking and tackling at the point of sale, a panel of expert speakers said last month at a payments-industry conference.

Key steps include major investments in both equipment and employee training, according to Kaylie Cohen, director of payments at the Subway sandwich chain, which invested early in the tap-and-pay technology and now has it in all 30,000 of its U.S. stores.

Cohen makes no bones about the cost of replacing dated terminals, a measure Subway took five years ago in anticipation of the U.S. move to EMV chip acceptance. "Hardware is the biggest challenge. It's a huge challenge to ask merchants to reterminalize," she said during the Strategic Leadership Forum sponsored by the Washington, D.C.-based Electronic

Transactions Association and held in Dana Point, Calif.

Contactless payment relies on near-field communication technology to transmit card data to point-of-sale devices via radio waves. It took a big step forward in August when long-time holdout Costco Wholesale Corp. went live with contactless capability in its 519 stores.

But merchants still have much work to do even after installing the right equipment, Cohen said. That work includes employee training and customer education, she said. "All

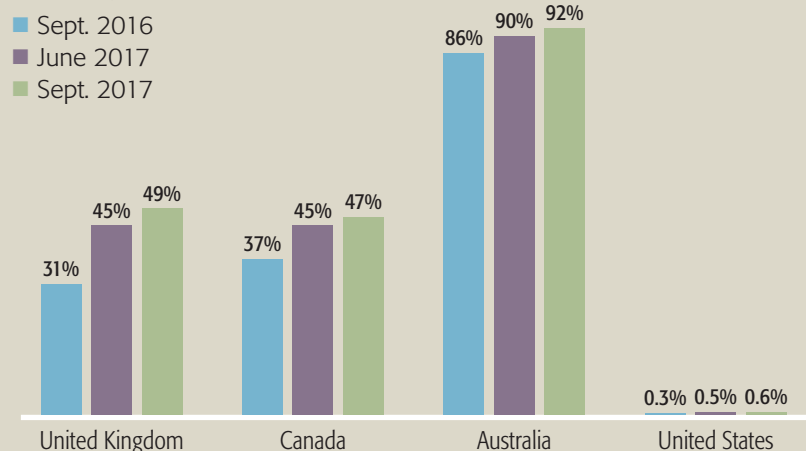
parties have to push the messaging," she added.

Without clerk and consumer education—partly through means as simple as in-store signage—customers who may welcome speedier contactless transactions could default to inserting their cards out of ignorance that the store accepts contactless. "We spent so much on dip, and now it's tap-tap," noted panel moderator Liz Ryan, an executive vice president at Wells Fargo.

Merchants may also have installed POS devices that are capable of NFC transactions while neglecting to turn

Selected Contactless Penetration Rates

(Percentage of all Visa transactions by country)



Source: Visa

on the functionality. But in some cases this problem is compounded by erroneous messaging indicating to customers that NFC will work.

“Even as a payment professional, it’s a moment [for me] of, Is it going to work?” said Melanie Gluck, vice president of solution sales at Mastercard Inc., who recounted an incident in which she and her husband repeatedly tried to use a contactless card with a device that featured messaging indicating it supported contactless payment. “It’s not a good situation,” she said. “We have work to do in terms of signage.”

And even savvy consumers may need to be induced to adopt a contactless frame of mind, said Bjorn Ovick, head of merchant solutions for

Samsung Electronics Co.’s Samsung Pay mobile-wallet unit.

“The biggest challenge is we’re changing a habit,” he said. “Sometimes even I forget [to use a contactless device],” he confessed. This problem should clear up, he added, as more grocery stores and other places where everyday spend occurs adopt contactless payment.

For Subway, planning was crucial, Cohen said. “Start planning now,” she advised other merchants. But planning must be smart, she added. “Some merchants reterminalized for EMV two years ago but left out contactless,” she noted.

For the sandwich chain, the ability to speed up transactions has been a huge benefit, Cohen said. “We’re

increasing the speed but not increasing our cost,” she added. “It’s a huge winner for us.”

While the U.S. market has lagged well behind other countries like the United Kingdom and Canada, that may change soon. Visa projects 50% of face-to-face transactions in the United States will take place at contactless-enabled merchants by the end of the year.

Another measure of progress is contactless penetration. As recently as a year ago, just 0.6% of all U.S. Visa transactions were contactless, according to the network, but that was double the penetration seen in September 2016 (chart, page 6). Visa has not released more recent data.

—John Stewart



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Acquirers Can Anticipate a Nice Volume Increase Over the Holidays

Merchant acquirers, especially those in the e-commerce and mobile-commerce space, can look forward to strong holiday payment card volumes this year, according to online-commerce analytics firm eMarketer Inc.

New York City-based eMarketer’s “Holiday Shopping 2018: A Strong Economy Sets the Stage for a Spending Surge” report released last month predicts total U.S. retail sales will rise 4.1% in the November-December period over the same months in 2017 to \$986.8 billion. Brick-and-mortar sales will continue to dominate, claiming 87.5% of the total pie at \$863.4 billion, but growing only 2.6% year-over-year.

In contrast, retail e-commerce will grow 16.2% to \$123.4 billion, or 12.5% of total holiday spending. In 2017, e-commerce accounted for 11.2%, or \$106.1 billion, of the season’s \$947.6 billion in retail sales.

Mobile will be the star of the 2018 e-commerce show (chart). The firm predicts retail sales on mobile devices will surpass \$50 billion for the first time, hitting \$54.2 billion, a 32.6% increase from \$40.9 billion in 2017.

Mobile commerce will account for 43.9% of total e-commerce retail volume this season and 5.5% of all holiday retail sales, according to eMarketer’s prediction. In 2017’s holidays, mobile claimed a 38.5% share of total retail e-commerce and 4.3% of all retail sales.

Desktop and other forms of non-mobile e-commerce, including voice commerce, will grow only 6% this season to \$69.2 billion, or 7% of retail sales, eMarketer predicts.

“We’re several years into the emergence of mobile shopping, but it’s mobile buying that’s really

A Holiday Retail Sales Forecast

(November-December, in \$ billions)

	2018	2017	Change	% of Total 2018 Spending
In-Store	\$863.38	\$841.41	2.6%	87.5%
Total E-Commerce	\$123.39	\$106.14	16.2%	12.5%
Desktop/Other ¹	\$69.22	\$65.28	6.0%	7.0%
Mobile	\$54.17	\$40.87	32.6%	5.5%
Total	\$986.77	\$947.55	4.1%	

1. Includes voice.

Source: eMarketer

flexing its muscle at the moment,” Andrew Lipsman, principal analyst at eMarketer, said in a statement.

“Retailers that look past mobile because it’s the smallest sales channel will find it much harder to post the sort of profits they’re hoping for—and should be able to expect—given the positive economic backdrop,” Lipsman said.

Mobile’s predicted gains will be the result of higher conversions thanks to retailers’ continued efforts to streamline checkout on the mobile Web and apps, eMarketer says. Plus, “consumers are growing more adept at transacting on mobile devices,” the company said in a news release. Some of that aptitude can be attributed to the bigger screens on many new smart-phone models.

EMarketer’s definition of mobile retail sales includes products or services ordered using the Internet on mobile devices, regardless of the method of payment or fulfillment. The prediction excludes travel and event tickets; payments for bills, taxes, or money transfers; sales in the food-service sector and bars, and gambling “and other vice-good sales,” eMarketer said.

—Jim Daly

The Fed Mulls Muscling in on Faster Payments ...

The Federal Reserve is considering taking a direct role for itself in U.S. faster payments. The central bank has not yet committed to any specific action, but banks and private-sector payment processors are watching for any infringement on their turf.

“Over the past year, we have undertaken an assessment of what the Federal Reserve could do to modernize its infrastructure to support interbank settlement of faster payments,” Lael Brainard, a member of the Federal Reserve’s board of governors, said Oct. 3 in announcing the possible action at the FedPayments Improvement Community Forum conference in Chicago.

“That assessment found that 24-7 payment-by-payment interbank settlement in real time, what we refer to as real-time gross settlement, offers clear benefits in minimizing risk and maximizing efficiency,” Brainard said.

Brainard added that “a 24-7 economy with 24-7 real-time payments needs 24-7 real-time settlement, and RTGS is the way to achieve this. That is where we believe that the

Federal Reserve and the private sector together need to make investments for the future.”

The Fed’s announcement comes in the wake of its Payment System Improvement project that brought banks, payment processors, tech companies, and others together over the past few years to find new ways of making payments faster and more secure.

Other nations have RTGS systems, primarily as wholesale services for banks, but some have been evolving as countries implement faster-payments systems.

A proposal Brainard outlined has two major facets. One is the RTGS plan for settlement of payments every day at all times. The other involves a so-called liquidity tool the Fed says could increase banks’ participation in a real-time system by limiting

exposure that can arise outside of business hours. The general idea behind both is to reduce the risk from providing funds to payment recipients before settlement has actually occurred.

Details of the plan are contained in a 47-page notice published in the Federal Register, the official record of the federal government. The Fed is taking comments until Dec. 14.

The RTGS plan accommodates the non-bank tech companies that have become so important in the Internet age by enabling them to become agents of participant banks and submit payments into the system.

“This common infrastructure would support connections across banks, and faster-payment service providers acting as their agents, with the potential to weave together the current patchwork of systems,”

Brainard said. “As a result, we would also expect the overall safety of faster payments to increase. The capability to finalize interbank settlement before funds are made available to the recipient would avoid an undesirable buildup of risk in the system.”

Steve Ledford, senior vice president of product strategy at The Clearing House, a bank-owned New York City-based service provider and processor, told *Digital Transactions* at the conference that the liquidity proposal “is a fantastic idea.” The plan would help banks cover obligations when unanticipated payments lower their funds availability, he noted.

The RTGS idea, however, would compete with his company’s new Real Time Payments service, Ledford said (“The Sweet 16,” September 2017). But he deferred further comment until

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after reading the detailed proposal. “We need to take a closer look,” he said.

The Fed already offers some services available through the private sector. For example, both the Fed and TCH operate automated clearing house switches.

What the central bank will do after Dec. 14 has not been decided, according to Susan Foley, senior associate director at the board.

“We will come out with a determination, and we will get back to you on that determination,” Foley told the

300-plus conference attendees. “That determination could be everything from we do nothing to we offer two different services, and here’s the service proposals ... it is a wide spectrum of what could happen here.”

—Jim Daly

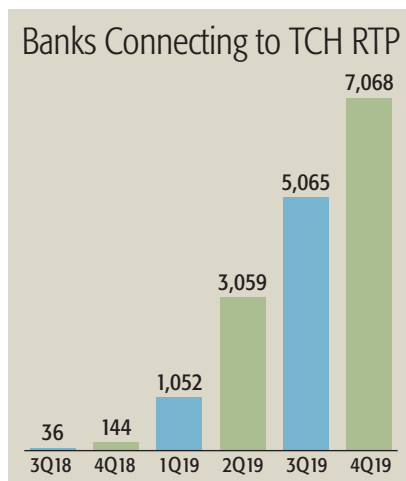
... While TCH Looks to Link Thousands of Banks Soon for Real-Time Payments...

While the Federal Reserve Board mulls an entry into the business of real-time payments, a major competitor is already racking up impressive gains among U.S. financial institutions.

The Clearing House Payments Co. L.L.C., the New York City-based company that, among other services, operates one of only two switches for the nationwide automated clearing house network, finished the third quarter with 36 institutions linked to its Real-Time Payments (RTP) network, which went live a year ago.

That number will grow fast, exceeding 1,000 next quarter and 3,000 by the end of June. A year from now, it is projected on current trends to grow to 5,065, according to Tim Mills, vice president of business development and product management (chart).

By the end of 2019, those projections show some 7,068 institutions



Source: The Clearing House

connecting to the RTP platform either directly or through a third-party servicer, well more than half of the nation’s banks. By the end of this year, a little less than half of the nation’s demand-deposit accounts will be able to receive RTP transactions, and just under 40% will be able to send, Mills says. Within a year, TCH projects

those numbers will grow to a little over 60% and a bit more than 50%, respectively, he adds.

It helps that TCH can count on its 26 owner banks, Mills says, along with participation by four of the country’s largest core processors—Fidelity National Information Services Inc., Fiserv Inc., Jack Henry & Associates Inc., and Finastra. The ultimate goal, he says, is to reach all endpoints. “We’re working really closely with major processors as part of our ubiquity strategy,” he notes. “We feel pretty good about the progress we’re going to make as we move into 2019.”

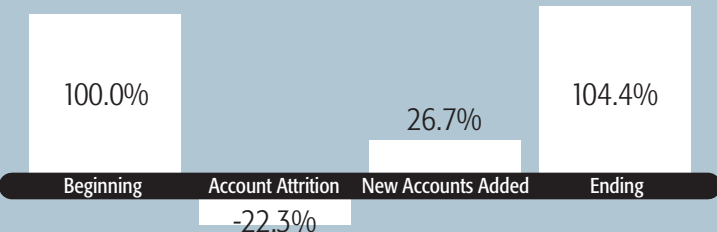
The software underpinnings for RTP comes from Vocalink Holdings Ltd., a United Kingdom-based technology company that had helped develop the faster-payments infrastructure in that country. Mastercard Inc. paid \$920 million in 2017 to acquire Vocalink.

MONTHLY MERCHANT METRIC

Q2 2018 Account Attrition And Growth

Account Attrition—Total attrited accounts in given period divided by total portfolio active accounts from same period of the prior year.

New Accounts Added—Total new accounts in given period divided by total portfolio accounts from same period of the prior year.



Note: This is sourced from The Strawhecker Group’s merchant data warehouse of over three million merchants in the U.S. market. The ability to understand this data is important as SMB merchants and the payments providers that serve them are key drivers of the economy.

All data is for SMB merchants defined as merchants with less than \$5 million in annual card volume.

Source: The Strawhecker Group © Copyright 2018. The Strawhecker Group. All Rights Reserved. All information as available.



TCH's roots in payments are deep. The 165-year-old company began as a check-clearing center, a business it extended in recent years to help turn image exchange into an ubiquitous operation. For ACH transactions, the Federal Reserve operates

the system's only other switch.

But for all the progress RTP expects to make, Mills says the service will likely work best for cases like direct deposit of payroll. Point-of-sale applications, he says, are likely to be edge cases. "Could RTP replace debit

card transactions or checks or cash? That's not the intent," he says. "Maybe in low-volume [point-of-sale] environments RTP could play. It's about where do we have use cases where the efficiency of RTP is a good fit?"

—John Stewart

... And Real-Time Bill-Payment From Mastercard Could Lure Biller-Direct Fans

After years of planning and deliberation, payments providers are starting to announce applications based on real-time processing. One of the first is Mastercard Inc., which last month unveiled a system that will allow consumers to view bills and then transfer funds to the billers within seconds.

Experts see an opportunity for banks to use the new platform to win back customers who have strayed away to direct online payments to cable-TV companies, mobile carriers, and other billers.

While the service, called Bill Pay Exchange, embraces potentially 135,000 billers, it's not set to launch until the middle of next year, following product integration and testing. "This is the next step in the evolution of faster payments in the [United States]," says Sarah Grotta, director of the debit-advisory service at Mercator Advisory Group, Maynard, Mass., in an email message.

The platform relies on processing by New York City-based The Clearing House and technology from London-based Vocalink, which Mastercard acquired in 2016. Vocalink built the real-time payments infrastructure TCH is in the process of rolling out to banks.

The new service, indeed, is seen as just the start of a range of faster-payments services Mastercard feels it can rely on Vocalink to build. "With Vocalink, we are in a unique position as the only network that has

the technology capabilities and know-how to build faster payments applications at the pace the market requires," said Colleen Taylor, executive vice president for new payment flows at Mastercard, in a statement.

For now, Mastercard's work is centered on getting billers and banks ready for faster bill payments. The card network will not say how many billers it projects will be linked to the new platform when it launches next year. "We are working to upgrade these billers, who are currently on our current bill-payment platform called RPPs, to the exchange," Taylor says in an email message.

Both banks and billers can connect to the exchange via third-party service providers, which so far include Fidelity National Information Services Inc., ACI Worldwide, Aliaswire Inc., Inlet LLC, and Transactis Inc.

Mastercard has not made any volume projections for the exchange, according to Taylor, but she cites statistics indicating an overall U.S. market of \$4 trillion on 15 billion payments. The automated clearing house accounts for 46% of these payments, followed by credit and debit cards at 30%, checks at 17%, and cash, money orders, and prepaid debit cards at a combined 7%, according to

Mastercard data. The company will not discuss fees or other commercial arrangements for the exchange.

Observers see potential for the new platform to help banks win back customers from biller-direct systems, which allow consumers to pay billers at their Web sites or via mobile apps.

"Financial institutions have lost bill-pay customers to the biller-direct model. This may be a way for banks and credit unions to introduce a convenient real-time bill-pay solution that will bring back some of those transactions," says Grotta.

The service may be especially valuable if it can attract Millennials, says independent payments analyst Patti Hewitt. "The potential importance of this feature would be to lure younger consumers back to their bank to pay bills," she notes in an email message.

Consumers who habitually time their payments so they hit billers' accounts just before the deadline may also like the real-time availability, she adds, as it may allow them more leeway to avoid late fees.

But "speed to market" will be crucial, Grotta notes. "Being first-to-market is important. There could be a biller version of this capability waiting in the wings," she says. **DT**

—John Stewart

135,000 Billers in MasterCard's Bill Pay Exchange

The Real Key to Frictionless Payments



Gideon Samid • Gideon@BitMint.com

A payor either owns the money he pays or is commissioned to pay on someone's behalf. There is no other honest option, right?

Well, Alice could hand money over to an escrow agent and instruct her to make the money available to her grandson, Bob, to buy a nice jacket of his choice. The spending right is valid for the next 48 hours, but only if Bob shaves his facial hair. If, when the 48 hours tick away, Bob is still walking around with his scraggly long beard, the money reverts to his grandma. In this scenario, Bob assumes conditional spending privileges for Alice's money, but no "ownership" thereof.

This situation may appear very marginal. Not so, as we shall see in a moment. First, let's assert that this arrangement of granting temporary spending privileges to someone for money not theirs is a frictionless, easy capability for money in digital form. Digital money may be tethered to any logical term, so Alice can pass digital money to Bob, earmark the money for a designated purpose, and further specify a time limit for this privilege.

The terms are cryptographically sealed to the money. If Bob does not shave, for example, the tethered money becomes worthless and his grandmother does not need to wait for the money to return to her wallet. It is there instantly when the time lapses (and the money was not spent).

Have you ever paid extra for a rush delivery of merchandise, only to have it arrive two days late and hear from the merchant every excuse in the book not to return your money? Well with temporary spending privileges (TSP) money, there is no argument. The money cannot be spent before the shipper certifies delivery, and it evaporates after 24 hours. In the business-to-business world, this case is even more pronounced.

But let me dedicate the rest of this column to a prospective revolution in the retail business. Let's say a bold entrepreneur posts an online price for a given commodity, say, a 48-inch flat-screen TV, and propose to his readers to sell

them the item for 15% less than the lowest posted price. To take advantage of the offer, the buyer must send the 15% discounted price as tethered digital money in favor of the entrepreneur, who has no more than, say, 12 hours to spend the money. If the money is not timely spent, the digital money bits evaporate.

Popular consumer articles have a volume of demand on a national basis (which is how sales happen today), such that quite a large number of people interested in this flat-screen TV will find it to their advantage to prepay 15% less than the lowest online price. The entrepreneur then will simultaneously approach Amazon, Walmart, Target, and so on, saying: "I have a large sum of money payable instantly to the lowest bidder." If enough takers sign up, the per-item lowest bid price is likely to be at a 20% discount or more, leaving a nice margin for the entrepreneur.

Together with the payment, the winning vendor receives the addresses of the buyers to ship the TVs to. If for any reason the lowest bid is higher than a 15% discount, the deal is off, and the digital money in the form of TSP evaporates from the coffers of the entrepreneur.

The only way this could work smoothly is if the entrepreneur can lure the vendors with cash-in-hand, not "will collect later." On the other end, if the bid fails there is no need for a tedious payback.

Applications for this concept are numerous, including with loyalty money and advertising implementations. Today, security needs induce protocol overhead for any movement of money (legacy or crypto), so that paying and then reversing a payment generates too much friction. Tethered money avoids this overhead and moves without friction.

In machinery, lubricants make a world of difference between grinding moving parts, and a smooth apparatus. It is very much the same when it comes to payment.

The greatest impact of TSP is expected in the Internet of Things and micropayments, which choke with friction. Same for payments controlled by artificial intelligence. These can be carried out with speeds much greater than humans pulling a wallet out of their back pockets, but friction is the limiting factor. Read more in my book, *Tethered Money*. ■



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Trends in the Electronic Exchange of Value



EMV Finds a Seat in Restaurants

Kevin Woodward

Forget an a la carte approach to point-of-sale services. EMV has trained restaurant operators to want inclusive features to help run their businesses.

Ask point-of-sale system experts to describe the state of EMV acceptance among restaurants, and their choice of words may not be what many expect, or would hope, to hear.

Hastily. Poorly. Still haven't done it. These are just a sample of the descriptions of how well EMV acceptance has been adopted and implemented among restaurant operators. Now entering its fourth year of use in the United States, EMV chip card acceptance is meant to help squelch counterfeit card fraud and improve the overall security of point-of-sale payments.

When the card networks began introducing EMV in earnest in the United States in 2015, restaurant operators were less than thrilled about the change in payment technology. In addition to concerns about cost, training, and potential disruption to routine transaction volume that they shared with many other merchants, restaurant operators, especially those whose servers rely on tips, had questions about tips and how they would be handled by EMV systems.

Initial concerns, however, about not being able to adjust a ticket to accommodate a tip once the payment

card was inserted were alleviated with education and software updates to POS terminals.

Still, three years later, restaurant operators continue to have a mixed reaction to the payment technology.

"I can't tell you how many restaurants have come to us in a panic because their current provider gives them an unreasonable deadline, with even more unreasonable costs and conditions, to support EMV," says Kevin Yien, product manager for Square for Restaurants at Square Inc. "It puts restaurants in a truly unfair position." Hastily is the label he assigns to how well restaurants have handled EMV adoption.

'Clunky' Systems

Yien's perspective is not unique.

"In general, EMV has been very poorly implemented at most restaurants, but that's not the fault of restaurant owners," says Jared Isaacman, chief executive of Shift4 Payments, an Allentown, Pa.-based payments provider. "EMV is a dated technology that is not particularly well suited to the hospitality market." First developed in the 1990s, EMV had long been used outside of the United States prior to 2015.

While EMV is suited for retail transactions, where consumers just pay and go, Isaacman says, "There are numerous complexities present in restaurant operations."

A couple of examples are incremental authorizations for open-bar tabs and tip adjustment. "These processes are much more complicated with an EMV card than they were with a swiped transaction," he says. "Due to these operational hurdles, restaurant owners have been rather slow to implement EMV acceptance."

That helps explain why Dax Dasilva, founder and chief executive of Lightspeed, a Montreal-based POS system developer, says that while there is a shift to cloud-based POS systems, "some restaurants still have clunky, legacy POS systems."

"For those who have embraced the cloud, their expectations tend to be higher as they are looking for the systems to be more than just a POS," Dasilva says.

Cloud-based POS systems are one tool restaurant operators use to navigate their way through EMV. These systems can make EMV acceptance easier, while adding other payment methods and providing better operational tools for the restaurant operator.

"The systems installed years ago are just as capable of inputting a cheeseburger and managing employees as a brand-new POS system, but what sets many new POS systems

apart is the ecosystem of supporting applications that deliver additional value for restaurants,” Isaacman says. Some examples are systems with remote access enabled or that support third-party food-delivery services like Grubhub and UberEats.

“So while I believe that the POS systems in most restaurants are capable of performing basic operational tasks, the majority lack the functionality and ecosystem support necessary to deliver meaningful value to restaurant owners,” he says.

A Bit of a Myth

Tips are unique to the restaurant industry, and tip adjustment is an example of the complexity of EMV in restaurants, Isaacman says. Initially, adapting the POS-system code to address the matter slowed EMV adoption, but that is changing, so it is not the perceived deterrent it once might have been.

Indeed, at CardFlight, a New York City-based point-of-sale specialist, the notion of tip adjustment being a problem for restaurants is seen as a bit of a myth, says Derek Webster, founder and chief executive.

“The card brands have been clear that the U.S. is a ‘chip-and-choice’ market and that post-authorization tip adjustments can still work in an EMV environment,” Webster says. “There is no reason that the standard restaurant payment flow [card placed in a check presenter and run through a POS system by the waiter] doesn’t work with EMV.”



‘We offer the same security technology to protect our smallest SMB customers that we use to protect half of the hotels and restaurants in Las Vegas.’

—Jared Isaacman, chief executive of Shift4 Payments

Yien, at San Francisco-based Square, says there aren’t any particular complications around tip handling, but “Square absorbs a lot of the pain around chargebacks for restaurants.”

More telling is that many restaurant operators continue to use older POS systems, which, with advancements in technology and cloud connectivity, may hinder some elements of their businesses.

Yien says many POS systems for restaurants are “stuck.” The restaurant market has long been dominated by legacy POS system makers that, as Yien says, had high upfront costs, long-term contracts, and difficult maintenance requirements.

Cloud-based systems ushered in greater mobility and lower costs, Yien says, but may fall short in other areas. For example, first-generation cloud-based POS systems operated a certain way, leading the merchant to think all subsequent versions should follow suit.

“This leads restaurants to believe they need certain features from their point of sale, when in reality they could simplify their operations and workflows,” he says. “As with any technological shift, the transitional period is uncomfortable and can leave restaurants feeling stuck between the evil they know and the alternatives they are [reluctant] to test.”

‘Supremely Savvy’

Though the EMV transition for consumers and issuers may have been mostly completed, it’s still a topic for merchants, especially restaurant operators.

Yien says EMV comes up in sales pitches quite a bit. “There’s usually an immense sense of relief when they hear that Square offers EMV and PCI compliance as a part of our basic payments processing, with no hidden fees, after being told they’ll have to pay ridiculous extra fees with other providers simply to meet compliance standards.”

‘The card brands have been clear that the U.S. is a ‘chip-and-choice’ market and that post-authorization tip adjustments can still work in an EMV environment.’



At Shift4 Payments, which sells POS systems under the POSitouch and Harbortouch brands, among others, basic EMV acceptance is assumed, Isaacman says. “We are seeing growing demand for more advanced EMV solutions, such as pay-at-the-table and order-at-the-table devices,” he says.

The awareness of EMV, and payments security and fraud in general, tends to vary among restaurant operators. At Square, Yien says some restaurant operators remember past experiences.

“Some are industry vets that have been burned and have a deep understanding,” he says. “In general, though, restaurant operators are supremely savvy. They have a deep understanding of everything that could impact their business, especially in a negative way, and take the time to ensure they are protected.”

In Isaacman’s experience, a restaurant operator’s knowledge may be affected by the size of the restaurant. “Single-location SMB restaurants care much more about the affordability, features, and functionality of the POS and the extended POS ecosystem,” he says (SMB refers to small-and-medium-size businesses). “For larger merchants, security features like PCI-validated [point-to-point encryption] and tokenization are a bigger part of the conversation.”

Must-Haves

EMV, at least, elevated the discussion about security and fraud for many. Restaurant operators, especially those



Adjustable floor plans, customizable menus, easy access to reservations, mobility for tableside ordering, and sales reporting are just a few of the must-haves.

—Dax Dasilva, founder and chief executive, Lightspeed

using cloud-based POS systems that maintain compliance with PCI Security Standards Council mandates and related standards, benefit from offloading that.

Shift4, for example, long has offered tokenization services, which scramble the actual card data into a string of random digits that are useless in a hacker’s hands.

“Historically, those capabilities were limited to only the largest enterprise merchants that could afford the functionality,” Isaacman says, “but at Shift4 we offer the same security technology to protect our smallest SMB customers that we use to protect half of the hotels and restaurants in Las Vegas.”

Other features, once relegated to larger users, are also migrating to smaller merchants. At Lightspeed, Dasilva says adjustable floor plans, customizable menus, easy access to reservations, mobility for tableside ordering, and sales reporting are a few of the must-haves they want now.

The must-have list is long, too, for CardFlight’s Webster. “What aren’t they requesting?” he says. “Offering a true restaurant POS requires a lot of features and flexibility to allow the restaurant to customize to their needs,” he says.

Besides having the ability to modify menu selections, provide kitchen systems, and meet order-management needs, “integrated online ordering is probably one of the newest and fastest-growing parts of the market,” Webster says.

‘Directional Hints’

Indeed, the future of the restaurant POS system will be more hub-like and better able to manage services like online ordering.

“The more interesting question is what happens to restaurants in the next two years,” Yien says. “While no one can predict the future, these are some patterns we are all seeing and experiencing that give directional hints.”

Restaurants are seeing labor costs increase, Yien says, directly impacting margins. “This will put pressure on restaurants to find ways to either grow their sales through alternative revenue streams or reduce costs through operational efficiencies,” Yien says.

“Online ordering is the most prevalent thing that will become more and more integrated with the point of sale,” he continues. “In essence, we’ll see the point of sale move closer to the customer.” **DT**

Rising labor costs ‘will put pressure on restaurants to find ways to either grow their sales through alternative revenue streams or reduce costs through operational efficiencies.’



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The Scariest Security Nightmares in Payments

By Peter Lucas

Digital Transactions examines the five most worrying cyberthreats facing payments companies and asks experts what can be done to guard against them.

Hackers are more sophisticated, better funded, better equipped, and more skilled at finding cracks in cybersecurity systems than ever. By adopting advanced technologies such as artificial intelligence, encryption, and botnets to spearhead massive attacks, cybercriminals have leveled the playing field against many of their targets, and tipped it against those that lag behind in the cybersecurity race.

The cost of not being prepared to defend against a cyberattack can be staggering. In 2017, reported cybercrime totaled about \$600 billion globally, up from \$445 billion in 2014, according to a study by the Washington, D.C.-based Center for Strategic and International Studies and sponsored by Santa Clara, Calif.-based security software provider McAfee Inc.

Even more costly is the loss of public trust in a company's brand after it has been hacked, which can diminish a company's earnings for years afterward.

"People may forget the details of a cyberattack over time, but not the affected brand," says Rich Bolstridge, chief strategist for financial services at Akamai Technologies Inc., a Cambridge, Mass.-based content-delivery

network and cloud-service provider. "Security is a trust issue with consumers and how good your cybersecurity is affects consumers' brand perception."

To help payments companies get their arms around the threats emanating from cyberspace, *Digital Transactions* asked several cybersecurity experts to rank their five most dire threats and what payment companies can do to strengthen their defenses against them. Based on their comments, here are the five scariest threats facing payment companies today.

1. Data Breaches

2017 was a banner year for data breaches, with more than 2.5 billion records stolen or compromised, up 88% from 2016, according to Amsterdam-based Gemalto, a provider of digital security. Among the largest and highest-profile intrusions was the Equifax breach, which the credit-reporting agency said exposed the personal information—including Social Security numbers and driver's licenses—of more than 146 million consumers.

With so many payments companies handling sensitive consumer and transaction data, a data breach is not a matter of if, but when, says Julie

Conroy, research director for Boston-based Aite Group.

Part of what makes breaches so scary is that stolen data remains in the hands of criminals forever, which creates an omnipresent threat that it can be used any time, anywhere years after a breach, security experts say.

In addition, data can be used to create synthetic, or false, identities by piecing together information from multiple consumers. Unlike the theft of someone's identity, which consumers can usually spot by monitoring their credit reports, the creation of synthetic identities makes it harder to detect fraud because the files are crafted from multiple sources.

For example, a criminal may match the Social Security number of one consumer with the name of another and the address of another and so on until they create an entirely new "person" using legitimate pieces of information. Criminals will then use the identity to request a credit line, often from a subprime lender willing to extend credit to someone with no credit history.

"Once a synthetic identify is validated by a third-party such as a lender, it can be tough to detect the identity as false until it's too late," says David Britton, global vice president, industry solutions for fraud and identity, at credit-reporting agency Experian.

Unfortunately, there's no easy answer when it comes to preventing

a data breach. The best course of action, cybersecurity experts say, is to take a layered security approach that includes firewalls, intrusion detection, and prevention systems. Other measures include systems that protect against malware in email links and attachments, secure connections to third-party vendors, and audit vendors to ensure their security systems are up-to-date.

Security experts also recommend encrypting or tokenizing stored data so that if hackers do break in, sensitive data is rendered useless.

Encryption transforms data into a cipher using an algorithm and key. The cipher cannot be unlocked without the key. Tokenization randomly generates an alphanumeric code that replaces a credit card or account number, which can only be read by the party with the key to reverse-engineer the code.



Source: Center for Strategic and International Studies/McAfee Inc.

“There needs to be a layered approach to cybersecurity, not just within the network, but for all connections in and out of the network to keep criminals at bay,” says Experian’s Britton. “The aim is to make criminals have to jump through so many layers

of security, they move on to a target that is not as well defended.”

2. Application Updates

Arguably one of the biggest blind spots in cybersecurity is the failure to promptly update applications and test

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for the unforeseen holes an update can create, security experts say.

When it comes to patching and updating, some companies don't always take prompt action, preferring instead to implement the fix when there is a drop-off in performance or reliability or a new security threat requires them to do so.

Reasons for putting off patches or updates stem from concerns over the cost, time, and the complexity of implementation and that they are seemingly never-ending.

Payments companies, however, need to remember that an outdated application, middleware, or operating system immediately becomes weakened from a security standpoint, making it a target for hackers.

"It can be tough to identify every application or piece of middleware that needs updating because there can be so many," says Joe Nocera, principal, financial-services industry practices for London-based PricewaterhouseCoopers. "Updates, patching, and security go hand-in-hand."

Recommended tips for staying on top of patches and updates include inventorying all applications and middleware and tracking when they were last modified. Reducing the number of the number of platforms can also streamline maintenance by reducing the number of different applications used, Nocera says.

While patching and updating is primarily the responsibility of the

end user, some vendors will implement upgrades for their customers. But this practice has opened a door for criminals to pose as technicians from a vendor sent to install a patch, says Robert Siciliano, a Boston-based data-security expert. Merchants are a frequent target of this scam, which includes installing software in a point-of-sale device that is programmed to capture transaction data.

"The criminals know the vendors, who their customers are, and go to great lengths to impersonate the vendor," says Siciliano. "The way to combat this is to make managers and staff aware of the threat and stay on top of maintenance schedules."

Finally, when making a patch or upgrade, security experts recommend that systemwide security testing be performed to identify any vulnerabilities that may have inadvertently occurred throughout the platform as a result.

"Patches can cause unexpected breaks in the defenses, so security testing post installation is necessary," says Akamai's Bolstridge.

3. Distributed Denial of Service Attacks (DDoS)

DDoS attacks, which attempt to overwhelm a Web site with traffic from multiple sources, are nothing new, but they remain scary nonetheless. What keeps DDoS attacks near the top of the list of threats is that the size of the attacks, i.e. the amount of data being pushed by criminals to a target

site, is increasing, making them much harder to fend off. Volume pushed in an attack can be as much as one terabyte per second, security experts say.

Even scarier is that attacks can be initiated through a growing array of Internet-enabled devices.

The culprit enabling higher rates of attack and more types of devices to launch an attack is botnets, networks of private devices controlled by criminals without the owners' knowledge. Criminals have remotely commandeered such Internet-enabled devices as cameras and video recorders to launch DDoS attacks, security experts say.

Key to withstanding a DDoS attack is having the scale to handle huge spikes in traffic and applications in place that deflect junk traffic away from the network.

"A layered security approach with a cloud-based server that can quickly scale are the keys to avoid being overwhelmed by a DDoS attack," says Bolstridge. "The size of attacks will only continue to increase, which is why payment companies always need to be ready to fend them off."

4. Phishing Attacks

Consumers aren't the only targets of phishing attacks. Criminals will use them to infiltrate companies by sending employees emails containing malware that, when opened, launches sniffer programs that track employee user names and passwords. Armed with those credentials, criminals can then begin snooping for back doors into areas containing sensitive data.

What makes phishing attacks a deep cause for concern is that they have often been the first step to data breaches in recent years (a phishing attack spearheaded the 2013 Target data breach, for example), and how easily they can dupe employees and consumers, security experts say.

Phishing emails look like correspondence from a trusted source, such as the human-resources department or even a consumer's bank. The message

is crafted to encourage the recipient to click on a malicious link embedded in the body of the email or to launch malware once the message is opened.

While companies can implement such tools as spam filters and device-authentication applications to spot phishing emails pushed by botnets, the most effective protection against phishing boils down to ongoing employee education about how to tell legitimate emails from suspect ones, and to report questionable emails to the appropriate manager, security experts say.

5. Insider Threats

Disgruntled employees remain a serious threat to any company's cybersecurity because they may either launch an attack on their own accord or be vulnerable to the lure of financial gain dangled by criminals looking for an insider accomplice.

"This is a tough threat for IT managers to get their arms around because it is not easy to spot a rogue employee when it comes to the handling of data," says Aite's Conroy.

Analytics that track employee behavior are an effective solution that can tip IT managers off to employees attempting to access data not pertinent to their job, but can cost hundreds of thousands of dollars or more to implement. "That's not always an easy expense to justify until the problem can be quantified," Conroy says.

Less costly safeguards include: limiting employee access to sensitive data; prohibiting access to sensitive data by devices not issued at work; and charting employee behavioral changes at work, such as whether an employee starts regularly working late into the night or is the first to enter the building.

"The feeling of being alone creates a psychological comfort for

inside attackers because they think no one else is around to observe their devious behavior," says Nocera of PriceWaterhouseCoopers.

With so many security threats lurking, it's no wonder that many IT managers have trouble sleeping at night. The best antidote, regardless of the threat, is constant due diligence. By staying current with the best practices to thwart an attack, payment companies can narrow the gap between protection and vulnerability.

"The more unpredictability in changing and adding deterrents, the stronger your defenses," says Gideon Samid, the "Security Notes" columnist for *Digital Transactions* and chief technology officer for Bitmint, a Washington D.C.-based cryptocurrency provider. "Hackers base their attacks on the size of the security-predictability gap." **DT**

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THE 10 MOST PRESSING ISSUES IN E-PAYMENTS

Well, here we are with our annual list of the 10 issues causing the most sleepless nights for payments executives these days. Our compilation this time ranges from that perennial headache, EMV, to related issues surrounding contactless and near-field communication technology, to online checkouts, with much in between.

We're not really trying to keep you up at night, but we do feel it's important to catalog, periodically, the top-of-mind issues in this dynamic business. This isn't because we need to prove that all isn't sweetness and light—nobody who works in payments needs that reminder—but because this catalog serves as a sort of checklist, a handy reference, for busy managers who must

If understanding a problem is the first step toward a remedy, here are 10 first steps for the executives who must grapple with the complexities of payments every day.

By John Stewart, Jim Daly and Kevin Woodward

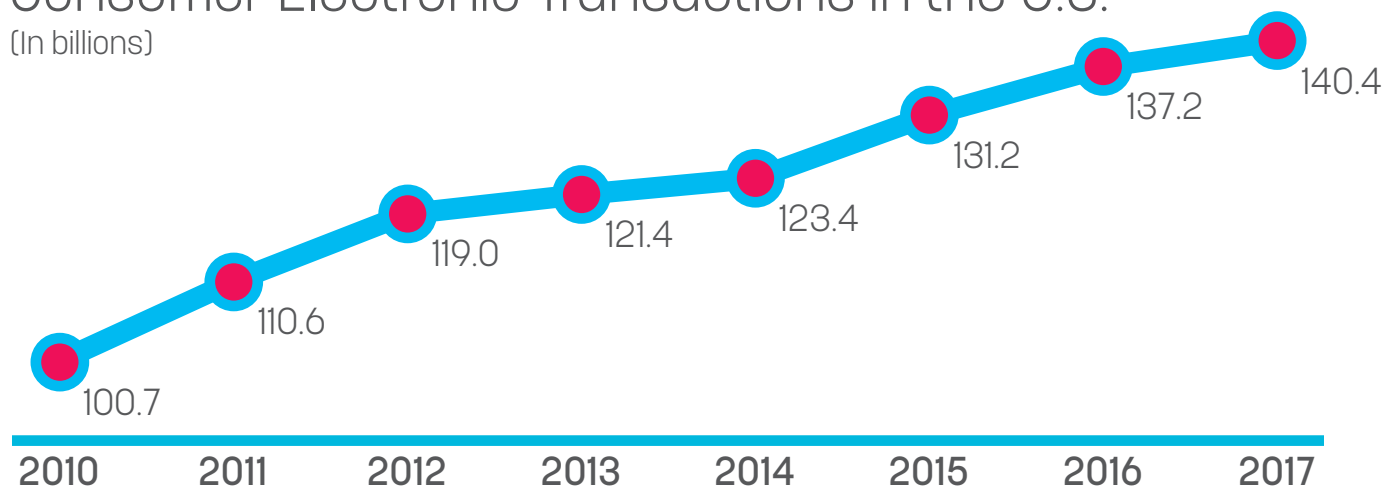
constantly sort the overriding problems from the everyday nuisances.

So here are the super-nuisances, ranked and described. Perhaps we've missed a few that you think ought to be on this list, or included some that you feel

we should have omitted. If that's the case, drop me an email at john@digitaltransactions.net. Who knows, your suggestion might make next year's list. If it's really that big a deal, chances are it will still be a pressing issue by then.

Consumer Electronic Transactions in the U.S.

(In billions)



Note: Figures include all consumer-based card and ACH volume. Source: Digital Transactions estimates



1

The Expensive Fuel-Pump EMV Retrofit

Convenience-store operators and other retailers selling fuel have two years left on a deadline extension to install EMV at the pump and avoid liability for fraud if they can't process EMV chip card transactions.

The prognosis, however, even with 24 months remaining, isn't completely optimistic. A big sticking point is the cost. At an estimated \$4 billion to \$6 billion industrywide, the conversion not only requires new point-of-sale systems and new card readers at the pump, but also installation scheduling and staff training.

The odds of the industry making the deadline? Not good, said Terry

Mahoney, a partner at W. Capra Consulting Group, earlier this year. According to estimates he presented at a payments conference, anywhere from 30% to 50% of locations had already converted their in-store systems to EMV acceptance. He figures that will reach 90% by the end of the year. All told, there are about 150,000 fueling sites in the United States, he said.

Still, strides are being made. A company called Gas Pos launched a service that puts EMV-compliant card readers in fuel dispensers and in stores with no hardware costs for the merchants. Instead, they pay for

processing and a monthly fee for each pump card reader.

Fuel-pump maker Gilbarco Veeder-Root launched an EMV-dispenser program for Chevron and Texaco retailers earlier this year. Dispenser maker Dover Fueling Solutions exhibited its EMV product in October at a c-store operators' conference.

And, late last year, NCR Corp. said a fuel retailer completed its first outdoor EMV transaction using its Optic upgrade kit, which offers retailers a choice of two screen sizes for their dispensers. Multiple payment types, including EMV and contactless, are included with the devices.

2

Will 3-D Secure 2.0 Solve Online Fraud?

Fraud is the scourge of online retailers.

One report said e-commerce fraud increased 7% from 2015 to 2017. Merchants have to contend, too, with account takeovers, when a criminal attempts to pose as a legitimate customer. The card brands, having learned that their first incarnation of 3-D Secure interfered too much with the checkout experience, are poised to offer a new 3-D Secure product, one they promise will be less intrusive, yet aid retailers and issuers alike in fighting fraud.

Payments provider Adyen already is offering a 3-D Secure 2.0 service. Adyen said its 3DS 2.0 is capable of authenticating a transaction in the

background without customer intervention, “creating a seamless payments experience and helping merchants increase conversion rates.”

3-D Secure 2.0 also incorporates stronger authentication methods, enabling consumers to use biometrics like fingerprints, voice recognition, or facial scans, and text-based two-factor authentication, in a transaction.

3-D Secure 2.0 may even help root out account-takeover attempts if the criminal’s device doesn’t match that previously associated with a legitimate customer.

For example, on mobile devices, 3-D Secure 2.0 collects 12 bits of

data, regardless of if a smart phone is an Android, iOS, or Windows 10 Mobile device, plus more than 130 other parameters for Android, 14 for iOS, and more than 25 for Windows Mobile 10. This can include time zone, system font, whether the device is roaming on a cellular network, and language preferences.

But time is of the essence. Visa, which says 3-D Secure 2.0 could reduce transaction times from the earlier version by 85% and reduce cart-abandonment rates by as much as 70%, announced the new protocol is set to be enforced beginning in April.

3

The Common Buy Button

When consumers walk into a store, they may use any of a number of payment cards at the cashier stand, but they deal with just one terminal. This spring, the major card networks began talking publicly about plans for a similar experience online—multiple card brands, but one checkout “button.”

Sounds logical. It also promises, the brands say, to sweep away all the confusion surrounding the typical experience on a checkout page, making for easier, faster checkouts. Just one catch: merchants aren’t necessarily onboard with this new idea.

The so-called common buy button idea stems from a set of technical specifications that are part of the Secure Remote Commerce rules recently drawn up by EMVCo, a standards body controlled by six global card networks, including Visa Inc.,

Mastercard Inc., American Express Co., Discover Financial Services, Japan’s JCB, and China UnionPay. A technical framework for the spec was released a year ago, but the spec itself so far has been restricted to subscribers, a move that stokes suspicions among some merchants who are already disposed to distrust the card networks.

These merchants fear the big networks may shut them out of the development work and possibly disregard their routing rights when it comes to debit checkouts. The problem is compounded by the fact that at the time Visa indicated it might be ready to move its digital wallet, Visa Checkout, to the SRC spec by year’s end.

“It’s a speed-to-market challenge for merchants that have their

own pay buttons,” Laura Townsend, senior vice president of operations for the Merchant Advisory Group, a Minneapolis-based trade group for major retail chains and airlines, told *Digital Transactions* in May. And yet, she said, “We don’t have access to the spec.” Still, some observers estimate full implementation of a common checkout will take much longer.

To be sure, the networks are under pressure to act soon. Cart-abandonment rates are dismal, and checkouts like PayPal and Stripe have long since stolen a march on the likes of Visa Checkout and Mastercard’s Masterpass wallet. PayPal and Stripe are available at 4.36% and 3.62% of the top 10,000 Web sites, respectively, compared to 0.18% for Visa Checkout and 0.30% for Masterpass, according to SimilarTech.com.



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4

Faster Payments And the Fed's 2020 Deadline

In the summer of 2017, the Federal Reserve set an ambitious deadline for real-time payments in the United States: It wanted a national system operating by 2020. Is that going to happen?

To be sure, for a nation that lags badly behind much of the developed world in faster payments, getting to real time within just three years requires some heavy lifting. Efforts are under way. The Clearing House, for example, is signing banks directly—and many small and mid-size institutions through their core processors—for a real-time payments system it built with help from Vocalink Holdings Ltd., the technology company that developed real-time payments in the United Kingdom 10

In the headlong rush to build real-time systems, the country might be courting a surge in fraud.

years ago (see the Trends & Tactics section in this issue for more).

Mastercard Inc. saw enough value in Vocalink's capabilities—and enough potential business in moving to real-time applications—that it shelled out \$920 million for Vocalink in 2016. Now, it's starting to roll out those applications, starting with real-time bill payments. And just last month the Fed indicated it might itself jump into the game with a real-time settlement system, an announcement that came as a somewhat unsettling development for The Clearing House.

But some observers worry that, in the headlong rush to build real-time systems, the country might be courting a surge in fraud, particularly if new safeguards aren't introduced. With transactions clearing and settling in seconds, banks have to make fraud decision in the blink of an eye compared to the time they have even with same-day automated clearing house transactions.

For the nation's banking system, will it come down to meeting that 2020 deadline at the expense of more fraud losses?

5

Overdue Changes in Card-Not-Present Payments

Back in October of 2012, the headline for an e-commerce story in this magazine asked, "Just What Does Card-Not-Present Mean These Days?" Six years later, we still don't have an answer.

Even earlier, online merchants and their payment processors had begun to question the hard-and-fast pricing distinctions in bank card interchange rates for card-present and card-not-present transactions.

When e-commerce began gaining momentum in the mid-1990s, the logic was clear: a face-to-face transaction was much less risky than one in the new online channel, so a pricing premium of about 50 basis points or more for card-not-present purchases was justified.

Since then, however, e-commerce risk control has vastly improved thanks to new technology that authenticates cards, computers, and mobile devices, as well as tokenization that hides cardholder data from cyberthieves.

But merchants' card-acceptance costs for online transactions still don't fully reflect today's better fraud-control techniques. Nor do costs and transaction procedures reflect the blurring of the card-present and card-not-present payment environments created by the new gig economy.

At a recent payments conference, Ashwin Raj, the vice president responsible for payments at Lyft, said legacy payment systems for

authorizations, funds movement, and chargebacks all create inefficiencies for the ride-share service.

For example, even though the passenger who orders a ride is in the same vehicle as the driver, Lyft is assessed card-not-present interchange rates. "That creates a fundamental disconnect in the process," Raj said, adding that processing tips and handling chargebacks involve other inefficiencies.

Lyft is far from the only gig-economy or e-commerce merchant to question current card pricing and procedures, but it remains unclear if or when banks and payment networks will respond with something the merchants deem satisfactory.

6

Merchant Suspicions About NFC

Many payments executives have high hopes that near-field communication will transform clunky U.S. payment card transactions into smooth, speedy contactless ones. But controversy never strays far from NFC, a subset of radio-frequency identification technology that now comes installed in many smart phones and powers the Apple Pay, Google Pay, and Samsung Pay mobile wallets.

At the start of this year, only about 1% of U.S. point-of-sale general-purpose payment card transactions were contactless. Some experts expect that figure to rise quickly, however, because almost all of the new EMV chip card terminals in stores are capable of accepting contactless NFC payments, and more merchants are

actually turning that functionality on.

Most notably, Costco Wholesale Corp. recently activated NFC in more than 500 stores.

NFC could get a further boost from new tap-and-go fare systems being installed on mass-transit systems in New York City, Boston, and Philadelphia. And more credit and debit card issuers are expected to give cardholders so-called dual-interface cards that support both contact EMV and contactless NFC payments when they replace their first generation of contact-only EMV cards.

But some big-box retailers are suspicious about payment-network policies that they believe require them to accept all of the NFC-based mobile wallets into which consumers can load credit and debit cards.

The retailers have two big objections. The wallets might enable competitors to see what their customers are buying. They also might prevent debit-card-based transactions from reaching the lower-cost PIN-debit networks, as required by the Dodd-Frank Act's Durbin Amendment, instead routing them only to the Visa and Mastercard networks.

Networks indicate contactless debit transactions will work like other debit purchases and comply with all applicable regulations.

Mobile wallets and dual-interface cards still have too little payment share to confirm if merchants' initial fears should be a long-term concern. Yet as long as that uneasiness exists, it could put a brake on NFC adoption.

7

Dual-Interface Decisions

They struck out the first time, but so-called dual-interface chip cards that support both contact and contactless credit and debit payments are at bat again, and this time they might get on base.

The first wave of EMV chip cards, which appeared in 2014 and 2015, is getting near the end of its normal lifecycle and coming up for replacement. With few exceptions, these cards were of the contact variety in which the card is inserted, or dipped, into the point-of-sale terminal.

In contrast, dual-interface cards not only have an EMV chip for contact transactions, they also use near-field communication technology to support contactless payments. But when EMV

debuted, such cards cost about twice that of a contact-only card.

And while merchants' new chip-card-accepting POS terminals almost invariably supported contactless transactions, few retailers had activated that functionality. Issuers cited the lack of consumer and merchant demand as well as the cheaper economics in going with contact-only chip cards.

But the cost spread between the two card types is narrowing. What's more, issuers can no longer cite merchant indifference as a reason to stick with contact-only cards: Visa says that as of June, 50% of its U.S. face-to-face transactions happened at contactless-enabled merchant locations.

Some of the nation's biggest payment card issuers are getting the contactless religion. Citigroup Inc.'s cobranded Visa credit card for Costco Wholesale Corp. is a dual-interface piece of plastic that doubles as a Costco membership card. Early issuers of dual-interface cards for at least part of their portfolios include TCF Financial Corp., American Express Co., Capital One Financial Corp., Wells Fargo & Co., and Oklahoma's Banc First.

A year ago, contactless cards generated less than 1% of general-purpose card transactions, and only about 5% of cards in issue were of the dual-interface variety. A year from now, those numbers are likely to be higher, though how much higher is a matter of speculation.

8

Tech Companies' Banking Aspirations

Technology companies with a stake in payments are showing signs they'd like to take on a broader role in financial services. That could be bad news for traditional banks that already have their hands full competing in payments.

Would consumers welcome services from, say, an Amazon.com Inc. or a Square Inc.? A survey out last month from Brookfield, Wis.-based bank processor Fiserv Inc. suggests they just might—and that they're considerably more likely to do so than they were only a year ago.

The survey says 55% of consumers feel comfortable using a company like Apple Inc. or Alphabet Inc.'s Google to pay bills, up from 40% in 2017. Thirty-nine percent would take out a loan from a tech-company service, up 10

55% Portion of consumers who feel comfortable using a company like Apple or Google to pay bills

percentage points, and 52% would use a tech-company service for person-to-person payments, up 14 points.

The results, based on an online survey of 3,050 consumers by The Harris Poll, comes as payments and e-commerce companies are testing the boundaries of what non-bank, technology-oriented companies can do in financial services.

Square this summer withdrew an application with the Federal Deposit Insurance Corp. for an industrial loan corporation, a type of bank that would support the company's growing

lending business, but said it plans to refile. Nearly at the same time, the Office of the Comptroller of the Currency opened the door for nonbanks with a decision to allow financial-technology firms to apply for national banking charters.

Other recent research indicates Amazon could find considerable consumer interest in its reputed banking ambitions. Earlier this year, for example, the e-commerce and payments giant was said to be in talks with major banks about a checking product for consumers.

9

The Incomplete EMV Conversion

Three years after the liability shift that spurred widespread consumer, merchant, and issuer adoption of EMV contact cards in the United States, pockets of merchants continue to hold out against the card technology. Still, considerable progress has been made.

In August, Visa Inc. said more than 3.1 million merchant locations accepted the chip cards as of June 30, a significant increase from 392,000 in September 2015, just before the October 2015 liability shift became active. Consumers have EMV cards in hand, too. Nearly 500 million Visa credit and debit cards bore an EMV chip at mid-year.

But there are holdouts among merchants. The U.S. Payments Forum,

using data from all four card brands, said in August that contact chip transactions were enabled at 58% of all U.S. merchant locations. That leaves 42% still reliant on magnetic-stripe acceptance technology.

One initiative to spur more EMV transactions, and perhaps persuade some holdouts to adopt the technology, is a push to make contactless payments more common. In September, Visa began preparing an adoption campaign involving issuers, merchants, and consumers.

The card brands promoted contactless payments for mag-stripe cards more than 10 years ago. That campaign failed dismally. This time,

Visa said, merchants are ready: half of the card brand's U.S. face-to-face transactions happen at contactless-enabled merchant locations.

Other segments continue to work on EMV adoption. Many point-of-sale system developers lacked the resources to update their software with the EMV specification for each POS terminal that could be used with it. Many turned to semi-integrated payments services, which placed the payment-processing step outside of the POS software itself. Sensitive card data captured by the POS device bypasses the POS software and connects to a gateway for processing.

10

Banking on Pot

Legal marijuana is all over the news lately as growers, medicinal cannabis providers, and retailers in states where pot is permitted proliferate. Recreational-marijuana sales are now legal in eight states and the District of Columbia, and medical cannabis is legal in 30 states and D.C, according to *Governing* magazine.

Pot also is hot in Canada, where recreational marijuana sales began Oct. 17. A number of publicly traded U.S.-based cannabis companies now list their shares in Canada.

The federal government remains the big impediment to this budding industry's growth. The U.S. Drug Enforcement Administration still classifies cannabis as a so-called Schedule 1 drug, along with heroin, LSD, and other nasty stuff the DEA says has no currently accepted medical use and a high potential for abuse.

More and more consumers and entrepreneurs beg to disagree. The ArcView Group, which tracks the legal cannabis industry, estimates the U.S. market will have \$11 billion in sales this year, which will more than double to \$23 billion-plus by 2023.

Yet banks and payment processors mostly shun cannabis companies because of the federal ban, making the industry heavily cash-dependent—with all of the attendant downsides. The U.S. Treasury Department's Financial Crimes Enforcement Network (FinCEN), however, says 411 depository institutions actively served the industry in states where marijuana is legal as of March, up 13% from 365 a year earlier.

But some observers question FinCEN's figures. They note that while specialty payment processors and a handful of financial institutions openly serve the legal industry, many banks either discreetly serve just a few cannabis providers or cut them off after discovering that they had unwittingly booked a marijuana business.

The real solution to the dilemma remains an act of Congress that legalizes cannabis on the federal level, opening the door to full-service payment and banking services. **DT**

\$23 BILLION

Estimated U.S. sales in 2023 for the legal cannabis industry, up from an estimated \$11 billion in 2018

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Bypassing Customs

Jim Daly

Across the world, governments are cracking down on immigration. Cross-border payments, however, continue to grow with the global economy. Will blockchain be next?

President Donald Trump has made cracking down on both illegal and legal immigration to the United States a showpiece, though controversial, policy of his administration. European countries, too, are attempting to stem the flow of migrants from the Middle East and Africa.

But while governments in the U.S., Europe, and elsewhere try to reduce immigration, the flow of cross-border payments remains unabated. London-based cross-border payments provider PPRO Group, which recently opened a U.S. office in Atlanta, estimates in a recent research report that U.S. cross-border e-commerce grew 25% in the past year to \$104 billion. By 2021, the processor predicts volume will nearly double to \$203 billion (chart, page 31).

Much of the predicted growth could come from wallflower merchants finally deciding to sell abroad. Only 36% of all U.S. merchants currently sell cross-border, PPRO estimates. At the same time, consumers have a growing number of online options to send money from the U.S. to family and friends in other countries.

This ever-increasing payment flow presents new revenue opportunities for payments providers, and it also opens the way for disruptors to

challenge the establishment. This is happening even though cross-border payments are more complicated and expensive than domestic payments because of government regulations and the cost of ensuring that money gets safely from one country to its intended recipient in another.

The obstacles haven't stopped payments providers, who see the cross-border market as a huge, untapped market ("A World To Conquer," October 2017). Indeed, cross-border transactions and revenues constitute one of the fastest-growing segments in electronic payments.

While Mastercard Inc. and Visa Inc. report cross-border or international revenues, neither discloses actual payment amounts. But Mastercard says cross-border volume grew 19% year-over-year in the second quarter on a local-currency basis, beating the 15% and 12% growth rates in 2017 and 2016, respectively.

Much of the recent growth came from Europe, chief financial officer Martina Hund-Mejean told stock analysts in July. Third-quarter data were unavailable at press time.

Visa says its cross-border volumes were up 10% on a constant-currency basis in its third quarter of fiscal 2018

ended June 30. Visa and Mastercard work with banks and other partners to develop the cross-border payments segment.

"Cross-border remittances is a large, attractive market that currently has a lot of friction for people receiving funds," Visa chief executive Alfred F. Kelly Jr. said on the company's July 25 earnings call with analysts.

'Price, Speed, Ease of Use'

Reducing that friction is the focus of a tide of recent announcements by payments players about new cross-border partnerships and services.

Some of the new blockchain-based startups are especially active. The promise of blockchain and the cryptocurrencies that ride on the decentralized, distributed-ledger technology is that the middleman is eliminated, thereby making cross-border payments cheaper and smoother than payments through card networks, wire transfers, and automated clearing house systems.

So far, however, the upstarts haven't come anywhere near overthrowing the incumbents in either consumer-to-consumer or business-to-business cross-border payments. And at least one, San Francisco-based Ripple Labs Inc., is pursuing a strategy of partnering with banks and other established payments providers such as American Express Co. to offer new cross-border services for certain customer niches.

For example, a year ago AmEx's FX International Payments (FXIP) unit introduced a blockchain-based cross-border B2B service with Ripple and the United Kingdom operation of Spain's Banco Santander. The new service enables non-card payments to be routed through Ripple's real-time payment network, RippleNet.

Initially, Ripple is connecting AmEx customers to Santander in the U.K. to provide what an AmEx spokesperson says are instant, trackable, cross-border payments.

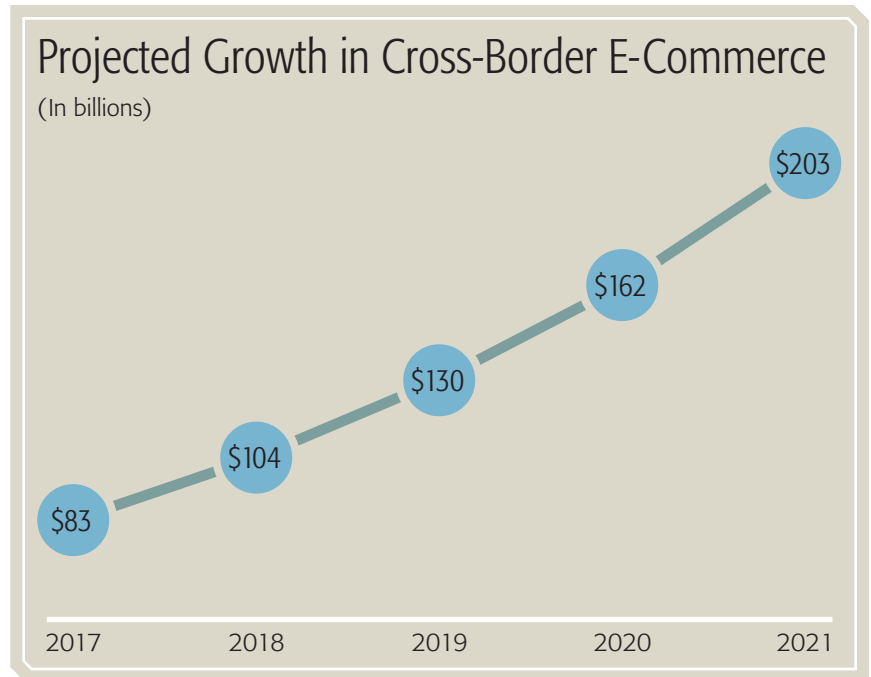
The spokesperson would not provide transaction or other usage details, but says in an email that "compared with traditional payment processes, blockchain-enabled payments improve international transactions by simplifying connections with intermediaries and providing immediate end-to-end visibility into the transaction status and cost."

Ripple did not make an executive available for this story, but a spokesperson says the company is now active in 40 countries.

Ripple is perhaps best known for its cryptocurrency, XRP, which Ripple calls a "digital asset" that facilitates the transfer of value across borders. Ripple's version of blockchain, or distributed-ledger, technology is different from those underlying Bitcoin and other digital currencies, and Ripple claims it's faster and uses less computing power.

The company's other products for cross-border payments include xCurrent for messaging and settlement, xRapid for liquidity management, and xVia for standardizing connections between payment networks.

One of the newest of Ripple's 100-plus financial-institution and payment-processor partners is Plano, Texas-based Catalyst Corporate Federal Credit Union, a wholesale institution for 1,400 credit unions. Catalyst Corporate announced in October that it would test Ripple's blockchain system initially to solve problems credit



Source: PPRO

unions and their members face with international wires.

The first area for testing will be payments from the U.S. to Mexico, one of the highest-volume remittance corridors in the world—estimated by the Spanish bank BBVA at \$26 billion in 2016.

"The traditional international wire experience fails to meet today's expectations from a price, speed, and ease-of-use perspective," Brad Ganey, Catalyst Corporate's chief operating officer, said in a news release.

"Blockchain technology, and specifically Ripple's xRapid product, resolves all three of these challenges simultaneously. Through our subsidiary companies' technology platforms, Catalyst Corporate will leverage XRP—through xRapid—to test the instant transfer of money across borders on behalf of our member credit unions," Ganey said.

Strange Bedfellows

As blockchain-based providers establish a foothold in cross-border payments, AmEx's chief rivals are ramping up their own offerings.

Visa announced two years ago that it was developing a blockchain-

based service it calls B2B Connect for financial institutions to process high-value payments. The service still is not ready for full-scale rollout, but Kelly said on the July call that it's coming along.

"We are starting by focusing on high-value cross-border transactions, which we view to be one of the largest single pain points in B2B payments today," he said. "We're addressing this with our B2B Connect solution. We are now in pilot and are on track to expand the availability of B2B Connect in the first half of calendar year 2019."

Mastercard is recruiting banks to use Mastercard Send, a near-real-time push-payment service linking debit card accounts, as their platform for cross-border payments. Chief executive Ajay Banga said on the company's second-quarter earnings call that while banks have tended to focus on large transactions in cross-border payments, there is untapped opportunity pursuing smaller transactions.

"There is a great deal of space in the relatively smaller cross-border B2B space, which is inefficient both in terms of the scaling, authorizing, and settlement times involved, but also relatively inefficient in terms of

the data that is exchanged at the point of payment,” he said, according to a SeekingAlpha.com transcript.

As they develop new services for the cross-border market, payments providers are entering into some seemingly unusual pair-ups. The Western Union Co., the world’s largest wire-transfer firm, a year ago said it would use Mastercard Send for some transactions.

And Visa announced in July that Western Union rival MoneyGram International Inc. would use the Visa Direct service, a push-payment service similar to Mastercard Send, for some cross-border payments. The first corridors to use the service are U.S. to Mexico and U.S. to the Philippines, another one of the world’s biggest remittance corridors.

Pricing Pressure

In recent years, the rise of online money-transfer firms, a group that includes but is not limited to TransferWise, Remitly, and Xoom (the latter of which PayPal Holdings Inc. bought in 2015 for \$890 million) has helped to push costs down.

In its latest annual report on remittance and migration trends, the World Bank in April said the global average cost to send \$200 was 7.1% of the amount sent in the first quarter, down from 7.5% a year earlier. Costs vary widely by geography, from a low of 5.2% in South Asia to 9.4% in Sub-Saharan Africa.

Costs still remain well above the 3% benchmark the World Bank calls its Sustainable Development Goal. This is because of de-risking measures taken by many banks and exclusive relationships between national postal systems and a single money-transfer operator, which limit competition.

Nonetheless, the entrance of new firms has put pressure on the older agent-based competitors such as Western Union, MoneyGram, and Euronet Worldwide Inc.’s Ria.

“There’s a lot of interest” in the money-transfer market nowadays,

‘The big guys, they’ve got compliance in every relevant corridor. That’s a huge deal.’

says Eric Grover, a consultant who keeps close tabs on international payment trends as principal of Minden, Nev.-based Intrepid Ventures. “There are a bunch of [new players], and they all kind of have this notion that they’re cheaper than the traditional guys—sometimes true, sometimes not true.”

In response, the agent-based players are rapidly expanding their online offerings and pairing up with other payments companies for new services.

Englewood, Colo.-based Western Union, for example, in late August said it was taking Western Union Digital, the fastest-growing part of the company—second-quarter revenues rose 22% year-over-year—to Mexico, Malaysia, Singapore, and the United Arab Emirates.

Western Union Digital already was live in numerous nations outside of North America, and the company said it plans to get the service to 200 nations and territories “in the next few years.”

In October, Western Union announced a high-value account-to-account money-transfer service based in the U.K. that will allow British consumers to send up to £50,000 (\$65,000) from their smart phones through wu.com or Western Union’s mobile app directly into bank accounts in more than 70 countries.

Western Union early this year revealed it was testing Ripple’s xRapid product, but in a June interview with *Fortune* magazine, chief executive Hikmet Ersek said it wasn’t lowering his costs. Ripple responded that there had been too few transactions to draw conclusions.

Consultant Grover calls himself a skeptic about using blockchain for cross-border payments. Some may accuse Western Union and MoneyGram of “kind of lumbering along, pricing slowly eroding,” he says, but they do have what few blockchain and some online providers don’t have—regulatory-compliance operations tailored for every country in which they operate.

“The big guys, they’ve got compliance in every relevant corridor,” says Grover. “That’s a huge deal. Nobody would suggest it’s going to become less of a deal.”

‘The Putative Dinosaurs’

Grover says many newer online firms got their starts in Europe, a relatively low-cost market for cross-border payments. “As they get more global, their cost structures are going to look a little more like the incumbents, the putative dinosaurs, Western Union and MoneyGram,” he says.

Meanwhile, in another example of new and old cross-border players pairing up when they see mutual advantage, Xoom in August said it would enter 60 more countries and expand in 26 more under a deal with Ria.

The pact enables Xoom payment recipients to pick up cash transfers from senders, most of whom are in the U.S., at 150,000 Ria locations. The largest of the new countries is Russia, but the deal also brings Xoom into a number of countries in Africa, Asia, and Eastern Europe for the first time.

Going into 2019, the lesson for the old-timers and upstarts alike seems to be that success depends on being a little like me, a little like you. **DT**

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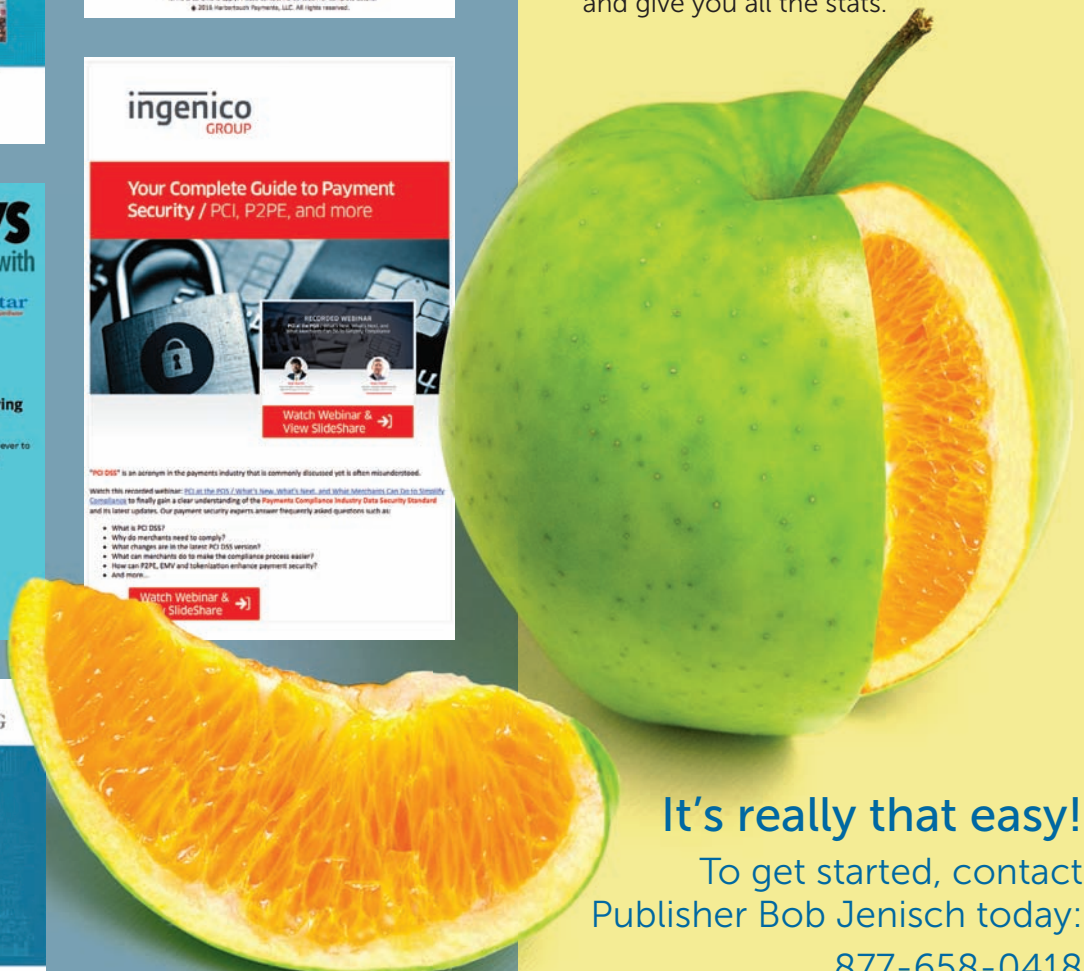
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The Long And Bumpy Road to Crypto Acceptance

Peter Lucas

ISOs have been slow to jump on the bandwagon for digital currency because the list of barriers to mainstream use remains too long.

Merchants such as Overstock.com and Newegg.com may be leading the charge to accept Bitcoin and myriad other cryptocurrencies, but if crypto is to make serious progress toward mainstream merchant acceptance, it will need the backing of independent sales organizations. Right now, that backing is in short supply.

There's a laundry list of reasons why—setting aside a few exceptions—ISOs aren't lining up behind cryptocurrency, but one of the biggest is the ambiguity that surrounds its potential to be a daily payment option.

For example, few, if any, of the cryptocurrency payment applications that have emerged can meet merchants' expectations for a fast, frictionless transaction. Because of that shortcoming alone, ISOs refer to digital currencies as "not retail ready."

"While a lot of cryptocurrency application developers have emerged in the past year, nothing has really clicked," says Jim Parkinson, chief information officer for North American Bancard Holdings LLC, a Troy, Mich.-based ISO that backed away from piloting cryptocurrency acceptance last year after failing to see a strong enough business case.

The other primary problem has to do with crypto's lack of recognition

as legal tender by the United States government. Instead, the federal government has classified cryptocurrency as an investment, reasoning that its rise to fame has been propelled by the buying and selling of the currency, which directly determines its value.

'No Common Standard'

This lack of recognition as a currency and crypto's thriving existence on specialized exchanges pose problems for ISOs.

First, because cryptocurrency is traded as an unregulated investment on exchanges, its value, or purchasing power, can be extremely volatile. The uncertainty surrounding value at any given time poses risk, since merchants expect to be paid \$100, minus transaction fees, for a \$100 purchase.

Because it can take 15 minutes or more to complete a cryptocurrency transaction, depending on the brand, the value of a crypto transaction could fall below the purchase amount, leaving ISOs on the hook for making up the difference to merchants.

"ISOs either need to guarantee the merchants' funds and absorb the price volatility that goes along with processing crypto transactions or find a way to convert cryptocurrency immediately into dollars to lessen the risk the volatility poses," says Jared Poulson, chief

integration officer for Payroc LLC, a Tinley Park, Ill.-based ISO that plans to begin supporting cryptocurrency this year. "Price volatility is a big issue."

Second, because of cryptocurrency's status as an investment, the proceeds for a sale may be subject to taxation if they represent any gain once converted to dollars. Not surprisingly, most ISOs trading crypto are not equipped to deal with the tax implications, payments experts say.

"The tax issues around liquidating cryptocurrency complicate ISOs' accounting records, which is enough to give them pause about pushing cryptocurrency to merchants," says Tim Sloane, vice president, payment innovation at Maynard, Mass.-based Mercator Advisory Group.

Third, the current lengthy wait times to complete a crypto transaction, which stem from network congestion, are a huge turnoff.

Bitcoin transactions can take 15 minutes or longer, Ethereum transactions six to seven minutes, and a Litecoin transaction between one minute and 90 seconds, according to payments experts. And those time frames are just ballpark figures. They could run longer depending on the time of day or month.

By contrast, consumers and merchants are used to having card-based transactions completed in seconds. "Crypto generally has no common standards in relation to speed of funds

transfer,” says Seamus Smith, executive vice president, global payments and banking, at Sage Group Plc, a United Kingdom-based provider of business software.

“This is against a background where markets generally are developing near or real-time settlement propositions, such as Faster Payments in the U.K., which is also due to come on-stream in the U.S. in late 2019, so crypto has a lot of catching up to do,” says Smith.

In 2017, Sage sold Sage Payment Solutions, its U.S. merchant-services arm, to investment firm GTCR LLC. GTCR renamed the unit Paya as part of a rebranding effort intended to grow its merchant portfolio.

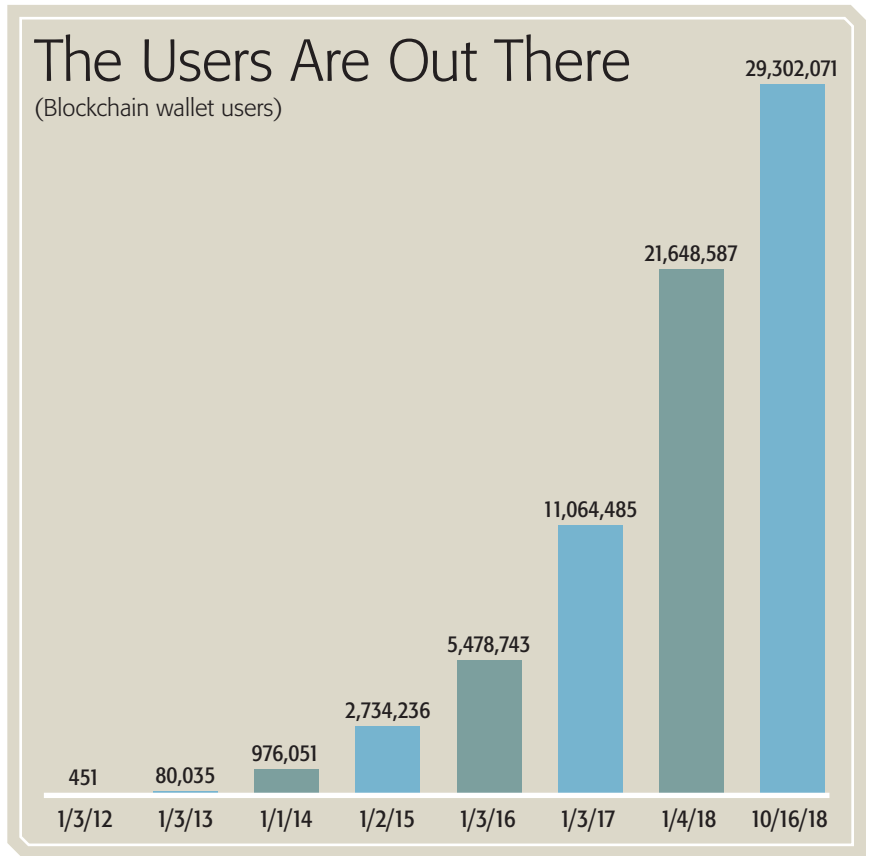
Finally, the federal government’s refusal so far to recognize cryptocurrency as a form of legal tender makes merchants and ISOs skittish about accepting it as a form of payment. “The government’s lack of support for cryptocurrency works against its ability to enable commerce,” North American Bancard’s Parkinson says.

Bullish Pioneers

Overcoming these barriers will require lots of time, since cryptocurrency-payment applications are in their infancy and face a huge uphill battle, much as credit and debit cards did when they were first introduced, payment experts say.

“(The issues surrounding) crypto don’t sit well with other forms of regulated, compliant electronic payment mechanisms like cards, wallets, or bank-to-bank payments,” Sage’s Smith says. “There are some potential use cases in economies where local currency is sometimes even more volatile than crypto—Argentina for example—but these alone do not make crypto ‘top of the pile’ for acquirers or [payment service providers].”

The lack of potential use cases among merchants is what prompted North American Bancard to back off a planned cryptocurrency pilot last year.



“We didn’t see a large enough use-case group to gather the data needed to make the case for a pilot,” says Parkinson. “The merchants accepting cryptocurrency are catering to consumers that already play with cryptocurrency as a person-to-person payment and invest in it, but’s that not a large consumer segment. Plus, most merchants struggle to fully understand cryptocurrency.”

Still, despite all the reasons ISOs can name for not supporting cryptocurrency, a select few have dipped their toes in the water.

What makes these pioneers bullish on cryptocurrency is their deep understanding of the way the currency works and the problems holding it back as a payment option. They argue future generations of consumers will embrace cryptocurrency payments.

Among the benefits they see for merchants is that the currency can be marketed as a low-cost payment option. Also, crypto transactions are resistant to fraud, and crypto represents

an opportunity for merchants to attract new customers with an affinity for the currency.

Executives at Payroc and Fort Lauderdale, Fla.-based Aliant Payment Systems, another ISO that offers crypto acceptance, say they spent months, even years, learning about cryptocurrency by trading it and using it for person-to-person payments. Only then, they say, did they apply the knowledge gained from those experiences to develop payment applications that support crypto acceptance.

“This isn’t something we just fell into,” says Eric Brown. Aliant’s chief executive. “We got into it through my trading of cryptocurrency, then spending 14 months learning about its potential as a payment option.”

‘The Real Fraud Risk’

A big part of the appeal some payments providers see in crypto is its low cost of acceptance compared to card-based payments.

For example, BitPay, an Atlanta-based provider of cryptocurrency payment solutions, charges merchants 1% of the transaction. In comparison, merchant fees for card acceptance are based on interchange, on top of which processors charge a fee. That equation usually means merchants will pay more—often two or three times more—to accept a card payment than a crypto coin at 1%.

The low cost of acceptance for crypto transactions can be a huge incentive for merchants selling big-ticket items such as travel and computers, since interchange is levied as a percentage of the transaction amount. “We are seeing a lot of interest for crypto from regional airlines, cruise lines, and Web sites selling luxury travel,” Aliant’s Brown says. “These are purchases that can amount to thousands of dollars.”

Another merchant segment ripe for cryptocurrency is sellers of precious metals and jewels. “Some credit card holders don’t have a high enough credit limit to purchase these items with their card,” says Sonny Singh, chief commercial officer for BitPay. “And purchasing these items by bank transfer can take days to complete, so waiting up to 15 minutes to complete the transaction isn’t as much of a deterrent for the consumer in that instance.”

Not surprisingly, many of the merchants accepting cryptocurrency cater to customers that invest in it, Parkinson says.

Reducing fraud is another potentially big selling point to merchants. What makes a crypto transaction fraud-resistant is the blockchain, a

‘We are seeing a lot of interest for crypto from regional airlines, cruise lines, and Web sites selling luxury travel.’

distributed, software-based ledger that provides an accurate, up-to-the-minute record of every transaction at any point in time. Miners processing each cryptocurrency maintain the blockchain. Because all crypto transactions are registered on their respective blockchains, the value of a crypto coin cannot be spent twice.

“Double spending a crypto coin is the real fraud risk with the currency and the blockchain prevents that from happening,” says Singh.

As accurate a ledger as the blockchain is, one drawback to it is that some crypto coin exchanges will wait for confirmations from multiple miners that a transaction has been made before posting it to the blockchain, which is the final step in completing the transaction, Payroc’s Poulsen says. That practice can add several minutes to the transaction.

‘A Long Way To Go’

Despite these perceived benefits, ISOs know they will never crack the code of selling cryptocurrency to merchants unless they can manage the digital currency’s price volatility.

To manage its risk, Aliant immediately sells crypto coins received as part of a transaction on an exchange

and converts the proceeds into dollars that are deposited into the merchant’s account once the transaction is complete. Aliant guarantees the merchants’ funds from the transaction.

By selling the coins immediately, Aliant avoids holding the currency and paying the merchant out of its own pocket, then recouping that cost by selling the crypto coin later when the price may be higher. This practice, known as hedging, is another way for ISOs to offset the volatility of crypto coins, payment experts say.

While there are ways to manage cryptocurrency’s volatility, none is foolproof, Parkinson says, because the price changes can occur before a transaction is fully entered into the blockchain. “This risk works against cryptocurrency from a commerce perspective,” he adds.

As with any new technology, payments experts are confident that ISOs will eventually solve the technological hurdles involved with crypto. What concerns them, however, is how long it will take for cryptocurrency to be recognized by the U.S. government as a stable currency. Until that happens, don’t expect a merchant stampede to accept crypto.

“Recognizing crypto as a legitimate currency is a pressing issue to solve for government and economic leaders,” Parkinson says. “The technology hurdles are likely to get solved sooner, and we will certainly continue to look at offering cryptocurrency as a payment option, but there is still a long way to go before merchants truly understand and demand cryptocurrency.” **DT**

‘Recognizing crypto as a legitimate currency is a pressing issue to solve for government and economic leaders. The technology hurdles are likely to get solved sooner.’

OFFERING BUSINESSES MAXIMUM VALUE IN A MERCHANT PORTAL

Merchant information portals have been around for decades. They were initially designed as standalone applications that a merchant could use to track and retrieve information about customer credit card transactions, nightly batches and the source of an occasional chargeback. The information in the portal also served as a merchant's detailed source for reconciling monthly transaction activity against their merchant statement.

Since the advent of the merchant portal, significant strides have been made in the areas of automated POS software and the integration of transaction data into popular business accounting applications. While the need for the standalone merchant portal has changed, it is still a valuable tool for merchants, especially those who manage multiple remote locations through a non-networked environment.

Over the years, many merchant portals have evolved into applications that provide users with even more capabilities. For example, merchant portals can provide access to a virtual terminal for keying in customer payments received by phone or mail. Other enhanced features might include deposit monitoring or supply fulfillment.

According to North American Bancard's CFO Jim Parkinson, this was one of the motivations behind the rebuild of North American Bancard's merchant portal. While their legacy application offered many features other portals did not, the NAB team saw the rebuild as an opportunity to bring in additional features that could not easily be accommodated through the old portal's architecture. The team also felt a re-skin of the portal's user interface was in order to give it familiar graphical and navigational features, making it easy to use. Their answer was a fully reconfigured merchant portal the company dubbed Payments Hub.

Perhaps the most striking feature of Payments Hub is its modern look and feel. The screens are graphically enhanced and very easy to interpret

at a glance, mirroring common navigational and graphical interface features found in other well-known business portals. Merchants view transaction activity in dashboards and charts, and even have the ability to filter and change variables on the fly, such as dates and transaction types. The portal was also made fully responsive, meaning it is optimized for mobile viewing, making it easy for any merchant to check transaction detail, process a supply order, or accept a mail or telephone transaction conveniently from anywhere on a smartphone or tablet.

Payments Hub also has a full-featured reporting option, giving NAB merchants access to aggregated data reports. These reports can be categorized by unique transaction details, including but not limited to the specific card brand or payment type, as well as refunds and deposits. There is even a report that provides important tax-related detail.

Other features of Payments Hub include an easy virtual terminal interface that is free to all existing and new NAB-affiliated merchants, an employee profile wizard that makes adding, deleting or changing user access rights and credentials a breeze, an invoicing feature, a supply ordering interface, dispute management features for handling pre-arbitration and chargeback requests, a statement matching tool, and much more. NAB is committed to providing access to even more capabilities through Payments Hub, delivering a comprehensive solution to help merchants manage and grow their businesses.



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In the U.S., the number of contactless card transactions is less than the number of mobile-wallet transactions. In fact, it's way less, like almost none.

Contactless Cards in America—When, Oh When, Will They Appear?



Thad Peterson is a senior analyst at Aite Group LLC, Boston, Mass. Reach him at tpeterson@aitegroup.com.

The United States is way behind other markets in adopting tap-and-go cards. That's about to change. Thad Peterson explains why.

The main benefit of EMV implementation is the virtual elimination of card-present counterfeit card fraud, and that alone is worth EMV's massive infrastructure investment. But there's another benefit to new point-of-sale installations.

Nearly all of the EMV terminals that have been installed in the U.S. also carry the ability to accept transactions through near-field communication, the contactless technology that Apple Pay, Google Pay, and Samsung Pay ("the Pays") use.

Very cool stuff, and it works really well. But while usage of mobile wallets at POS is growing, it is still a small percentage of card-based payments in the U.S.

Before this year, the limited use of mobile wallets could be blamed on a lack of NFC-enabled terminals in the United States, but that is no longer the case. According to Visa, 79% of quick-serve restaurants, 77% of drugstores, and 61% of food and grocery stores can now accept a contactless transaction.

Beyond the Pays, there's another way to make an NFC transaction: contactless, or dual-interface, cards. These cards have an NFC transmitter built in, along with EMV. The card can be used at an NFC terminal to make a contactless, "tap-and-go" transaction.

It's just as safe as a traditional EMV transaction and really fast when compared with dipping or swiping the card, so it's no surprise contactless

cards have taken off in other markets. In the United Kingdom, for example, 78% of all debit cards and 62% of credit cards are dual-interface. Some 63% of U.K. consumers are regularly using the technology.

In the U.S., the number of contactless card transactions is less than the number of mobile-wallet transactions. In fact, it's way less, like almost none.

This raises a few questions:

Why are contactless payments so popular in the U.K. and other markets?

First, when the British implemented EMV several years ahead of the U.S., it was a mandate. Merchants were required to install EMV-capable terminals, and card issuers were required to issue EMV cards. So adoption of the technology was rapid and universal. Along with EMV came the NFC capability, so the technology was generally available everywhere if merchants chose to turn it on.

In the U.S., EMV implementation is built around a shift of liability for fraudulent transactions from the issuer to the merchant if the card is EMV-enabled and the merchant cannot accept an EMV transaction. That made implementation erratic. Most large merchants implemented the technology quickly, but many smaller merchants chose to delay, or their implementations were delayed because of demand on the technology teams at the merchant processors.

SAVING ISO PROGRAMS FROM OUTDATED LEGACY SYSTEMS

The payments industry changes quickly as new regulations and market demands force continual improvement. Legacy systems struggle to keep up, and the ISOs on those platforms feel the pain.

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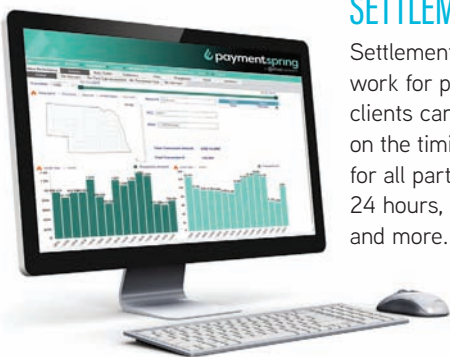
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Critical mass took several years to achieve, and there are still major categories like gas stations and high-end restaurants that have yet to implement. So, if EMV was being adopted slowly, NFC adoption was even slower.

Another major factor in the U.K. is that the London transit system had adopted a contactless card in 2012 for the London Underground and buses, and in 2014 for other rail transit. Since transit is the dominant travel option in London and rail is prevalent in the rest of the U.K., British consumers had adopted contactless years before EMV was implemented.

The cards used for transit could also be used to make purchases in transit stations, and from there the technology expanded to non-transit-related merchants. And U.K. card issuers began to offer contactless cards that could work with merchant terminals. There was very little behavioral change needed to go from “tap and go” on transit to “tap and pay” at a merchant location.

Why don't we have them here?

With the slow growth of EMV, the number of NFC-enabled terminals was limited until fairly recently. Also, card issuers in the U.S. had only recently re-issued EMV chip cards to all of their customers, a costly effort, so there was little appetite to add even more cost to include a contactless capability and re-issue cards yet again.

Will we get them?

Yes! As mentioned above, NFC transactions are now being accepted at most fast-food restaurants, drugstores, and supermarkets, where everyday payments happen. That's a huge change. There's critical mass on the acceptance side.

On the issuing side, banks are starting to replace the first round of EMV cards, and if they have to do a re-issue, the cost of adding the contactless capability can be incorporated into the cost of re-issuance. Expect to

see major issuers releasing contactless cards at scale in 2019. Visa is also aggressively promoting contactless in the U.S., so consumer awareness is rising.

What will happen when U.S. consumers get contactless cards?

Since NFC terminals have achieved critical mass and issuers are likely to release contactless cards in the next year, it's likely that adoption of the technology will be good. But there's another accelerant in the mix.

One of the reasons that adoption and usage of the “Pays” has been slow is that U.S. consumers are comfortable using cards for payment. So the vast

majority do not see a mobile-wallet payment as an improvement over card transactions. With contactless, the existing consumer behavior—pulling a card out and paying—is exactly the same. The only thing that changes is how the consumer interacts with the terminal, and contactless is much, much faster than traditional EMV transactions.

Contactless card payments are more convenient than dipping or swiping and faster than traditional EMV, with the same security. And they don't require any significant behavior change by consumers. All we need is to get the cards into their hands and contactless card usage in the U.S. will take off. **DT**

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