

# DIGITAL TRANSACTIONS

**Trends in the Electronic Exchange of Value**

## "SCRIPTING THE FUTURE"

AN ORIGINAL SCREENPLAY BY THE PAYMENTS INDUSTRY

Foundational changes in payments – the emergence of fintechs, a mobile-first approach by consumers, and the digitization of payment methods – are altering vital relationships in the industry.



Volume Sixteen, Number Twelve  
DigitalTransactions.net December 2019

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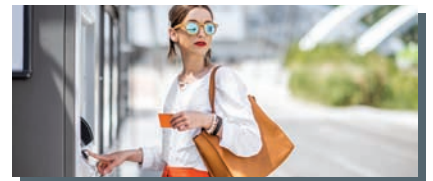
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Cover Illustration: Jason Smith, 123RF.com



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# the gimlet eye

## CRYPTO AND THE BIG BOYS

**CLOSE OBSERVERS OF THE PAYMENTS BUSINESS** may have noticed lately that while Bitcoin and other cryptocurrencies have failed to live up to their promises, some pretty big and important players are nonetheless climbing on the blockchain bandwagon.

Perhaps the most prominent of these arrivistes is, of course, Facebook. The social-media giant's Libra coin, announced in June, has caught the imagination of a wide range of crypto enthusiasts—as well as plenty of heat from suspicious regulators and central bankers both here and abroad. Most of the payments companies that initially signed on to support Libra have since dropped out, but more than 20 supporting companies remain and seem determined to see this thing through.

Before that, banking titan JPMorgan Chase & Co. lent its considerable prestige to the crypto cause. In February, it said it was testing JPMCoin, a dollar-tethered token aimed at business-to-business transfers between corporate clients of the bank. Chase is far from a wild-eyed fintech willing to dive into the latest payments craze.

Now, as we report in this issue, comes Walmartcoin. That's what our new Payments 3.0 columnist, Ben Jackson, calls this latest crypto venture, which of course comes courtesy of the retailing giant. As Ben reports on page 12, Walmart filed for a patent on Aug. 1 for a "system and method for a digital currency via blockchain." Walmart won't talk about the application, but Ben speculates the new coin could allow the merchant to tie customer spending data to specific users, attach gift card features, pay for gig work, and perform a wide range of other functions.

What to make of these ventures by big, established players into the Wild West of cryptocurrency? The reasons vary, but one thing seems certain: The field of play here is offering far more opportunity these days than may have been the case earlier with ventures like Bitcoin (for more on this, see our Endpoint column on page 31).

Speaking of Payments 3.0, we want to extend our warmest welcome to Ben as its new author. We've known Ben since the early 2000s when we were running the Chicago office for Thomson Media and he was the local correspondent for the *American Banker*, a sister publication. We let Ben use some of our office space and were immediately impressed with his professionalism.

He's chief operating officer now with the Innovative Payments Association, a perch from which we expect he will bring plenty of informed analysis to readers of *Digital Transactions*. We're also pleased that Ben's arrival allows us to revive Payments 3.0, which has been on an 18-month hiatus. We look forward to the columns to come.

John Stewart, Editor | [john@digitaltransactions.net](mailto:john@digitaltransactions.net)

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# trends & tactics

## IS BILL PAY NEXT FOR GOOGLE PAY?

Google Inc. is making a play for the heart of payments—the checking account—and some observers see the strategy’s first fruit as likely to be a move into a massive market long controlled by banks and service providers.

“It’s huge,” Krista Tedder, director of payments at Javelin Strategy & Research, says of the news, which broke last month. “It’s one step closer for Google to get into bill pay.”

Alphabet Inc.’s Google is planning to launch checking accounts next year in partnership with financial institutions, starting with Citigroup Inc. and Stanford Federal Credit Union.

The accounts would be managed through Google Pay, the company’s 4-year-old mobile-payments app. Google Pay was launched as Android Pay, and before that was known as Google Wallet.

The trade-off in these partnerships, according to Google, is

that banks can manage regulatory compliance while Google Pay provides the digital underpinnings for expanded mobile access.

“In the [United States], more than 2,000 banks already offer virtual card transactions via Google Pay, and in India we’ve seen how fast and secure mobile payments can contribute to growing economic opportunity,” says a Google spokesperson by email.

For now, Google is “exploring” the full contours of what it calls “smart checking accounts,” and will have more to say on the matter later, the spokesman says. News of the move first became known through reporting by *The Wall Street Journal*.

But for some observers, bill pay is an obvious place to start. Though they control the demand-deposit accounts that underwrite these payments, banks have struggled to control consumers’ bill-payment activity. Their share of total bill-pay volume fell from 38% to 27% between 2010 and 2016, according to the Boston-based research firm Aite Group. By contrast, billers grew their share from 62% to 73%.

The offering through Google Pay could help recover some of that

### HOW THE PAYS STACK UP

(Proximity mobile-payment users by brand, in millions)



Source: eMarketer



share. The move would also supply the technological capability for value-added features.

For example, some consumers already use Google Pay's person-to-person payment capability to pay bills, but with sponsored checking accounts, "the formalization of bill-pay to-do reminders and recurring payments" would be possible, Tedder says. "It seems like a natural fit now that they have a partnership for checking accounts."

She also sees the accounts allowing users to "auto-provision" their debit cards into their Google wallets. In this way, she argues, the checking accounts could prove to have "longer-term viability" than the credit card accounts rival Apple Inc. began offering this year through Goldman Sachs.

Other experts see the accounts helping Google Pay in its efforts to add consumer appeal in light of recent moves by competitors including not only Apple's Apple Pay but also Samsung Electronics Co.'s Samsung Pay, which has been active lately in adding new features like cross-border transfers, a prepaid Mastercard, and a card-consolidation capability.

With respect to proximity payments, Apple Pay dominates among the so-called Pays, opening a huge lead over both Google Pay and Samsung Pay, according to eMarketer (chart, page 6). Apple Pay has even overtaken perennial leader Starbucks, whose app now trails by 5 million users.

At best, a bill-pay function would be "a value-enhancer for Google Pay," notes Thad Peterson, who follows mobile wallets for Aite. The Google-linked accounts will also

help the partner institutions. "It's an opportunity to add market share to Citi," he adds.

But while Google's plans may help banks reclaim some share in markets like bill pay, Peterson says they will likely do more to cement

loyalty with existing Google Pay users than add new ones. "I don't think it's going to be a significant share mover" for Google Pay, he says. "It's much more about creating value for existing Android users."

—John Stewart

## BIG RETAILERS LINE UP BEHIND FEDNOW

A retail trade association as well as Target Corp. in recent weeks have endorsed the Federal Reserve's planned FedNow real-time gross settlement service.

In a letter posted last month on the official FedNow comment site, the Washington, D.C.-based Retail Industry Leaders Association said "over the past decades RILA has seen competition and innovation in the payments ecosystem stifled by a small group of legacy players.

This is one of the key reasons RILA supports the Federal Reserve's involvement."

"Legacy players" presumably means big banks as well as bank card networks Visa Inc. and Mastercard Inc., with which many retailers have had legal and political fights, though the letter signed by RILA senior vice president of government affairs Austen Jensen doesn't mention any company by name.



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A RILA spokesperson, however, tells *Digital Transactions* by email that “your interpretation is correct.”

RILA’s 200-plus members include such large chains as Walmart, Home Depot, Best Buy, Gap, Walgreens, Dollar General, and Lowe’s. Target, also a RILA member, is the only large retailer so far that has a formal letter posted on the FedNow comment page.

The comment period through the government’s Federal Register closed Nov. 7. Some 88 comment letters were posted on the site, and the Fed says it also has received form letters that haven’t been posted.

The Clearing House Payments Co., a processor whose parent company is owned by about two dozen large banks, debuted its Real Time Payments service in late 2017. But RILA said its members “have expressed several serious concerns about having only a single provider of faster payments. These issues center around cost, efficiency, security, resiliency, and redundancy.”

‘Consumers have experience using peer-to-peer payment options and don’t understand why the same speed and efficiency currently do not exist for consumer-to-business transactions.’

—COREY HAALAND, VICE PRESIDENT AND TREASURER, TARGET

In its own letter, Minneapolis-based Target said it “strongly supports” the Fed’s August decision to develop and operate FedNow, which the central bank doesn’t expect to be live until 2023 or 2024.

“We believe the Federal Reserve is the only service provider that can achieve nationwide reach within a reasonable timeframe by connecting financial institutions through existing master accounts using the FedLine service,” says the letter, referring to the Fed’s current offerings for payment-services access and information delivery.

Target’s letter, signed by senior vice president and treasurer Corey Haaland, says slightly fewer than half of the 1 billion Target transactions the company handles per year (Target has proprietary credit cards and a debit card) “come directly from consumers’ demand-deposit accounts. We receive negative feedback from guests about the length of time it takes to complete these transactions, whether it is a purchase, exchange, or return.

“Consumers have experience using peer-to-peer payment options and don’t understand why the same speed and efficiency currently do not exist for consumer-to-business transactions.”

Target said it “does not believe that FedNow will have a material adverse impact” on private-sector real-time services, notably The Clearing House’s RTP.

“The RTP will have been in market for more than seven years before the launch of FedNow, which is an ample head start to offset any structural advantage that FedNow may enjoy,” Haaland wrote.

—Jim Daly

## PCI COMPLIANCE DROPS FOR THE SECOND YEAR IN A ROW

Compliance with the Payment Card Industry data-security standard remains an elusive goal for many merchants and other organizations that handle general-purpose payment card data.

In fact, compliance fell in 2018 for the second year in a row, according to Verizon Communications Inc.

Verizon’s Payment Security Report, released last month, says only 36.7% of organizations reviewed for its annual global study were fully compliant with the PCI DSS in 2018, down nearly 16 percentage points from 2017, which in turn was down slightly from the peak of 55.4% in 2016. The 2018 global compliance rate is the lowest since 2013, when it was just 20%.

The PCI DSS debuted in 2006 as a common set of required security rules endorsed by the leading card networks for merchants, processors, and financial institutions, though predecessor network regulations date back even farther.

New York City-based Verizon, which besides its main telecommunications business has a large data-security operation that includes PCI assessments, started tracking PCI compliance a decade ago.

What explains the recent declines? In addition to difficulties achieving PCI compliance in the first place, many organizations

apparently are having a hard time maintaining it.

Where the company or organization is located also appears to play a role, since compliance rates vary widely by region. Verizon says 69.6% of assessed Asia-Pacific organizations were in full compliance last year compared with 48% for the Europe/Middle East/Africa region and just 20.4% in the Americas.

“After witnessing a gradual increase in compliance from 2010 to 2016, we are now seeing a worrying downward trend and increasing geographical differences,” Rodolphe Simonetti, global managing director for security consulting at Verizon, said in a news release.

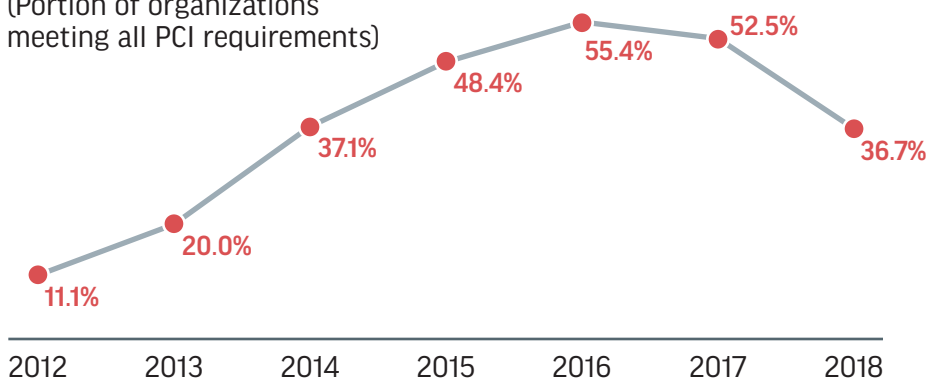
“We see an increasing number of organizations unable to obtain and maintain the required compliance for PCI DSS, which has a direct impact on the security of their customers’ payment data,” he continued. “With the latest version of the PCI DSS standard 4.0 launching soon, businesses have an opportunity to turn this trend around by rethinking how they implement and structure their compliance programs.”

The new report includes data not only from Verizon but also from other PCI-qualified security assessors (QSAs) and is based on assessments of 302 organizations in more than 60 countries. About half were financial firms; others included 60 retailers and 32 hospitality companies.

“Our research suggests that many organizations believe they can protect data by following a script, as if doing A, B and C in the correct order will achieve effective and sustainable data protection,” the report says. “In the real world, solutions

## TWO YEARS OF FALLING COMPLIANCE

(Portion of organizations meeting all PCI requirements)



Source: Verizon

are not simple, requiring complex paths with non-linear progression.”

PCI DSS compliance can be complicated and expensive, depending on an organization’s size and payments infrastructure, and merchants have grumbled about it for years. The standard covers 12 key, or broad, requirements, 78 so-called base requirements, and over 400 test procedures.

The largest compliance drop in 2018 involved key Requirement 6, which governs the development and maintenance of secure applications

and systems, whether by PCI-subject organizations themselves or third parties they’re using. Full compliance fell nearly 20 percentage points to 56.1%.

There is some good news in the report. Verizon said the “control gap,” a measure of how far organizations were from full PCI compliance, remained steady last year at 7.2%. That percentage is an average derived from the number of failed controls divided by the number of controls expected.

—Jim Daly

### MONTHLY MERCHANT METRIC

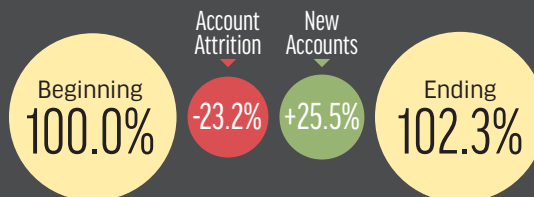
## Q2 2019 Account Attrition And Growth

#### 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 3 million merchants in the U.S. market. The ability to understand this data is important as small and medium-size businesses (SMBs) and the payments providers that serve them are key drivers of the economy.

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

Source: The Strawhecker Group © Copyright 2019. The Strawhecker Group. All Rights Reserved. All information as available.





# SQUARE'S FAST-GROWING CASH APP

If Square Inc. has made one thing clear in recent months, it's that the company is determined to tie together two worlds most payments companies see as distinct: consumers on the one hand, and merchants on the other.

That strategy took another step forward last month with Square's announcement that its Cash App person-to-person payment service now allows users to buy fractional shares of stock with no brokerage fees.

The new service joins other features of the 4-year-old payment app, including the ability to buy Bitcoin. Added versatility like this will make the app more valuable to users, a base that includes consumers but also Square sellers, Jack Dorsey, Square's chief executive, told stock analysts in November.

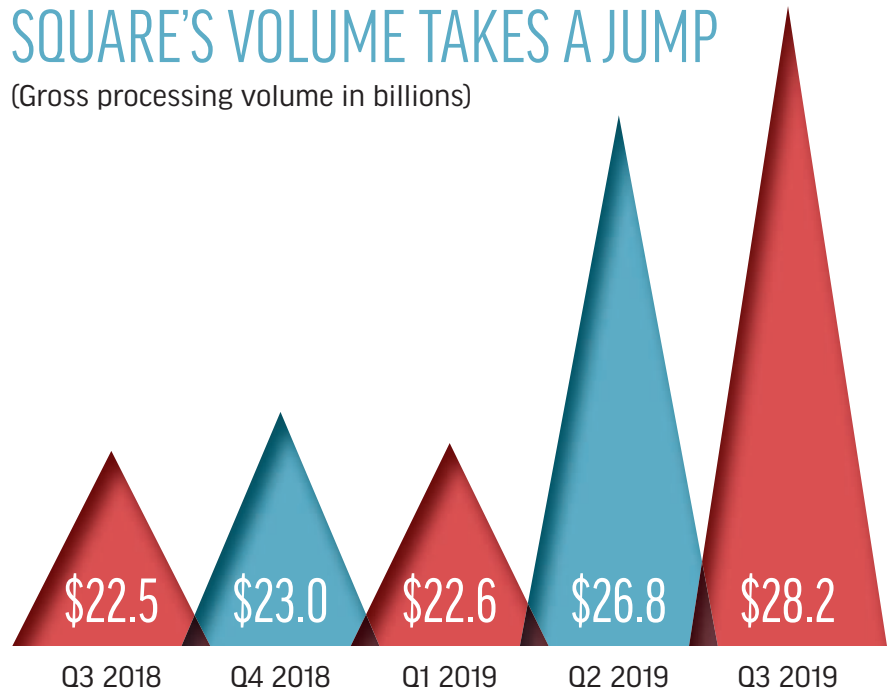
"What sets us apart is that [competitors] are doing it with just one ecosystem, like sellers. We have an at-scale seller ecosystem and an at-scale buyer ecosystem, and they're in the same company," he said, adding the mix makes for a "powerful" combination.

Dorsey doubled down on the theme at various times during the earnings call, which Square held to discuss its third-quarter results. "We will continue to look for smart ways to bring these two ecosystems together," he noted at one point.

New features clearly make Cash App a more potent product. The app rang up \$307 million in revenue in the quarter, up 115% over last year's third quarter. It now

## SQUARE'S VOLUME TAKES A JUMP

(Gross processing volume in billions)



Source: Square

accounts for about one-fourth of Square's total take of \$1.27 billion. And fully 48% of that Cash App revenue came from Bitcoin transactions, with the remainder flowing from fees for instant deposits and merchant acceptance of the associated Cash Card.

But for now, at least, there's no revenue road map for the new stock-brokerage service. With no fees attached, the service is "an engagement driver," Amrita Ahuja, Square's chief financial officer, told an analyst who asked how the company will make money on the new service.

Still, Square turned a profit in the July through September quarter, racking up \$29 million in net income. This was its first positive in that category in a year. The San Francisco company processed

\$28.2 billion in gross payment volume, up 25% year-over-year.

On the merchant side of the business, volume continues to shift toward larger sellers. Some 27% of gross processing dollars came from merchants exceeding \$500,000 in annual sales, up from 24% last year and from 20% in 2017. Merchants doing \$125,000 or more now account for 55% of volume.

But while Square started out signing up merchants by offering a cleverly designed card-reading dongle and added a consumer business later, Dorsey now sees opportunities to build feedback loops between the consumer and merchant sides of the company. Cash App is just the beginning, he makes clear. "The real magic," he told the analysts, "is how these two [parts] will work together." <sup>DT</sup>

—John Stewart

# IT'S TIME FOR BIONIC ID

**MORE AND MORE PEOPLE** are identifying themselves online through their unique biometric data. The method is robust in so far as the original biological data is in analog format, which means one decides how many digital bits to use to represent that data. The bit-flow of the reading may be very high, since analog-to-digital conversion is fast.

In practice, people lay a thumb, show an iris, or put a palm on a surface. Very convenient. Yet this method suffers from two serious and related flaws. The first is that biometric data cannot be replaced. Once compromised, the victim is forever at risk of having his identity stolen over and over again. The second flaw is that each time the method is used, the same data is sent out for verification. It can be used by an identity thief again and again. Take facial recognition. It's so easy, so effortless. Alas, our faces are in the public domain. That means a mask can be made that could open high-value targets like your phone or iPad.

Biometric identification has gained so much momentum that its cardinal flaws are stubbornly ignored. Fortunately, a path to a solution has been identified. Recent technology exploits the benefit of biometric identification while bypassing its fundamental flaws. How? By going bionic, replacing



BY **GIDEON SAMID**

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the natural finger, the iris, and the palm with an artificial device that carries an overwhelming amount of data in analog format. Bionic readers replace biometric readers, and the device itself is activated only with its owner's biometric data—so its first user is the only user.

A stolen bionic finger is useless to its thief. He can't activate it. The biometric data would reside in the device itself and would not be communicated to the network. Only the artificial biometric data would stand the risk of being compromised. And in that case, the device would be replaced.

The artificial biometric is engineered with the "Rock of Randomness" technology (U.S. Patent No. 10,467,522). Here's how it works: Unlike a fingerprint, which repeats itself each time it is used, the bionic finger sends different data each time to prevent replay fraud. A thumbprint is easy to lift from a discarded glass, and it is relatively easy to prepare a false thumb skin. But the rock of randomness, even if its reading is known, cannot be manufactured so that it gives the specified reading.

The bionic finger may take shapes other than a finger. A particularly

attractive shape is a ring. The wearer tucks the face of the "jewelry" to the reader, much as in the days when kings wearing a seal on their fingers identified themselves by pressing their ring on a hot lump of red wax. Bionic identification may be expanded to groups, clubs, and other communities, with members sharing the same bionic signature to prove their membership.

Both biometric identification and bionic identification represent an important principle guiding the future of cyberspace: material grounding. Identities must be physically established because today, be it Russian trolls or Bitcoin thieves, fake identities bring the cyber towers down. Take blockchain, the hottest thing in town. It is based on the power of the majority of nodes in a network. It is relatively easy to manufacture one or a million fake nodes and defeat the cryptographic foundation of the chain. But bionic identification constitute a seamless data flow from material to digital.

Not only people will use a bionic finger. Artificial-intelligence entities, robots, avatars will, too. Humanity is about to be served with tens of billions of Internet of Things devices, talking to and paying each other—and presenting a solid bionic identification.

Meeting the identity challenge will signal victory in this hard-fought cyber war. **DT**

# GET READY FOR 'WALMARTCOIN'

**WHILE FACEBOOK HAS GOTTEN** the lion's share of attention for its attempt to launch a digital currency, the real future of digital-currency payments may lie with the nation's largest retailer, Walmart Inc.

Walmart, based in Bentonville, Ark., filed a patent application on Aug. 1 for a "system and method for digital currency via blockchain." The company's intention is to create its own version of Bitcoin—a "Walmartcoin," if you will—but it has bigger plans than creating a cash surrogate for the Internet. The digital currency could give the retailer the ability to offer long-sought-after banking functions, as well as a way into government benefits and the payroll business. This may enable the retailer to shape the behavior of everyone who interacts with it.

Although Walmart did not respond to a request for comment, its patent application reveals not only the company's plans but also interesting possibilities for digital currencies in general.

The application describes the underlying technology as "generating one digital currency unit by tying one digital currency unit to a regular currency; storing information of the one digital currency unit into a block of a blockchain...overlapping the one digital currency unit with customer purchase history..."

In other words, Walmart would use a blockchain to issue digital



BY BEN  
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currency and track a customer's purchase history. While it describes a distributed ledger, no mention is made of who would maintain the ledger. Blockchain advocates assert that the value of the blockchain primarily comes from three factors. First, the blockchain is public so that anyone can see what happens in it. Second, the blockchain is distributed so that no one person controls it. Third, multiple entities generate each block, which means that the ledger is unchangeable.

If Walmart controls the entire blockchain, then its openness and immutability could be questioned. For a digital currency used only at Walmart, a closed blockchain might not be a problem, but given Walmart's ambitions, these questions might not be so simple.

The key to understanding where the retailing behemoth wants to go is the connection between the digital currency and the customer purchase history. The patent application says this connection will give the company the ability to better understand shoppers' spending and thus give it more ways to influence their behavior. Walmart says it could offer discounts and rewards

and adjust prices when people pay with "Walmartcoin."

The company also could restrict how Walmartcoin is used. It says this restriction capability might be good for giving money to kids, directing consumer spend, and to control what recipients of government benefits may buy if those benefits were delivered in Walmartcoin. It also says that it could create a new kind of gift card that "enabled by the digital currency system could spend themselves before the card's 24-month life expires." Furthermore, the application describes how the currency could be used by companies or individuals to pay for gift work.

The prospect of a retailer-specific digital currency raises a number of questions. For example, what rules and laws would apply to it? Would it be treated like a gift card balance and be subject to escheatment if it went unused after a certain period of time? With growing concerns about privacy and financial health, would shoppers accept digital currency that tracks their every purchase and gift cards that spend themselves? Will regulators accept it?

Walmartcoin would be the combination of a number of tools that Walmart has tested in various forms over the years and would constitute its entry into banking. It would also give Walmart customer data that would rival what Amazon, Apple, and Google can gather. DT





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## TAKING MERCHANTS TO SCHOOL

Merchant education can be a strategic advantage if you do it right. That starts with showing merchants how they can benefit from technology.

BY PETER LUCAS

**KEEPING UP WITH PAYMENT TECHNOLOGY** is not easy for merchants. As if the learning curve for EMV, which is still rolling out in some merchant segments, wasn't steep enough, merchants are grappling with such newfangled technologies as mobile payments, contactless dual-interface cards, tokenization, biometrics and QR codes.

Not surprisingly, the speed at which payments technology is being introduced has created a substantial knowledge gap among merchants. Enterprise merchants tend to be knowledgeable because

they have dedicated staff following the latest tech news. But small and medium-size merchants often have only a vague familiarity.

This knowledge gap, coupled with the rise of fintechs baking digital-payments capabilities into their business applications, has significantly altered the way acquirers and independent sales organizations educate merchants. Instead of getting bogged down in explaining how new technology works, acquirers and ISOs are showing merchants how technology can grow their business.

"Merchants, small and medium ones in particular, don't have the time to keep up with advances in technology, nor do they really want to know about the technology behind an application," says Todd Ablowitz, founder and chief executive of Infinicept, a Denver-based platform provider for payment facilitators. "What merchants really want to know is whether a new technology can help drive revenue in a user-friendly way."

### 'AN ADVISORY ROLE'

While the educational model has changed, the good news for processors and acquirers is that the primary education channel has not changed.





# BEST PRACTICES FOR MERCHANT EDUCATION

Sales representatives remain the lead educators. But sales reps now must have a deeper understanding of a merchant's business needs and competitive challenges so they can suggest technologies that can help merchants grow.

This makes the sales rep more of a consultant than an account manager.

"There is no more valuable asset when it comes to merchant education than the sales rep, because he has the relationship with the merchant that allows him to proactively talk about a technology that solves a business problem," says Ryan Malloy, senior vice president, partner sales for Troy, Mich.-based North American Bancard. "A good sales rep is always learning about the merchant's technology needs."

For example, a yoga studio wants to offer class scheduling online as a way to attract new customers. Knowing this, the processor's sales rep recognizes that a payment option embedded in the scheduling application will enable the merchant to boost sales by collecting payment at the time of booking.

The rep recommends an online scheduling application developed by a third-party partner that includes a payment option developed or supported by the processor. The application enables secure payment through tokenization of cardholder data. Rather than go into a detailed explanation of tokenization, the sales rep simply tells the merchant that no actual cardholder data will be exposed online and that the cardholder's information is stored in a secure vault.

Tokenization is the process of replacing actual cardholder data with random data. Actual card data

Recommend solutions that will help a merchant grow its business

Demonstrate how a new technology will benefit a merchant's business

Keep explanations of how the technology works simple

Provide self-service educational tools such as videos and articles

Keep merchants up to date about new technology via newsletters, email, text, or end-user conferences

Monitor how the merchant uses the technology and provide training as needed

Source: Digital Transactions

is securely stored by the card issuer.

"More processors are positioning themselves as tech companies, which means they are taking on more of an advisory role when it comes to merchant education," says Jared Drieling, senior director of marketing and business intelligence at The Strawhecker Group, an Omaha, Neb.-based consultancy.

## SELF-SERVICE TOOLS

Educational tools include video tutorials about how a new technology can benefit a merchant's business and articles about new technology. These self-service tools can typically be found on a processor's Web site. Elavon Inc., for example, delivers a monthly digital newsletter covering industry trends, technology updates, and industry-specific information.

The company also shares information through its customer portal, which is a central repository for all payments-related topics, and by email for the more time-sensitive updates. Elavon also hosts conferences to deep-dive into topics.

"We ensure our customers have regular touchpoints (when it comes to education about new technology)," says Joe Myers, chief revenue

officer and president for North America at Atlanta-based Elavon, a unit of U.S. Bancorp, by email.

What makes self-service tools effective is that they help put information about new technology in context so merchants can determine its relevance to their business. Merchants can access these tools at their leisure. It is essential, however, to continually make merchants aware these tools are available, payment experts say.

Once a sales rep has showed the relevance of a new application, he can get into some of the nuts and bolts of the technology and integration issues. The key here is not to overload the merchant with information.

Merchants "don't really need to know all about tokenization, just the basics of what it is, that it works, and it's secure," says Rick Oglesby, president of AZ Payments Group, a Mesa, Ariz.-based consultancy. "Merchants only need to understand the technology behind an application up to a point."

Much of a merchant's understanding of how a technology works can be achieved through training. Clover Network Inc., a provider of point-of-sale systems for restaurants, retailers, and service providers, automatically



schedules an hour-long training session when a merchant buys a new POS system or app.

Processors are also becoming more aware of the need to educate merchants that they can shoulder the responsibility for PCI compliance. With Visa and Mastercard heaping more responsibility for data security on merchants, the sellers are looking to outsource data-security management, Oglesby says.

As a result, merchants are increasingly asking themselves if spending information-technology dollars to manage data security in-house is the best return on investment. “Merchants can spend millions on data security and still not grow their business,” Oglesby says.

There’s a large opportunity for processors to educate merchants about how they can manage data security on merchants’ behalf while also providing solutions that grow their business, Oglesby adds.

## KEY PARTNERSHIPS

Positioning themselves as technology providers means processors must choose software partners that offer applications that can grow a merchant’s business or operate it more efficiently, such as a loyalty program, analytics to track customer behavior, online invoicing, or inventory management.

“When it comes to partnering, we look for developers we want to integrate our payment tools with,” says Steven Madow, director of product for Fattmerchant, an Orlando, Fla.-based processor. “Partnerships are part of how we do tech outreach.”

In some cases, Fattmerchant will reach out to a software developer



‘Merchants can spend millions on data security and still not grow their business.’

—RICK OGLESBY, PRESIDENT, AZ PAYMENTS GROUP

that serves a market segment in which the processor’s customers operate about including payments technology in the app. Conversely, software developers have contacted Fattmerchant about adding its payment app to their software. Fattmerchant services health-care and wellness providers, retailers, and professional and field-service merchants.

One advantage of partnering with developers is that processors can reach more merchants than they might have been able to otherwise. The same holds true for the developer. “When we put a new merchant in an integrated solution, we gain a new client and so does the developer,” North American Bancard’s Malloy says. “We have a lot of partners that want distribution, just as we want solutions.”

When sharing their application programming interfaces with third-party developers, processors are careful to retain control over the payment application being integrated to ensure PCI compliance and other compliance issues.

“Payments are complex for a lot of developers, so we make sure our partners stay outside the scope of this area,” Madow says. “It’s simpler for us to handle that end of it.”

Conversely, processors are partnering with developers because their expertise does not extend beyond payments. “It’s a bit much to expect processors to own all the technology their solutions integrate with,” says

Oglesby. “A business solution that brings payments with it puts the processor in touch with a new client.”

Another benefit of processors being a technology provider is the opportunity to do business with other large platform providers. Clover, for example, was approached by Alipay to provide its mobile and online payment services to Clover merchants.

“They saw we had a lot of merchants that did business with Alipay users, but that did not accept Alipay,” says Clover co-founder and Fiserv Inc. vice president Mark Schulze. “Because we build in a modular way, it’s easier to integrate new apps.” Clover became part of Fiserv this year when Fiserv acquired its parent company, First Data Corp.

Once a merchant is onboarded to the Clover platform, Clover pushes information about other applications to the merchant that are relevant to its business. The goal, Schulze says, is to shift merchant education to topics about how to grow the business and run it more efficiently.

With POS technology and business applications expected to get more sophisticated, specialized, and intertwined, payment experts agree that processors will continue to shift merchant education so merchants feel comfortable they are choosing the best service. “If merchants don’t feel they have chosen the right solution, they are not going to stick,” says Malloy. DT

## MERCHANTS' DOUBLE WHAMMY

Merchants have been skirmishing with networks and issuers over acceptance costs since the days of cardboard cards. As 2020 approaches, interchange rates are stable, but merchants are seeing more sales on high-cost rewards cards while paying more network fees.

BY JIM DALY



**NOT SO LONG AGO**, if you wanted to get a card-accepting merchant riled, just mention interchange. Today, it's different.

Sure, merchants still love to gripe about interchange—the amount of a bank card sale they pay to the issuer of the card the customer presented for payment. Interchange, assessed to merchant acquirers who invariably pass the expense down to their merchant clients, traditionally has been the single largest fee for accepting cards.

With little fanfare, however, interchange expenses for common transactions on consumer credit cards have shown little or no upward movement since at least 2012, according to studies by the Federal Reserve Bank of Kansas City.

That doesn't mean merchants are paying any less, however. With interchange on big banks' debit cards regulated since 2011 thanks to the Dodd-Frank Act's Durbin Amendment, banks have been nudging consumers toward unregulated credit cards, especially premium cards that command higher interchange rates than the shrink-ranks of plain-vanilla cards.

What's more, the fees levied by the big card networks are becoming a bigger expense item ("Fee Fest," November, 2017). U.S. merchants paid just over an estimated \$15 billion to Visa Inc. and Mastercard Inc. last year in network fees, says Callum Godwin, chief economist at CMS Payments Intelligence Ltd., which maintains offices in Manchester, England, as well as Atlanta and specializes in data on merchant-acceptance costs. That breaks down to \$10.8 billion to leading network Visa and \$4.2 billion to No. 2 Mastercard.

"Network fees, generally, have increased," says payments consultant Eric Grover, principal of Minden, Nev.-based Intrepid Ventures. "Like clockwork, every couple years they add a basis point here, a basis point there."

In fact, CMSPI research indicates some 24 such fees have increased since 2012. Rising fees paid to Visa and Mastercard will reduce merchants' estimated \$9.37 billion in

## CREDIT CARD INTERCHANGE FEES, TIER 1 (HIGH-VOLUME) SUPERMARKET

(cents on \$40 transaction)

	2012	2019	Change
MC Core	47.8	51.0	6.7%
MC Enhanced	47.8	51.0	6.7%
MC World	47.8	55.0	15.1%
MC World High Value	47.8	55.0	15.1%
MC World Elite	47.8	55.0	15.1%
Visa Traditional	51.0	51.0	0.0%
Visa Traditional Reward	51.0	51.0	0.0%
Visa Signature	76.0	76.0	0.0%
Visa Signature Preferred	94.0	94.0	0.0%
Discover Core	61.0	61.0	0.0%
Discover Rewards	71.0	74.0	4.2%
Discover Premium	71.0	74.0	4.2%
Discover Premium Plus	86.0	86.0	0.0%

Source: Federal Reserve Bank of Kansas City

savings from the Durbin interchange caps this year to \$4.6 billion, CMSPI estimates.

Visa declined comment, and Mastercard did not respond to a request for comment.

## HARDER FORECASTING

For merchants, especially small and mid-size ones with no negotiating power with the networks, these new patterns are making the task of forecasting card-related costs harder.

On paper, interchange rates have been remarkably stable. Every year, Fumiko Hayashi, payments policy advisor and economist at the Kansas City Fed, and her staff analyze interchange rates in the U.S. and abroad. Their latest report, published in August, shows little change in interchange for many Visa, Mastercard, and Discover consumer

credit cards. Their calculations are based on the networks' published interchange schedules, though actual costs may be lower for large merchants with enough transaction volume to negotiate lower rates.

The researchers present their findings in a format that shows costs on a typical sale with a credit or debit card in a major merchant category, such as a \$40 purchase at a supermarket, retailer, or gas station, or a \$10 purchase at a quick-service restaurant.

Average interchange for a basket of 13 standard and premium credit products used at large supermarket companies qualifying for the lowest rates was 61.5 cents on a \$40 sale in 2012. By this year, the basket's average large-supermarket rate had risen only 4.4%, to 64.2 cents, less than the rate of inflation. Interchange on several Mastercard premium cards rose

15%, but rates on other cards didn't change at all (chart).

The costliest card is the Visa Signature Preferred card, on which a \$40 sale at a large supermarket generated 94 cents in interchange for the issuer.

For large non-supermarket retailers, there was just one minor rate increase over the seven years for the same basket of credit cards.

"In the U.S. we don't see much change, except for corporate credit cards," says Hayashi.

## REWARDING EVERYONE

Against this background of rate stability, however, is the continuing evolution of credit cards into higher-interchange premium varieties. Data in an August report from the federal Consumer Financial Protection Bureau show that about 85% of consumer credit card purchase volume was on a rewards card in 2018, with the rewards share edging up slightly each year since 2015.

About 60% of overall credit card account originations in 2018 were for rewards cards, though that has slipped a couple of percentage points in the past few years. But even such risky consumers as those the CFPB dubbed "deep subprime" now put nearly 60% of their credit card purchases on rewards cards.

Another study shows credit cards' growing popularity. The Federal Reserve's 2018 Diary of Consumer Payment Choice says 21% of research participants named credit cards as their most frequently used payment instrument in 2017, up from 18% in 2015. The popularity of debit cards slipped, with 27% of participants naming them as their



most frequently used payment instrument compared with 30% two years earlier.

That's no surprise to Intrepid Ventures' Grover. Big banks, whose regulated cards generated 63% of debit transactions in 2018, according to the Federal Reserve, have incentives to promote credit cards, he says. The Fed's regulation implementing the Durbin Amendment in 2011 extinguished about half of their debit-interchange revenues. And consumers like their credit card rewards, be they cash back, airline miles, free hotel stays, or other perks.

"They're getting whatever currency they want," he says. "Consumers are rational actors."

The Kroger Co., the nation's largest standalone supermarket company,

tried to buck this trend by boycotting Visa credit cards beginning in August 2018 at Foods Co., one of its smaller nameplates, and later expanding it to the bigger Smith's subsidiary. About 155 stores in all participated. Cincinnati-based Kroger said Visa credit cards cost more to accept than other brands' cards, and the Kansas City Fed's data at least partially verifies that claim.

In October, however, Kroger disclosed Foods Co. and Smith's had resumed taking Visa credit cards. The company didn't say how it made peace with Visa, but a number of analysts declared Visa the probable victor in this dustup.

"I see this as a win for Visa and the entire card industry," Ted Rossman, senior industry analyst at CreditCards.com, an Austin, Texas-

based card-comparison service, says by email. "We don't know the specific terms here, and maybe Kroger got a better deal, but my view is that card bans and surcharges are consumer-unfriendly and could actually hurt merchants. While merchants don't like paying 2[%] or 3% in interchange fees to card companies, that's a lot better than losing sales."

The odds are good that the continuing combo of more premium credit card transactions and more network fees means total acceptance costs will be rising. But probably not enough to spark anything more than grumbling.

"Merchants are price takers," says Grover. DT

—With additional reporting  
by John Stewart

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## WHEN YOU'VE DECLINED THE WRONG TRANSACTION

The problem of good customers being rejected online is only getting worse. There's no single solution, but better authentication could help.

BY JOHN STEWART

**AS THE ANNUAL** holiday shopping rush sets in, a specter is haunting online merchants. It's not the ghost of Christmas past or future. Rather, it's the prospect of turning away what would have been perfectly good transactions on a mistaken suspicion of fraud.

The problem is called false declines, and it's not new. But as criminals increasingly ply their trade in e-commerce, online fraud rates are rising fast, and that means skittish merchants are likely to deny more good sales along with the bad ones.

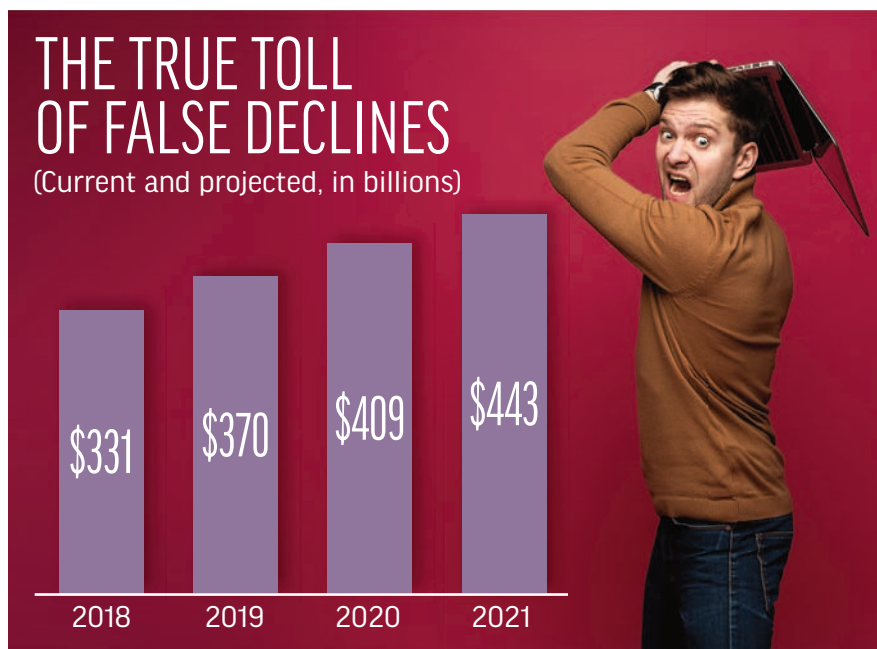
False positives are expected to cost \$370 billion this year, up 12% from 2018. And that number is projected to climb another 20% by 2021, according to Boston-based researcher Aite Group (chart). Indeed, dollars lost to false declines dwarf real fraud losses, which Aite pegs at a likely \$5.5 billion this year.

The common reaction is to tighten fraud screens. But by tuning their software to stop the onslaught of fraud, e-commerce sellers are actually leaking more money, experts say.

"Reducing fraud by throttling legitimate transactions is short-term thinking," says Ron Hynes, chief executive of Vesta Corp., a Lake Oswego, Ore.-based vendor of risk tools, by email. "It puts undue pressure on profit margins, reduces sales revenues and the number of good transactions, negatively impacts customer loyalty and brand reputation, and wastes money."

### RISING FRAUD RATES

Still, you can't blame online merchants for being cautious. With EMV now more or less commonplace at physical stores, the fraud rate is soaring as criminals move to the less-protected cyberspace.



Source: Aite Group

Online fraud victimized 3.79% of consumers in 2017, estimates Pleasanton, Calif.-based Javelin Strategy & Research, a number the research firm projects will rise to 5.11% this year and close in on 7% by 2022.

But that rising fraud rate is only likely to make merchants clamp down harder. Javelin's latest research has found that, among reasons for turning away non-criminal consumers, false declines affect more customers than any other cause except non-sufficient funds (chart).

The fallout for e-merchants is that customers may simply take their custom to a competitor. While most simply shift to another card, some 43% of falsely declined buyers either stopped purchasing from the merchant altogether or reduced their buying.

"When you're online, it's so easy to go somewhere else," notes Krista Tedder, head of payments research at Javelin.

Another problem, curiously, is that false positives disproportionately affect online merchants' most affluent customers. Javelin found that 53% of those falsely declined online had a household income of \$100,000 or more annually. For false declines in physical stores and on mobile devices, by contrast, the percentages at that income level were 47% and 38%, respectively.

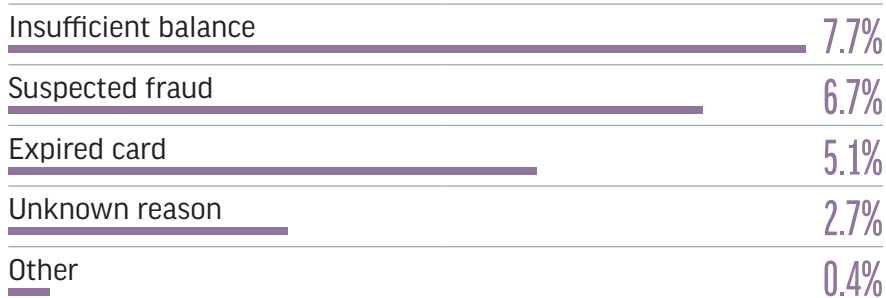
## 'NO MAGIC BULLET'

The complexity of the problem tends to cloud the search for answers. "There's no magic bullet," says Shirley Inscoe, a senior analyst at Aite.

More manual review is one possibility, but that's expensive and time-consuming. Loosening fraud

# WHY CUSTOMERS ARE DECLINED

(Percentage of cases, by cardholders affected)



Source: Javelin Strategy & Research

screens is risky with fraudsters steadily moving online. "Losses are rising, so as a defensive mechanism [online merchants] are declining a lot more transactions," Inscoe notes.

One promising solution lies in a specification introduced several years ago but only now rolling out on a wide scale among issuers and merchants.

3-D Secure 2.0, a thorough-going update on a much older authentication tool, takes a wider range of known factors into account to help in deciding whether the person at the other end of the transaction is legitimate. It also works in-app, whereas the older version worked only in browsers.

"It enables merchants and issuers to share a lot more data," Inscoe says. "That's what you need to fight fraud." Indeed, of all the solutions Inscoe has evaluated, she says the new 3-D Secure "has the most potential" to stem the rise of false declines.

Another benefit: Card network rules have determined that merchants that adopt the technology can shift the responsibility for actual fraud to the issuer. That means issuers have a big reason to adopt new 3-D Secure, if only to ward off losses flowing from protected merchants.

"The motivation [for issuers] will be when merchants have implemented it and issuers have not," observes Inscoe.

But not everyone is convinced that 3-D Secure 2.0, for all the additional user data it can move between issuer and merchant, is the missing magic bullet for false declines. "By the time it rolls out, [criminals] will have a new way of committing fraud," predicts Tedder, which will prompt extra caution among issuers and send false-positive rates up again.

## GETTING TO KNOW YOU

In the end, counsel some observers, there may be no substitute for some old-fashioned ways of knowing who your customers are.

"A business should get to know its audience and optimize its system based on their customer buying patterns," says Hynes. "When seeking to gain the full picture behind a declined transaction, businesses should also consider supplementing automated fraud security efforts with direct customer engagement."

In other words, call the customer. It couldn't hurt. **DT**

# "SCRIPTING THE FUTURE"

BY KEVIN WOODWARD

Foundational changes in payments – the emergence of fintechs, a mobile-first approach by consumers, and the digitization of payment methods – are altering vital relationships in the industry.





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Two thousand twenty may be the year that many of the underlying changes various payments players have made in the last few years manifest in a resounding way.

That is one possibility as the industry adapts to the impact of financial-technology providers—formerly called nonbank providers—and their services, which consumers are clamoring for amid incumbents' ambitions to retain their customers and add more.

How all this affects retail payments, defined as those completed through a financial institution, is critical.

**Here's what's happening in payments that suggests the industry's future is being thoroughly rewritten.**

Last month, news emerged that Alphabet Inc.'s Google subsidiary plans to offer checking accounts via partnerships with Citigroup Inc. and Stanford Federal Credit Union. Few details are available, but the move is more evidence of a technology firm drilling deeper into payments. Google has long offered a payments service, starting in 2006 with Google Checkout, which became Google Wallet and now resides under the Google Pay umbrella. Google Pay is one of the big mobile-payment apps—Apple Pay and Samsung Pay are the others—from giant tech firms.

Another big move in November, at least on the surface, was the launch of Facebook Pay. The social-media giant launched the service as a consolidated way for users of its various sites to pay each other, make donations, and shop. Consumers enroll a credit or debit card or a PayPal account to pay.

Facebook, too, is organizing the Libra cryptocurrency project, which could be used for payments if regulators let it get off the ground (“Under the Sign of Libra,” October). It is working on a companion wallet called Calibra.

Then there are the native payment companies adding untraditional services. Processor Stripe Inc. added Stripe

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Issuing in 2018 as a platform for merchants to issue their own credit and debit cards. And this year, Adyen, another international processor, launched Adyen Issuing. Cards issued under this program can be used online and in-store and added to mobile wallets, Adyen says.

There's a plethora of other examples of this fintech impact, including the whole faster-payments initiative. It's in commercial use now through The Clearing House Payments Co. LLC's Real Time Payments service, with others, including FedNow from the Federal Reserve, expected. Prepaid provider Green Dot Corp. offers not just prepaid cards, but banking services such as its Unlimited bank account.

## 'BIG BETS'

“This is the year we think a lot of the strategies are going to be played out in the payments space,” says Zach Aron, principal at Deloitte Consulting LLP for U.S. banking and capital markets payments. “We will see big bets this year.”

His explanation for that outlook is partly that so many organizations have made foundational moves in the past few years. These efforts reflect how they collaborate with fintechs and how they think about the role they want to play.

At the forefront of this movement is the ongoing digitization of payments. With the advent of network tokenization and the proliferation of use cases for digital versions of credit and debit cards, the dominance of the traditional card form factor may appear to be at risk. But Deloitte says that's not the case.

In the 2019 edition of the Deloitte Center for Financial Services' payment survey, a plurality of respondents—47%—said they are more likely to use credit cards than other payment instruments in the next two years. Next were debit cards at 40%. Cash, at 7%, was a distant third, followed by bank transfers, 5%, and checks, 1%. The survey canvassed more than 2,500 consumers in August.

As consumers think of more and more digital ways to pay, their understanding of the credit card may change. That does not mean consumers won't think of credit cards, a simpler transactional mindset may gain favor. “As people move to more digital aspects, they don't think of it as a credit card transaction,” Aron says.

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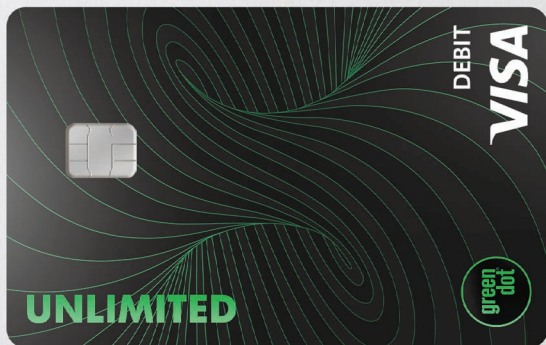
And as they use more digital-payment methods, consumers may alter their definition of a transaction from one that entails dipping a card into a terminal. “We will see a growing digital presence,” Aron says. “I don’t think we will see declining plastic use.” Instead, the digital growth may come at the expense of cash, a long-sought-after goal of payments companies.

According to Accenture, retail-payments revenue will likely grow at a compound annual rate of 4% over the next six years, going from \$322 billion in 2019 to \$405 billion in 2025. To ensure getting a share of that growth, banks and other payment-industry incumbents need to shift strategies, Accenture says.

Accenture pegged the potential loss to banks in terms of retail payments revenue, if they don’t act in response to fintechs and other emerging payments providers, could be as much as \$88 billion in the United States and Canada.

The worldwide effect, of course, could be much greater. “The impact of [instant, invisible, and free] payments will be significant. Based on our analysis, it is likely to decrease the payments revenue pool by 15 percent by 2025 and may cost complacent banks up to \$280 billion in revenue opportunity loss, globally,” the report says.

Accenture is already finding significant erosion. It calculates that debit card revenue per transaction was 29 cents in 2018, a 14.6% decrease from 34 cents in 2015. For credit cards, revenue per transaction was \$1.07 in 2018, down 11.6% from \$1.21.



INT. FAST CASUAL RESTAURANT

NARRATOR

The fintech trend is affecting basic banking services, as exemplified by the Green Dot Unlimited Card.

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Fintech players may be aided in their efforts because of a couple significant developments this year, says Kevin Grieve, Accenture managing director-payments lead.

“You have to look at probably two things that happened this year that are pretty fundamental changes in the marketplace,” Grieve says. “This first is the consolidation in the marketplace. We had the recession in 2008 and deals just stopped. M&A activity is part and parcel of payments,” he says. “The reason is because scale wins.” Megadeals completed in 2019 include the \$43 billion Fidelity National Information Services Inc. (FIS) and Worldpay Inc. deal, the \$22 billion Fiserv Inc. and First Data Corp. merger, and the \$21.5 billion Global Payments Inc. and Total System Services Inc. (TSYS) combination.

A better economy fostered these and scores of other deals. “There was pent-up demand because the industry has always been a consolidation industry,” Grieve says. “We’re back to an original mega-trends of the industry.”

“The second piece is how much the fintechs are playing,” Grieve says. Payments is a leading focus of their investments. “Fintech is here and having an impact on the industry.” A major portion of the investment in fintechs is payments, he says. With the continued digitization of the industry, many fintechs are capturing revenue, he says.

Aiding this trend is fintechs’ superior technology. Banks and other financial institutions may depend on legacy technology that leaves them lagging behind the nimbleness of the newer fintechs.

## CONSUMER EXPECTATIONS

The big factor behind all of this change is the consumer. “Consumers are the primary influencing factor in how retail payments are changing. How they want to engage, and their ability to shift to new financial institutions, now places banks and credit unions at risk of losing deposits and other payment methods if they do not innovate,” says Krista Tedder, director of payments at Pleasanton, Calif.-based Javelin Strategy & Research. “Consumers are omnichannel—mobile, browser, in person.”

Consumer expectations have changed, as they can from one generation to another, she says. In today’s arena, those expectations will be facilitated via technology.

“The technology infrastructure needs to dramatically improve to enable U.S. consumers to be digital only,” she says. “If you look at online help capabilities, you will see that we have a long way to go.”

“The big thing is consumer behavior typically gets set outside the industry and [consumers] bring their expectations with them,” Grieve says. “All those experiences diffuse, and they diffuse very quickly.”

Because of these expectations, new models around pricing and the economics of payments will evolve, says Aron. Consumers see value in credit cards and the rewards they offer, but the industry is starting to see the undercurrents of change in how cards are issued, he says.

Apple Inc., for example, launched its Apple Card this year, in conjunction with Goldman Sachs Group Inc., as a digital-first product, with a companion app holding details that are not even printed on the physical card.

## REINVENTING REVENUE

Accenture, in its report, suggests several strategies to reinvent retail payment revenue, including moving away from legacy technology, collaborating more, tapping into data in new ways, and preserving customer trust.

Reinventing revenue means offering more value-added services that consumers are willing to pay for. “New market realities demand replacement revenue in the form of value-added services and experiences to drive economic performance,” the report notes

Similarly, Deloitte, in its report, views competition between open and closed payments platforms as a top trend for 2020. Others are how the economics of payments are evolving; the development of new standards that govern the flow of money; the role of noncommercial organizations in payments; and talent acquisition, especially as technology roles gain more importance.

“How, when, and what the strategies look like will come as big bets next year,” Aron says. “The tea leaves for that will be in a variety of areas.” It will manifest in the design and development of payments platforms. Will the investment be directed more to integration with others or will the effort be on vertical integration, Aron says.

The public sector also will make moves, like the Federal Reserve’s FedNow real-time payments project.

“We will start to see new ideas around pricing and economics as well,” Aron says.

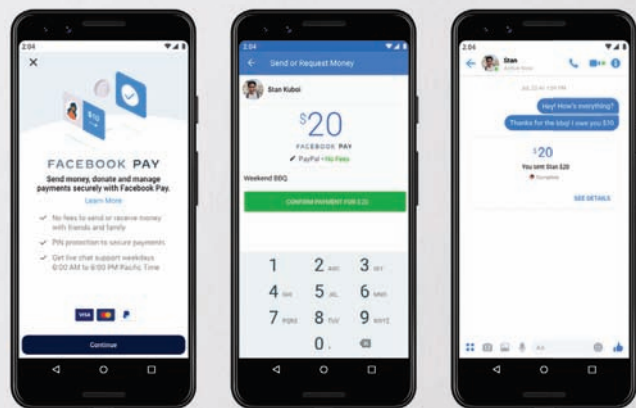
“As value decreases for traditional competitive differentiators, such as transaction processing speed, convenience, and access, these offerings may become increasingly commoditized; this could reduce once-dependable payment processing fees and spur companies to establish alternative revenue streams,” says the Deloitte report.

New mega-processors, like Fiserv, FIS, and Global Payments, combined with available banking services, may develop new products that tap into both issuing and acquiring.

The card brands, too, will want to play a role. “There’s more focus today on the issuing side of retail payments, like consumer-facing apps that include all of the alternative lenders, the point-of-sale lender, and the investment platforms that have popped up,” says Adam Granoff, Mastercard Inc.’s senior vice president of digital partnerships.

The brand has worked with many fintechs on their technology and has made that available to banks, too, he says.

“They are providing digital-first service,” Granoff says of fintechs in general. “In some cases, they are putting a more intuitive lens on financial services that have been around for a long time.” Others may be providing new services, such as lending services for online purchases.



### EXT. CROWDED FARMERS’ MARKET

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Facebook Pay: Linking millions of users across the sprawling Facebook universe.



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## ONE LARGE COLLABORATION

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From his perspective, Granoff views the entire payments industry as one large collaboration because of a key characteristic unique to financial institutions. To provide financial services, an organization needs to be a fully licensed and chartered bank, he says.

Mastercard itself requires issuers to be chartered banks. As a result, “the entire ecosystem is a giant collaboration,” Granoff says. “All of the services are being provided in partnership with a bank.”

He cites tokenization as a technology that lives in the bank world and among fintechs. “We’re helping merchants tokenize their existing cards on file to provide basically a smarter payment credential,” Granoff says.

The technology is vital to mobile payments. Tokenization is one of the much-touted features of Apple Pay, Google Pay, and Samsung Pay, all of which rely on replacing the actual card data with a token.

Tokenization is what makes it possible for in-app transactions to happen behind the scenes, such as



INT. DELOITTE CONSULTING LLP

We meet ZACH ARON, a principal at Deloitte, reviewing a fintech’s proposal.

ZACH

Doing nothing makes you a lot of money.

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in the Uber and Lyft apps. “Tokenization is a really important piece of innovation that is helping deliver a better experience,” Granoff says. “We will continue to see use cases proliferate where tokens are helping do that so less transactions are declined.”

Even The Clearing House is incorporating Mastercard’s tokenization technology into its Real Time Payments service, melding something that originated in the card world with a non-card payment service.

Mastercard has not been timid when it comes to finding ways to use its technology to foster electronic payments. In 2017 it purchased VocaLink Holdings Ltd., a United Kingdom-based faster payments company, whose software helps power the TCH service.

Indeed, collaboration is vital, says Javelin’s Tedder. Just as important is creating a framework for how the collaboration will function. “A challenge many fintechs have is they find a champion of their service who is not a decision maker and cannot provide funding,” she says. “Financial institutions should create a cross-functional team which can assess, test, and implement solutions in an agile manner.”

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## ‘ BETTER, CHEAPER, FASTER ’

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Ironically, the biggest challenge the payments industry faces amid the swirl of fintechs, financial institutions and consumers, is that it is a profitable one, Aron says. “Doing nothing makes you a lot of money,” he says.

But this is not how this will play out. There will be a lot of bets on new products and services and on new combinations. Digital transactions will grow, but plastic use won’t decline, Aron says. The trend will reflect more digitization of cash.

Granoff’s outlook is that more combinations of services across what had been traditional boundaries is the new norm. “We’re going to see more of the same for the next couple of years,” he says.

Fintechs and banks will continue to partner, and banks will continue to offer their own digital products and services, he says. “It’s a really good place for the consumer and this business because there’s a lot of innovation going on. That’s delivering better, cheaper, and faster financial products.” **DT**



# security

## A STUBBORN SCHEME

Chip cards were supposed to make it harder to commit fraud at the point of sale and at ATMs, but card skimmers haven't gotten the memo.

BY PETER LUCAS

**IF YOU THINK EMV CARDS** have put a big dent in card skimming, think again. In October, the U.S. Attorney's Office for the Southern District of New York indicted 18 defendants alleged to have participated in what the indictment described as "a wide-ranging international ATM skimming and money-laundering operation."

The case is a stark reminder that as long as magnetic stripes remain on EMV cards, it doesn't matter how many EMV cards are issued or EMV-enabled point-of-sale terminals and ATMs are deployed. Skimming will remain a serious problem.

Worldwide skimming losses total more than \$2 billion annually,

according to the ATM Industry Association. The defendants indicted in New York allegedly made off with more than \$20 million. Many of the victims either had their account data stolen and resold, or had their bank accounts drained.

"Skimming is still a significant problem, though down from pre-EMV levels," says Sam Ditzion, chief executive of Tremont Capital Group, an investment-banking firm specializing in the ATM industry. "Magnetic stripes still exist on EMV cards, so the data on the mag-stripe can still be captured and the card cloned."

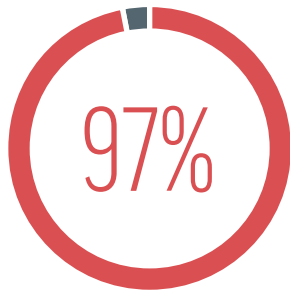
Magnetic stripes aren't going to disappear from the back of EMV cards issued in the United States any time soon, what with the deadline 10 months away for gas stations to install EMV card readers at the pump. Factor in the numerous mom-and-pop merchants still holding out on EMV compliance—plus a false sense of security among these merchants that they are too small for skimmers to target—and it's easy to see why stamping out skimming fraud can only be a frustrating experience.

### NONE THE WISER

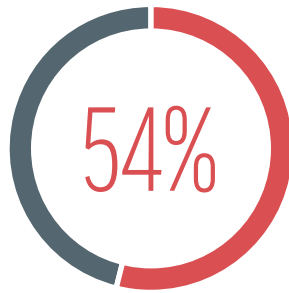
Skimming is a technique by which criminals insert a device containing a microprocessor and memory card



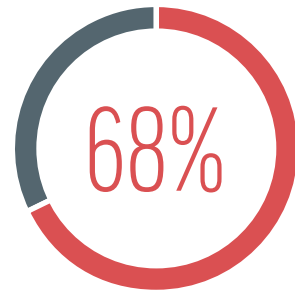
# SKIMMING BY THE NUMBERS



of total ATM card losses are due to skimming



of banks and independent ATM operators say they've experienced a skimming attack



of executives in the U.S. say skimming is a severe threat

Source: Diebold Nixdorf

into an ATM or POS terminal. The device lifts, or “skims,” the account information off the magnetic stripe and into the skimming device, which is collected later by the fraudster. Over the years, advances in skimming devices have made them smaller, more efficient, and harder to detect.

Other advances, such as the ability to transmit card data from a skimmer to a mobile device using a cellular network, have further exacerbated the problem. This scam allows criminals to gather cardholder data in real time, which means they can start using the data immediately, as opposed to after it is retrieved. The data is transmitted via text message.

But the big advantage to leveraging cellular networks for skimming is that criminals no longer have to risk detection by retrieving the skimmer to download the data. Instead, the device is left in the card reader when the criminal is finished with it, and the merchant or ATM deployer is none the wiser.

Now skimming is moving in waves toward gas stations and other merchants that have yet to install EMV card readers, payments experts say. Owen DeWitt, president

of FlintLoc Technologies LLC, a Lampasas, Texas-based provider of anti-skimming technology, estimates that about 80% of in-pump card readers at gas stations and convenience stores have been breached by skimmers at one time or another.

“Skimming is not an equal-opportunity type of fraud,” says Russ Haecker, EMV business leader for Wayne Fueling Systems, which is part of Dover Fueling Systems. “Criminals are going to focus on gas stations that have not upgraded the in-pump card readers.”

In April, about 30% of all gas stations in the United States were estimated to have EMV card readers, to be testing them, or to be starting to install, according to industry experts (“Where EMV Spells Headache,” May 2019). Those figures are a strong indication a substantial portion of gas stations won’t be ready to meet the 2020 deadline. The bulk of the non-compliant stations is expected to be c-stores.

A survey conducted earlier this year by Conexus Inc., an Alexandria, Va.-based technology-standards body for convenience stores, showed that, of 26,000 stores,

about 70% had not deployed EMV card readers.

“Unfortunately, it’s looking like a substantial percentage of c-stores will not meet the EMV deadline,” says Linda Toth, director of standards for Conexus. “While we are working to educate c-store operators about the risk of skimming, criminals are targeting [stores that have] non-compliant fuel dispensers.”

While gas stations remain vulnerable to skimmers at the pump, the good news is that most stations have deployed EMV card readers inside the convenience store, which has substantially cut down on skimming, Haecker says.

## GET READY FOR SHIMMING

Skimming attacks at fuel-pump card readers typically occur in one of two ways: by installing a skimming device within the in-pump card reader or by attaching a skimming device over the mouth of the card reader that mimics the look of the card reader.

The former method is becoming more common because internal skimmers are harder to detect than external skimmers. Criminals can

breach a fuel-pump card reader by inserting a skimming device through the printer door, for example. Overlays, by contrast, can typically be spotted by a visual examination of the card reader.

ATMs can be breached internally, as well, typically by drilling a hole through the machine to insert a skimming device on the magnetic heads of the card reader. The hole left at the point of entry can be camouflaged with a sticker displaying the logo of the ATM deployer or manufacturer, says Marcelo Castro, principal product manager for security at ATM maker Diebold Nixdorf.

Attaching an external skimming device on a fuel pump or ATM tends to be the easier option, as the device is typically glued on. The overlay intercepts the card before it passes through the card reader and gathers account data without the consumer realizing she has been scammed.

## COST ISSUES

ATM deployers and POS terminal makers have been shipping EMV-compliant units for years, which has helped thwart skimming fraud up to a point. But criminals have found a way to pull cardholder data even from an EMV card. The technique is called shimming.

A shimmer is a wafer-thin device inserted into the mouth of an EMV card reader that eavesdrops on the communications between the chip card and the card reader. While EMV chips make the transaction data less useful to attackers by introducing dynamic data unique to each transaction, shimmers can still grab the primary account number and the cardholder name,



Diebold's ActivEdge card reader: Long edge first.

(Photo: Diebold Nixdorf)

which can be used to commit card-not-present fraud.

"Poorly designed e-commerce sites that don't use proper security validation techniques, such as asking for the security code off the back of the card, are vulnerable to this type of CNP fraud," says Steve Bowles, regional security officer, North America for terminal maker and payments provider Ingenico Group.

Skimming may be more common at ATMs and gas stations, but

it's by no means confined to those scenarios. It can also take place in environments where the card leaves the customer's hand, such as restaurants and bars. This is a practice common in the U.S. "It's easy for a scammer to copy the card information quickly while it's in their possession," Bowles says. "As more pay-at-the-table solutions are adopted, this will prove to be less of a threat."

Companies like Ingenico have made anti-skimming technology

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standard on new devices or made anti-skimming upgrades available. Anti-skimming technology on the POS terminal side includes point-to-point encryption, which masks card data in the terminal as the card is inserted.

ATM manufacturers are also rolling out anti-skimming upgrades. Diebold Nixdorf, which says about 97% of ATM card fraud losses are due to skimming, has developed ActiEdge, a card reader that requires cardholders to insert their debit card cards into the reader long edge first, rather than short edge.

Changing the entry of the card prevents external skimmers from reading mag-stripe data and skimming it once the card has been inserted. Communication to the ATM's central processing unit is also encrypted to prevent the capture of a card's track data.

But challenges remain. "It's not hard for criminals to find the components they need to build a

skimming device online, because by themselves, those components are not illegal to sell," says Diebold Nixdorf's Castro. "Even with an EMV-compliant ATM, financial institutions still need to take further steps to prevent skimming."

One issue with anti-skimming upgrades, says FlintLoc's DeWitt, is that ATM makers have driven the cost of their machines down so low the price of an anti-skimming upgrade doesn't make economic sense. "Security upgrades for ATMs can be an issue," he adds.

## 'MOVING INLAND'

Regardless whether ATM deployers or merchants spring for the cost of EMV readers or anti-skimming upgrades, payment experts recommend regular equipment inspections to spot signs of tampering. They also recommended photos be taken of the equipment prior to the start of inspections to establish a

baseline. In addition, staff should be trained to identify skimming and shimming devices.

Other best practices include performing background checks on staff. Many merchants have staff that work in cahoots with criminals or look the other way when a skimming device is being installed, payment experts say.

While merchants and ATM deployers provide the frontline defense against skimming, processors need to be on the lookout, too. Examining ATM activity can reveal patterns of potential fraud, such as large ATM withdrawals. It is not uncommon for skimmers to come back and empty an ATM using a counterfeit card they created after inserting a skimming device into that ATM, says Trace Fooshee, a senior analyst with Aite Group.

"ATM deployers should also take note if cardholders complain it's difficult to insert their card. That can be indication a shimmer has been inserted in the card reader," Fooshee says.

If nothing else, stakeholders on the back end of the payments industry need to continue to educate merchants and ATM deployers about the exposure they have to skimmers if they continue to remain non-compliant with EMV.

"Skimming fraud is moving inland from the urban coastal regions that have been a hotbed of fraud to more rural areas, where merchants think they are the safe from this type [of] fraud," says Toth of Conexxus. "Criminals aren't going to find a new career as EMV continues to roll out. They are going to follow the path of least resistance." DT



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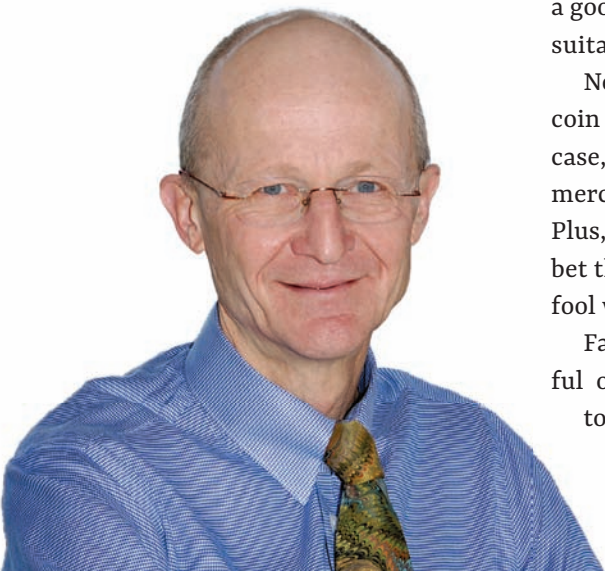
# endpoint

## LIBRA YES. BITCOIN NO

Bitcoin has floundered because it serves no real need. The story with Libra is far different.

BY ERIC GROVER

Eric Grover is principal at Intrepid Ventures, Minden, Nev.



**WHILE BITCOIN AND LIBRA** are both currencies and payment systems, their potentials are vastly different. From its inception, Bitcoin evangelists enthused it would upend reigning fiat currencies and electronic-payment systems. A high-octane cocktail of libertarian ideology, entrepreneurial zeal, greed, and abundant capital fueled a crusade of Bitcoin ventures.

The much-hyped, putatively disruptive Bitcoin, however, was never fit for purpose. It performed badly, was highly volatile, lacked institutional governance, and never achieved—or had a plausible path to achieving—network critical mass. The head of the Bank of International Settlements, Agustín Carstens, declared cryptocurrencies “are not money ... They are neither a good means of payment, nor a good unit of account, nor are they suitable as a store of value.”

Nor, in major markets, did Bitcoin ever have a compelling use case, save facilitating illicit commerce and evading capital controls. Plus, it did serve as a speculative bet there would always be a greater fool willing to pay more tomorrow.

Facebook designed Libra mindful of Bitcoin’s shortcomings and to refute Carstens’s criticism. As a stablecoin tied to fiat currencies and securities to

minimize volatility, it’s architected to perform better. It has association governance to allay fears of control by the social-media Gargantua. And it emulates the open model Mastercard and Visa employed so successfully to build global networks.

Notwithstanding Libra’s independent governance, its backing by the dollar and other fiat currencies rather than gold, and its wrapping with financial-inclusion pieties, governments are alarmed.

The G7 Working Group on Stablecoins warned Libra “could pose challenges and risks to: monetary policy, financial stability, the international monetary system, (and) fair competition.”

The Swiss Financial Market Supervisory Authority said “the planned international scope of the (Libra) project requires an internationally coordinated approach.” That’s likely to stymie genuine money-and-payments innovation.

An October House Financial Services Committee hearing, “An Examination of Facebook and Its Impact on the Financial Services and Housing Sectors,” underscored Washington’s hostility to Libra. Chairwoman Maxine Waters worried the social-media titan’s stablecoin would be a “global digital currency that would challenge the U.S. dollar.” Governments enjoy and

ruthlessly protect their currency monopolies.

Congresswoman Carolyn Maloney demanded Facebook chief executive Mark Zuckerberg pledge not to launch Libra unless and until the Fed, FDIC, OCC, SEC, CFTC, CFPB, Fincen, and FHA have given all necessary approvals. He agreed.

Zuckerberg can commit Facebook to running Washington's regulatory gauntlet before launch. Presumably, however, he can't commit the Swiss Libra association.

Congresswoman Ann Wagner asked why PayPal, Visa, Mastercard, Stripe, Mercadopago, eBay, and Booking Holdings bailed on Libra. PayU is the only payments firm still in. The political heat is one reason. Also, for the payment networks, Libra could be a formidable competitor.

Congresswoman Nydia Velázquez worried Libra might "break the monetary system." She demanded it hold off until Congress establishes a legal framework. Facebook's chief politely refused.

The fiercest inquisitor, Congressman Brad Sherman, tarred Zuck-

erberg as "the richest man in the world" (he's not) and accused him of hiding behind the poor and "trying to help drug dealers, terrorists, and tax evaders."

With Facebook's 2.4 billion users and its resources, it could incent use on its platform, then in adjacent e-commerce and at the physical point of sale. That would spur efforts by other association members. Consequently, Libra's potentially far more viable, and more threatening, than Bitcoin and several thousand other cryptocurrencies extant.

But not yet in the United States. The dollar is the world's reserve and a relatively hard fiat currency. Electronic-payment systems work well, have critical mass, and are habitual.

In much of the Third World however, fiat currencies are horribly debased. Venezuelan inflation crested at over a million percent. And electronic-payment systems don't have critical mass. Libra could launch in more hospitable and promising markets with

weaker national currencies and electronic-payment systems.

Zuckerberg and Libra point man David Marcus would do well to take a cue from Geoffrey Moore's seminal "Crossing the Chasm." Moore observes successful breakthrough technologies penetrate and dominate mainstream markets not by challenging incumbents head-on, but rather by first focusing on and winning early adopters.

Self-interest and competition ensure value. In "Denationalisation of Money: The Argument Refined," Nobel-Prize-winning economist Friedrich Hayek contended competing currencies ensure good money, and that good money can only come from self-interest, not government benevolence.

There's already a modicum of competition among fiat currencies. The dollar circulates in Ecuador, Panama, and Zimbabwe. Hong Kong and Bermuda employ dollar-based currency boards. Competition from a credible global stablecoin would check governments' abuse of their currency monopolies and force private payment systems to up their games.

Bitcoin isn't going to achieve relevance, much less disrupt fiat currencies or major electronic payment systems. But if Facebook and the Libra Association's members put their shoulders behind the Zuck buck, initially in select markets ripe for a better currency and payment system, they could find a path ultimately to planetwide consequence. Waiting for Washington's imprimatur would defer, perhaps indefinitely, serving real and needy markets.

Messieurs Zuckerberg and Marcus, damn the torpedoes! **DT**

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