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Trends in the Electronic Exchange of Value

THE CRISIS IN AUTHENTICATION

PINs are past their prime. Signatures? Forget it. With criminals increasingly on the prowl, much more robust technology is needed. The good news is such tech is available. But will consumers tolerate it?

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THERE IS, PERHAPS, NO SUBJECT in the digital-payments world more fraught with urgency these days than that of authentication. After all, just about all players in the payments chain, from merchant to service provider to processor to bank, have a huge stake in making sure the customer performing the transaction is the rightful user. Yet, the aim of establishing identity accurately, with little disturbance to the customer, and at small expense to the merchant, has proven to be an elusive goal.

Thieves have accessed so much credential information via such means as data breaches and phishing exploits that older authentication methods are rapidly proving ineffective. Our cover story this month, “The Crisis in Authentication,” outlines how one technology has superseded another in the search for the elusive defense. PINs, once said to be a sure-fire improvement on signatures at the point of sale, are now giving way to yet newer methods, such as facial recognition, fingerprint ID, and other biometric techniques.

Online, this search has yielded technologies that open channels of communication between issuers and merchants during the transaction in an effort to establish that the user at the other end of the string is the genuine article. Here, the stakes are huge. Cyberthieves can hide behind fake credentials at a far remove from the sellers they are conning. And, thanks to breaches such as the huge Equifax break-in in 2017, a rich harvest of real credentials is on offer on the aptly named Dark Web.

Nor is the problem of authentication anything new. *Digital Transactions* wrote about the problem of establishing identity some 15 years ago in a cover story called “Behind the ID Buzz.” Even then, ambitious technologists were developing fingerprint sensors for grocery stores and sussing out methods to defeat online malefactors. Even then, experts were advocating so-called two-factor authentication, combining something people had, such as a card or other token, with something they knew (a password or PIN) or something they were (a fingerprint, or even an iris pattern in their eye).

It’s discouraging that, all these years later, the problem persists. Back then, thieves fueled their dark ambitions with phishing exploits. They still do, but now they’re harvesting data by the boatload via seemingly endless breaches. And newer technologies, such as bots, prowl the Web in search of usable identities.

Still, as our story this month points out, multifactor authentication remains the key to establishing identity and defeating fraudsters. The crisis in authentication will ultimately be solved. But it will take steady and persistent efforts to create systems that combine valid credentials with streamlined routines that satisfy the demands of both consumers and merchants.

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VISA'S CROSS-BORDER GAMBITS

Visa Inc. is working fast to expand its foothold in cross-border remittances, a relatively new market for the card network. Last month, MoneyGram International Inc. announced it is the first remittance service to allow international transfers that rely on Visa Direct, a push-payment service that enables real-time transfers to holders of Visa-branded debit cards.

The new service, which has been available within the United States since September, is starting with transfers to Spain and the Philippines.

Visa has made the cross-border payments market a top priority. MoneyGram's expansion of Visa Direct service overseas follows an announcement in June that Visa would develop a similar arrangement with The Western Union Co. And in May, the card company laid out \$320.4 million to buy Earthport PLC, a London-based remittance firm, after besting Mastercard Inc. in an intense bidding war.

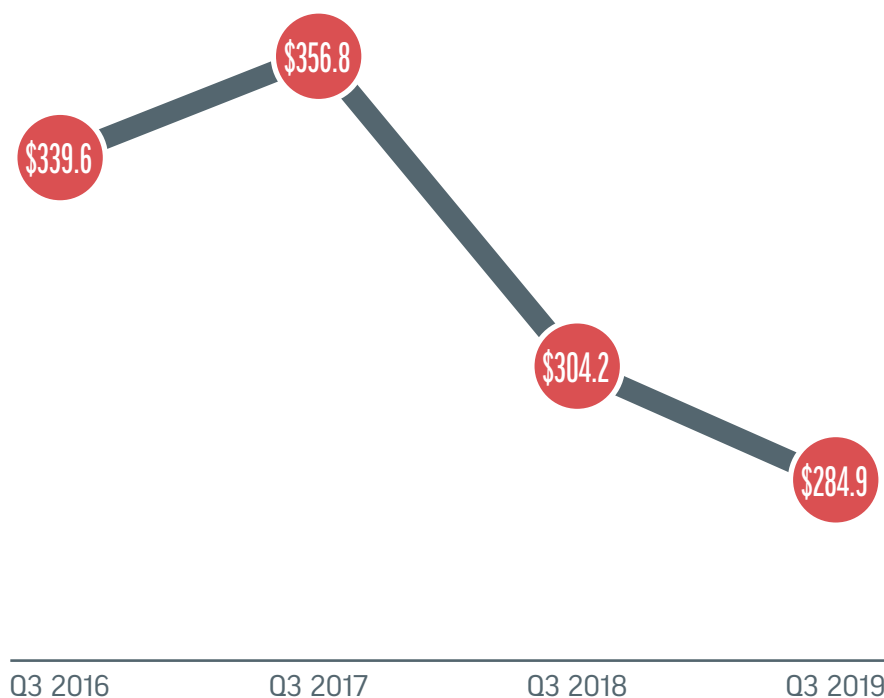
Now, with transfers available via Visa Direct to two overseas countries, Visa and MoneyGram plan more international destinations in the months to come, the

companies said. MoneyGram could use the help. Money-transfer revenue has been shrinking in recent years (chart). "Cross-border digital growth is a key strategic priority," said Alex Holmes, chief executive of Dallas-based MoneyGram, in a statement about the new service.

"We are committed to supporting the best possible cross-border money-transfer experience for consumers and businesses around the world," said Bill Sheley, a Visa senior vice president and global head of Visa Direct, in a statement. "The initial launch phase with MoneyGram has been a success.

UP AND DOWN

(MoneyGram's money-transfer revenue, in millions)



Source: MoneyGram quarterly earnings reports

Based on customer feedback to date and seamless integration of Visa Direct into MoneyGram's digital network, we look forward to continuing the rapid expansion of this service to new markets worldwide."

The MoneyGram service allows senders in the United States to use the remittance company's Web site or app to send money. Visa claims more than 1 billion cards worldwide are eligible for such transfers, though information was not immediately available how many of these are in Spain and the Philippines.

With the start of the Visa Direct service, MoneyGram is charging \$1.99 per transaction to both countries. This does not cover foreign-exchange costs, which can be substantial. "The most expensive piece is the foreign-exchange piece," notes Sarah Grotta, an analyst at Mercator Advisory Group, a Marlborough, Mass.-based consulting and research firm.

International transfers clearly represent a big opportunity for both Visa and Mastercard, whose rival service is called Mastercard Send. "Both Visa and Mastercard have been building out their global push-payments [services] for a while," says Grotta, in an effort to capitalize on demand for faster payments in markets that have historically relied on non-digital networks.

Visa Direct and Mastercard Send rely on a technique called the original credit transaction, which was developed by the networks originally to handle refunds to customers by reversing the usual flow of funds through the networks so money moved from store to cardholder.

—John Stewart

A NEW VERSION OF PKI IS COMING

A new set of security protocols to better safeguard online connections within the financial-services industry is in the offing.

Securing and trusting these connections is a critical piece of the payments infrastructure. Experts say the underlying standards they are built on—called public key infrastructure—need updating.

That's why the Accredited Standards Committee X9 Inc., a nonprofit that develops standards for the financial-services industry, is reactivating a working group called X9F5 to create new PKI standards based on current uses within the industry. Without these standards and the assurances they provide, online commerce and financial transactions would be much more difficult to trust.

"Every day, a significant fraction of the world's population uses a Web browser to access a Web page on a

Web server," Tim Hollebeek, industry and standards technical strategist at DigiCert Inc., which issues digital certificates, and interim X9F5 chairman, tells *Digital Transactions* in an email. "At the same time, the vast majority of their financial transactions are being transmitted on server-to-server communications between banks and other financial institutions."

This means there needs to be a distinction in PKI for the two connection types. The same technologies—PKIs, digital certificates, Transport Layer Security, and so on—"have a long history of being used both to protect high-value connections between payment companies and banks, and Web connections between Web sites and users," Hollebeek says.

A real-world example of the situation is that when X9 tried to

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retire the outdated SHA-1 hash function—a cryptographic tool that was often used in Web browsers—the organization found it was used by a large number of payment terminals around the world. “It would have been much easier if each community could have come up with its own requirements and transition plan,” Hollebeek says.

The caveat, however, is that the security requirements for these two scenarios are fundamentally different, and it has become clear over the past five years or so that attempting to meet both sets of requirements with the same PKI leads to adverse consequences for all parties, Hollebeek says.

Financial institutions carefully authenticate the exact legal identity of each party they do business with, and they put mechanisms in place to guarantee they can reliably authenticate that entity for each transaction, he says. “The Web, on the other hand, is a much more dynamic place that is designed to be open to everyone, no matter how small.”

Today, there’s no reason for the same PKI standards to undergird both use cases, he says. “There are legitimate reasons why the same certificate hierarchies were re-used in the past, but as both PKIs have matured, it would be best if they went their separate ways so that they can independently meet their own goals.”

This type of technical work will proceed faster with the assistance of industry experts, Hollebeek says. “There’s a lot to be done in order to get this off the ground, but given the importance of this problem, we’re confident we can get it done quickly if everyone works together.”

—Kevin Woodward

AS VALUATIONS SOAR, SHIFT4 FILES FOR AN IPO

Shift4 Payments Inc., one of the nation’s biggest independent sales organizations, announced last month that it has filed a draft registration statement with the U.S. Securities and Exchange Commission for what it calls a “proposed” public offering.

A Shift4 spokesman did not return a call from *Digital Transactions* seeking comment on the move, but the 20-year-old, Allentown, Pa.-based company’s announcement comes as valuations for publicly held processors and ISOs are soaring, according to recently released data.

The filing has been “confidentially” submitted, according to the announcement, which adds that “the number of shares to be offered and the price range for the proposed offering have not yet been determined.”

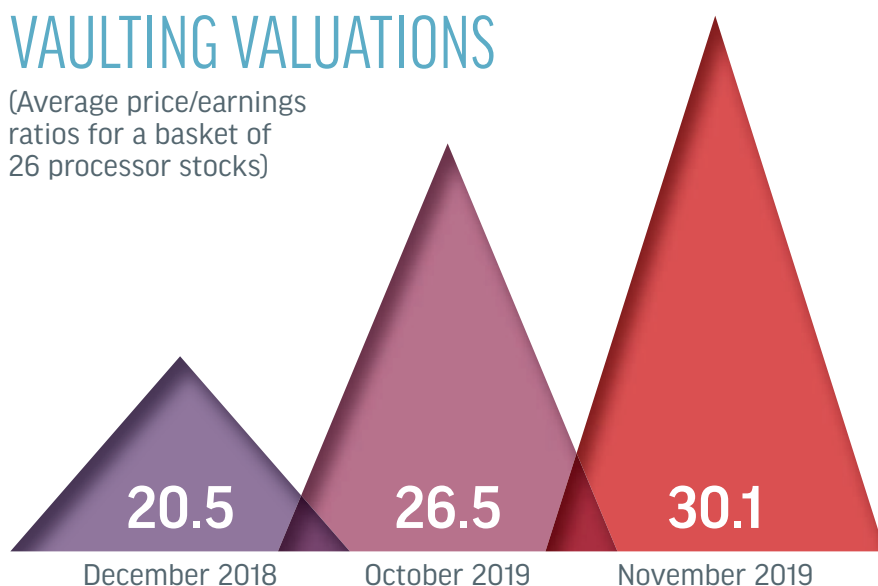
Shift4 expects the IPO to start after an SEC review, “subject to market and other conditions.” But the company’s press release on the matter warns that “there is no assurance that the initial public offering will be completed.”

With the IPO, Shift4 would become the latest ISO to tap the public markets and will join a group of related companies whose shares have been climbing rapidly. One relatively recent example is Atlanta-based EVO Payments Inc., which went public in May 2018. The company, which maintains a substantial European business, boasts a valuation that is now nearly 46 times its earnings, according to the a recent report from Barrington Research.

Indeed, the firm’s analysis of a basket of 26 public payments-company stocks yields an overall price-to-earnings ratio of 30.1 as

VAULTING VALUATIONS

(Average price/earnings ratios for a basket of 26 processor stocks)



Note: At month end. Source: Barrington Research

of Nov. 29, up from 26.5 at the end of October (chart, page 8). The list includes companies like EVO but also card networks, processors, and technology providers.

“The group has had a fantastic run,” says Gary Prestopino, managing director at Chicago-based Barrington Research. “Valuations in the [processor] market are very generous right now. It’s an advantageous time to take a company public.”

Much of the reason for this, he adds, is tied up with the processor business model. “Investors have an appetite for high recurring-revenue businesses,” he says.

According to numbers from Shift4, the company processes more than 3.7 billion transactions annually for more than 225,000 mer-

‘Investors have an appetite for high recurring-revenue businesses.’

—GARY PRESTOPINO, MANAGING DIRECTOR, BARRINGTON RESEARCH

chants. Annual payment volume totals more than \$200 billion. It maintains offices in Europe as well as the United States.

The company has had an eventful history operating under various names. It started out as United Bank Card Inc., and long maintained its headquarters in New Jersey. It first won notoriety in 2004 with an offer of free point-of-sale terminals to merchants using its services. In 2011, the company moved to Allentown and changed its name the following year to Harbortouch,

taking the brand of its POS system.

In 2017, it established a parent company called Lighthouse Network, which in turn became Shift4 in 2018 after the company acquired Shift4 Corp., a payment gateway based in Las Vegas.

The company, which has concentrated in the hospitality market in recent years, boasts such brands as Arby’s, Blimpie, Carrabba’s, KFC, and Outback Steakhouse among its clients. It works with more than 300 software companies.

—John Stewart

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CANADIANS LIKE CONTACTLESS. WHAT ABOUT MOBILE?

Like their American cousins, Canadians are rapidly adopting newer payment methods. In fact, they're doing so even faster than U.S. consumers in some respects.

The report, "Canadian Payment Methods and Trends: 2019," released last month by Payments Canada, says contactless payments grew 30% year-over-year in 2018. Card- and mobile-based contactless transactions totaled 4.12 billion with a value of C\$129.9 billion at the point of sale. Debit payments represented nearly 60% of contactless volume, often as substitutes for cash.

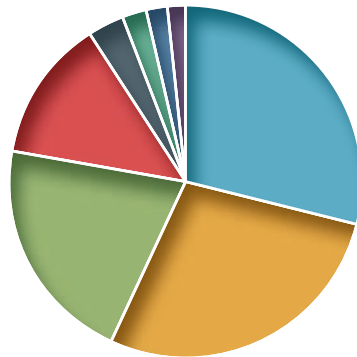
Also on the contactless front, nearly 35% of Canadians used smart phones or other mobile devices on a regular basis for payments in 2018, but usage still lags that of contactless cards.

"Concerns about security remain the key barrier of usage, with less than a third of consumers expressing their belief that mobile payments are safe and secure," Ottawa-based Payments Canada said in a news release. Payments Canada oversees the country's settlement and clearing systems.

In the United States, contactless payments are still a small fraction of purchase volume, though industry executives expect them to increase rapidly as banks crank out new EMV chip cards of the dual-interface variety that support both contact and contactless payments, the latter through near-field communication technology.

SHARE OF CANADIAN PAYMENT TRANSACTIONS

(Portion of 21.1 billion total transactions)



	Share	5-Year Change
Debit card	29.0%	29%
Credit card	28.0%	52%
Cash	21.0%	-40%
EFT	13.0%	21%
Checks/paper instruments	3.2%	-29%
ABMs	2.4%	-40%
Online transfers	2.0%	573%
Prepaid cards	1.4%	74%

Source: Payments Canada

Visa recently reported that 100 million Visa-branded contactless cards have now been issued in the United States, and the network expects 300 million to be circulating in a year. Canadian issuers added contactless capability to their cards earlier than their U.S. counterparts, and merchant acquirers did likewise in activating contactless-accepting POS terminals.

With contactless payments mushrooming, Canadians seem to be abandoning cash even faster than Americans. A new Federal Reserve Banks report says debit cards in 2018 for the first time surpassed cash as the most-used payment type.

But Payments Canada says debit card transactions overtook cash transactions at the point of sale in 2016, and POS credit card transactions surpassed cash in 2017. All debit transactions—POS, card on file, contactless, and online—exceeded all cash transactions in 2017.

Cash payments have declined by 40% in five years, the report says. Cash represented 26% of total Canadian POS payment volume last year, down from 44% in 2013.

Debit card transactions grew 4% year-over-year in 2018 to represent 38% of POS volume, up from 31% in 2013. Debit's dollar volume also rose 4%. Prepaid card transactions jumped 9%, with value up 10%, though prepaid cards still account for only 0.2% of total payment value.

Credit card transactions increased 5% and accounted for 34% of POS volume, and their value rose 4%. Payments Canada says Canada trails only South Korea in credit card volume per capita.

Payments Canada obtained data for the report from the country's Automated Clearing and Settlement System, which it operates, as well from external payment-services operators, market research, and input from industry experts.

—Jim Daly

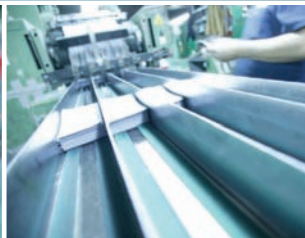
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BofA BEEFS UP ITS AI GAME

Bank of America Corp. soon will enhance Erica, its popular digital financial assistant powered by artificial intelligence, with two new features—one to make its credit and debit card holders aware of which merchants might be storing their card numbers, and another that will issue alerts about possible duplicate charges.

The Charlotte, N.C.-based mega-bank announced the new features last month at the same time it revealed that Erica, launched just 19 months ago, now has more than 10 million users and is on track to complete 100 million client requests in the coming weeks.

The service functions within BoA's mobile app and is accessible by text, voice, or taps with gestures. Erica provides nuts-and-bolts banking information such as balances, but also enables customers to track spending, manage their

BANK OF AMERICA DIGITAL METRICS

	Q3 2019	Q3 2018	Change
Active Mobile-Banking Users (millions)	28.7	26.0	10.4%
Mobile-Banking Sessions (billions)	1.55	1.37	13.1%
Erica Users (millions)	9.0	3.4	164.7%

Source: Bank of America Corp.

Zelle person-to-person payments, get bill reminders, dispute credit card charges, and obtain other information.

Up next is what BofA calls “New Card Merchant List Assistance.” After the customer receives a replacement debit or credit card, “Erica will proactively provide clients a list of merchants and subscription services where their card information may be stored, making updates easier,” BofA said in a news release. “Clients can also ask Erica for a list of companies that have their card on file at any time.”

Also in the dock is “Duplicate Merchant Charges Insight.” Erica will alert customers when they might have been charged more than once for a purchase on the assumption they’ll want to take immediate action. The service will then guide them through the dispute-filing process, if needed.

BofA expects both enhancements to go live early this year. Another new Erica feature will keep customers informed of their progress if they participate in the bank’s Preferred Rewards program.

“Erica is ushering in a new era of personalized banking and providing our clients never-before-possible convenience,” David Tyrie, head of advanced solutions and digital banking at BofA, said in a statement. “Our high-tech capabilities together with our high-touch approach deliver a more intuitive and efficient banking experience for our clients across all channels.”

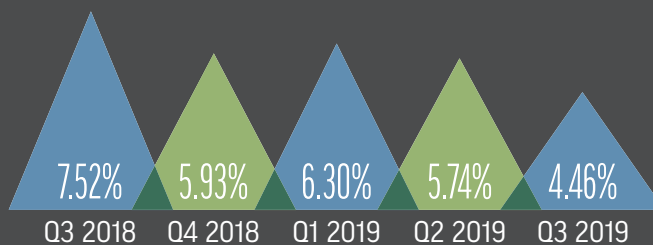
BoA said 60% or more of its customers in 17 major cities are actively using its mobile app, and that it has 29 million mobile-banking customers. Memphis, at 65%, and Nashville, at 64%, in Tennessee lead the pack. **DT**

—Jim Daly

MONTHLY MERCHANT METRIC

Growth in Same-Store Sales Year Over Year

Annual volume change/growth of retained (non-attributed) accounts for given period divided by total portfolio volume 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.

IT'S TIME FOR CIVIC CURRENCY

THE STEAM ENGINE, the telephone, and the Internet are all innovations that gestated for a long time before realizing their eventual impact. Digital currency appears to be joining this list. Much as the telephone was more than a “Yankee replacement to errand boys,” in the words of a dismissive British lord, so digital money is more than a functional replacement for legacy payment.

While the exact shape of this new form of money is still an issue of fierce debate and lively competition, the horizon-bound among us are busy with what can be done with digital money, not how we can easily live without it. I dedicate this column to one such proposition, which may be realized faster than expected.

The target of this proposition is “loose float.” That’s the interest accumulated on spending-ready money that is now claimed by the banks from our checking accounts. Increasingly, it’s also going to the countless payments companies that hold on to our money while its value lights up our phone screens. With the average balance in a U.S. checking account coming to about \$3,000, this loose float tallies between a quarter and a half a trillion dollars, depending on its definition. And its benefits don’t flow to the owner of the account.

Now, imagine this. You write a check for \$3,000 to something



BY **GIDEON SAMID**
gideon@bitmint.com

called The Civic Currency foundation. In return, you receive digital claim check denominated for exactly the same amount. These claim checks are redeemable at face value without restriction from the moment of issuance. It is this unrestricted redeemability that renders these digital claim checks de facto money, which means you could honor a \$100 invoice with \$100 worth of civic currency claim checks.

Why would the payee accept them? For one, they are redeemable for cash at face value, right away (and without interchange fees!). For two, and here comes the kicker, by accepting these claim checks, the payee does its share to support a universally recognized, noble civic cause.

How is that? Here comes the other side of the story. The Civic Currency Foundation puts all the money it collects from the public in an interest-bearing account managed by a reputable investment bank. The accumulated interest is used first to fund the operations of the foundation (that is how the claim checks are cash-redeemable at par), and then the

balance is passed on to St. Jude Children’s Research Hospital, Direct Relief, and other universally acclaimed charities.

Merchants will take your claim checks in lieu of a costly credit card transaction to (i) bypass the card networks, and (ii) do their share for the civic cause in favor of which the cash behind the claim checks is bearing interest. And the people who present you with their bills and invoices will likewise be pressed by the same moral imperative to take your claim checks (even if they plan to right away redeem them).

Unlike normal charitable contributions, the civic-currency claim checks do not empty your wallet. You actually don’t “suffer” financially because you do with the claim check what you could have done with the cash. So who pays, then? The various payment apps and the service banks, who pocket that very same interest today.

With BitMint technology, the same platform will be used to pass regular dollars as well as civic-currency dollars, using tethered-money protocols (for more on this, see my book, *Tethered Money*). Flowing in parallel, the share of civic-currency payment will steadily grow, propelled by its universal moral force and by its side-effect, relief from network inertia.

To learn more, write to me at the address under my byline. **DT**

WE ARE ALL PREPAID NOW

A FIGHT IS BREWING over the future of mobile wallets.

On one side is the Consumer Financial Protection Bureau, which believes that the heart of every mobile wallet is a prepaid card.

On the other is PayPal, which believes that mobile wallets are so different that they should not be covered by the Bureau's 1,600-page prepaid rule. Hanging in the balance are current products like Apple Pay and GPay, and future products like Facebook's Calibra.

The Bureau recognized that prepaid platforms have driven recent payments innovation when it wrote its expansive Prepaid Accounts rule.

So, the Bureau said prepaid accounts are those "whose primary function is to conduct transactions with multiple, unaffiliated merchants for goods or services, or at automated teller machines, or to conduct person-to-person transfers." It did exclude traditional checking accounts.

Venmo (owned by PayPal), as a peer-to-peer payment product, fits cleanly into the definition. It also stores funds that can be used at multiple, unaffiliated merchants through their apps. Anyone signing up for a Venmo account will see the disclosures that the Bureau mandates for prepaid accounts.

In its lawsuit, PayPal argues that digital wallets are fundamentally different from general-purpose reloadable prepaid cards because,



BY **BEN JACKSON**

bjackson@ipa.org

even though the wallets can store money, consumers can use them without storing funds in them by linking other payment credentials.

With this argument, PayPal seems to be relying on the notion articulated by the Bureau that the "primary function" of a digital wallet is not a prepaid one. However, in its commentary on the rule, the Bureau says:

"The Bureau continues to believe that digital wallets that can hold funds operate in large part in a similar manner to physical or online prepaid accounts—a consumer can load funds into the account, spend the funds at multiple, unaffiliated merchants (or conduct P2P transfers), and reload the account once the funds are depleted. Accordingly, the Bureau believes that consumers who transact using digital wallets deserve the same protections as consumers who use other prepaid accounts."

Unfortunately for PayPal, this may eliminate room for a "primary-function" argument that the rule doesn't apply.

But what about mobile wallets like Apple Pay and GPay (Google)? Are they "prepaid accounts?"

Well, Apple Pay fits the definition. According to its site, the

wallet can receive funds from other people, hold funds, and be used at multiple, unaffiliated merchants. The Apple Cash Card is provided by Green Dot Bank, and its disclosures follow the Bureau's prepaid model.

But here's where things get interesting. Green Dot offers both prepaid and traditional bank accounts, so why not just offer a checking account? In its discussion of the rule, the Bureau says that account structure is not a definitive factor: "[The] Bureau believes that the characteristics that make an account a prepaid account should not be dependent on the product's back-office infrastructure."

Another example is GPay, which, I have been assured in informal conversations, is not subject to the Prepaid Accounts Rule. While GPay does not store funds for making payments, it provides P2P services and stores those funds until the user moves them.

P2P transfer is only one function offered by GPay, which holds other payment credentials for shopping. So, GPay also might claim an exemption because its "primary" purpose is not P2P transfers.

The outcome of this lawsuit will determine Google's ability to make that claim, along with many others. Clearly, and regardless of how it turns out, PayPal's challenge to the CFPB has begun a high-stakes play. DT



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MOBILE DEVICES CONNECT WITH CONTACTLESS

A new PCI standard for using off-the-shelf mobile phones and tablets to accept tap-and-go payments should open the door for more contactless transactions. How much more is another question.

BY JIM DALY

IT'S THE ULTIMATE CONVENIENCE for a harried merchant: just whip out a regular smart phone or tablet and ask the customer to pass her contactless credit or debit card in front of it. No swipe, dip, PIN, or signature needed. Instantly, there's a ding, and, voilà, transaction done.

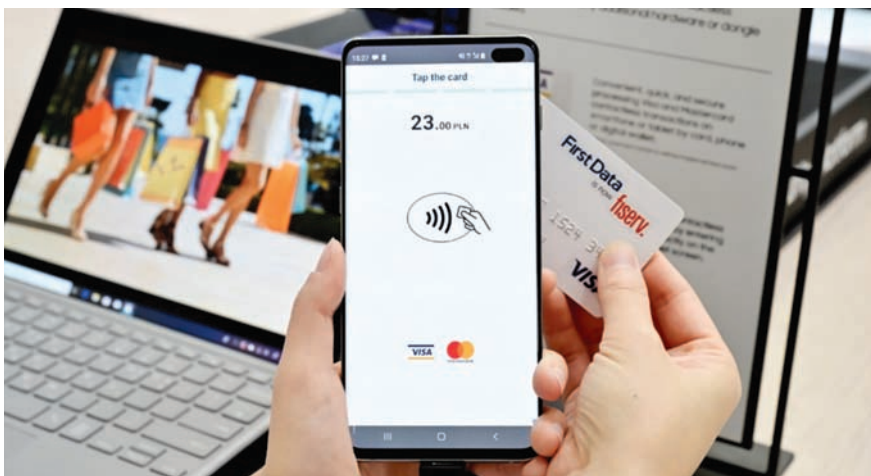
That scenario isn't appropriate for all merchants. But a new standard released last month by the PCI Security Standards Council could pave the way for more acceptance of contactless payments with no more hardware needed than a merchant's off-the-shelf mobile phone or tablet equipped with near-field

communication technology. The only other thing the merchant would need would be a PCI-approved processing application on the device.

The standard is dubbed Contactless Payments on COTS (for commercial off-the shelf devices), or CPoC. It spells out security requirements governing applications that enable a mobile device to accept payments from customers using contactless-enabled EMV chip cards, smart phones, or wearables. Under development since June 2018, CPoC includes a program for vendors to get their payment applications tested and validated.

CPoC applies to NFC-based contactless payments in which the off-the-shelf phone or tablet does not use hardware such as a card-reading dongle. The Wakefield, Mass.-based PCI Council, which sets industry-wide rules for secure acceptance of general-purpose credit and debit cards, years ago introduced a set of rules for contactless payments with purpose-built payment devices called the PCI PIN Transaction Security Point of Interaction (PCI PTS POI) Standard.

In addition, vendors already provide secure software-based PIN entry on COTS (SPoC) applications



(photo: Samsung)

Samsung, along with processor Fiserv Inc. and Visa, demonstrated a contactless-acceptance system for its Samsung Pay mobile-payments service at a September technology conference in Berlin.

that require a dongle and enable customers to enter a PIN on a merchant's mobile device. The new CPoC standard does not permit software-based PIN entry and is meant for tap-and-go payments.

'LITTLE SQUIGGLY THING'

While contactless has only an estimated single-digit share of U.S. card payments, tap-and-go is expected to grow fast as issuers begin to crank out dual-interface EMV chip cards. These cards not only can be dipped into a point-of-sale terminal, as most EMV cards function today, but also tapped because they have an antenna for NFC contactless transactions.

Visa Inc. said there were 100 million contactless-enabled Visa cards floating around the U.S. in late 2019, and the network expects 300 million by the end of this year.

Meanwhile, 84.5% of U.S. adults now have a smart phone, according to Marlborough, Mass.-based research firm Mercator Advisory Group Inc. And the vast majority of smart phones today come with NFC, says Peter Reville, director of primary research services at Mercator.

The dominance of smart phones is helping the NFC-based Apple Pay, Google Pay, and Samsung Pay mobile-payment services to finally gain some traction years after their introduction. And wearables are getting into the NFC payments act with the spread of Apple Inc.'s Watch and wristbands and other devices from FitBit and other manufacturers.

"The PCI CPoC initiative is part of the Council's mission to enhance global payment-account data security by developing standards and

programs that support secure payment acceptance in new and emerging payment channels," the PCI Council said in a blog post. "Ultimately, the PCI CPoC standard and program will lead to more options for merchants to accept contactless payments in a secure manner."

Ron van Wezel, a Netherlands-based senior analyst for Boston-based research firm Aite Group LLC, says Visa and Mastercard Inc. have tested NFC payments on COTS devices in the United Kingdom and Poland.

"This is the next step in the evolution to what I call 'SoftPOS'—



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payment-acceptance solutions at the point of sale that are entirely software-based,” van Wezel says by email. “Merchants would simply download an application to start accepting card payments.”

That end point, however, has not yet been reached.

“The new PCI standard does not allow for PIN entry on the COTS,” he says. “This means that contactless card acceptance on such devices is only possible for low-value payments under the contactless limit.”

In Europe, that limit currently is €25 (\$27.73). But Apple Pay or Google Pay mobile payments can be used for any value because they use biometric cardholder verification, he notes.

So while the new PCI standard is good news for backers of contactless payments, it alone will not spur a massive expansion of tap-and-go, according to some observers. Critical to contactless growth is merchant and consumer education, says Mercator’s Reville, noting that too few consumers and store clerks know what the radio-wave symbol that identifies a contactless EMV terminal or card means.

“Just because you have that little squiggly thing on your card, do people know it,” he wonders. “They just don’t know.”

NO CONTACTLESS TSUNAMI

Merchant processor Square Inc. launched a decade ago by catering to part-time sellers and tiny merchants ignored by most independent sales organizations and big merchant acquirers. Those small businesses today account for a declining share of Square’s payment volume as the company



‘The whole question around this is execution.’

—PATRICIA HEWITT, PAYMENTS CONSULTANT, PG RESEARCH & ADVISORY SERVICES

moves up-market, but there are still plenty of them.

And presumably a good number might be interested taking payments in accordance with the CPoC standard. Square declined comment for this story, however.

Payments consultant Patricia Hewitt, chief executive of Savannah, Ga.-based PG Research & Advisory Services, believes the new PCI CPoC standard “will lift some boats” in merchant adoption of contactless payments, particularly among very small businesses, in-house sellers, on-the-road salespeople and the like.

But she doesn’t predict a contactless tsunami. Beyond the placement, certification, and activation of contactless-accepting terminals, an important issue is reliable performance.

“The whole question around this is execution,” Hewitt says, adding that clerks too often have to tell customers the contactless function sometimes works and sometimes doesn’t. “That tends to suppress adoption.”

In the U.S., mass transit, a merchant category characterized by low-value payments but a pressing need for transaction speed, has emerged as the highest-profile venue for tap-and-go. But this category isn’t affected by the CPoC standard.

The New York City area’s Metropolitan Transportation Authority in early December activated 96 contactless card readers in Manhattan’s Penn Station, one of the

nation’s busiest transit hubs. It’s part of the MTA’s quest to accept contactless payment cards and mobile-payment apps for fares across all of its vast subway and bus system by the end of 2020.

The MTA reported it had recently surpassed 4 million taps after beginning acceptance of contactless payments at limited locations in late May. By the end of December, all MTA-operated buses on Staten Island, two Staten Island Railway stations, and 85 of the MTA’s 472 subway stations were to have tap-and-go fare readers.

The contactless effort is part of the MTA’s OMNY project, which enables riders to pay fares with major-brand contactless credit and debit cards as well as Apple Pay, Google Pay, Samsung Pay, and FitBit Pay. In addition, OMNY will have its own virtual card and a physical contactless card set to launch in 2021. OMNY is replacing the MTA’s magnetic-stripe-based MetroCard, which debuted in 1994.

Still, some major payments players are optimistic CPoC will play an important role in developing part of the contactless-payment market.

“The PCI CPoC standard is expected to spur innovations to offer merchants more choice in contactless acceptance options, and reduce barriers to payment card acceptance, particularly in the smaller merchant community,” Linda Kirkpatrick, Mastercard’s executive vice president, U.S. merchants and acceptance, tells *Digital Transactions* by email. DT

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THE CRISIS IN AUTHENTICATION

PINs are past their prime. Signatures? Forget it. With criminals increasingly on the prowl, much more robust technology is needed. The good news is such tech is available. But will consumers tolerate it?

BY KEVIN WOODWARD



Despite a now almost 3-year-old decision by the four major U.S. card brands to make signatures optional for many of their transactions, the signature persists at the point of sale. It's a habit—for consumers and merchants—even though its value in ensuring the authorized cardholder is the individual making the transaction decreases each day.

The days of simple authentication tools are limited, especially when they are the only ones being used. In today's increasingly digital world of payments, a signature or PIN is being relegated to lesser roles. As more companies develop ways to better identify individuals, authentication is adopting a more digitized stance, just as payments are.

In 2018, 40% of retail executives surveyed by the National Retail Federation said they had already dropped signature requirements for payment card transactions or planned to do so by year's end. Another 13% anticipated doing so in 2019. All four major U.S. card brands announced in 2017 they would make signatures optional for many transactions.

"Signature is not an effective form of customer verification and it [is] hard to see its utility moving

forward," says Nandan Sheth, senior vice president of global digital commerce at Fiserv Inc., the Brookfield, Wis.-based core processor that bought First Data Corp. in 2019. "PIN, on the other hand, has several effective use cases as it relates to debit, or even transactions like EBT."

Fiserv is the parent company of the Accel electronic funds transfer network and, via First Data, operates the Star debit network.

Even when signature is combined with the vaunted EMV card—where the chip makes counterfeiting difficult—it lacks some authority, says Kevin King, head of marketing at ID Analytics LLC, a San Diego-based fraud-prevention services company. And even PINs are less than ideal nowadays, he adds.

"While ... 'chip-and-signature' is inherently less secure than chip-

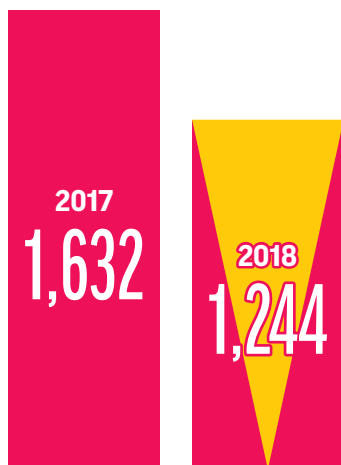
and-PIN—signatures fall short of the 'something you know' criteria for authentication—the truth is that PINs are still far from perfect from a security standpoint due to how easily fraudsters are able to compromise them," King says in an email.

"Bottom line, signatures don't even really qualify as a form of authentication (they mostly exist for a liability debate after-the-fact), and PINs are an increasingly outdated form of authentication whose use will continue to decline in the coming years," he adds.

Of course, signature authentication has never been a component of e-commerce, but these merchants have their own authentication issues. Account takeovers—where a criminal gains control of a legitimate consumer account—and synthetic identities—accounts created using a combination of actual consumer identification information, such as a Social Security or driver's license number, with fictitious birthdates, names, or addresses, resulting in the fabrication of a new identity—are now common headaches.

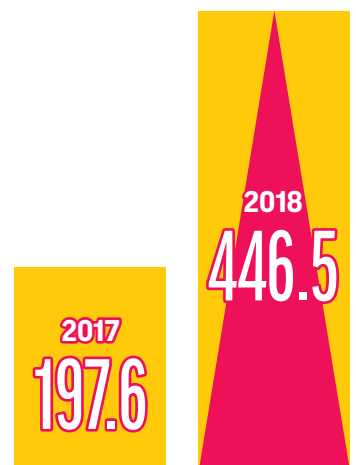
The problem is exacerbated by the billions of pieces of personally identifiable consumer information

BREACH INCIDENTS DECLINED IN 2018...



...BUT THE NUMBER OF RECORDS EXPOSED BALLOONED

(In millions)



Source: Identity Theft Resource Center

worldwide that already have been stolen and made available to criminals. With a little bit of work, and some keen purchases on the dark Web, a criminal can create a fictional iteration of a legitimate consumer, and no organization would be wiser.

“Authentication technologies are outdated, both at financial institutions and merchants,” says Krista Tedder, director of payments at Javelin Strategy & Research, a Pleasanton, Calif.-based advisory firm. “With account takeover continuing to grow for both bank and non-bank accounts, the authentication is weak. Using out-of-wallet questions, static passwords, and CAPTCHA does not meet the demands.”

CAPTCHA is an acronym for Completely Automated Public Turing test to tell Computers and Humans Apart, a technology to determine if an application is being completed by a human or a bot.

THE LAYERED APPROACH

The need for change in authentication practices and technology is clear. “The technology must change because crime changes,” Tedder says. “Unfortunately, criminals are more adaptive than companies, and that is why you see large-scale trends. Right now, takeover of rewards programs and merchant accounts seems to be topping everyone’s list of challenges.”

“These are generally programs that use weaker authentication methods,” she adds. “But as [artificial intelligence] and deep fakes are used in social media for propaganda, so can the technology be used [with] facial recognition and voice modification to bypass authentication capabilities,” Tedder

says. “It is important that as criminal technology advances, so do the prevention methods.”

Others agree. “There is no single technology today that’s adequate as a standalone,” says Sanjay Gupta, vice president of product management and corporate development at Mitek Systems Inc., a San Diego-based company that offers mobile verification and related services. It also is one of



‘The most impact [on fraud] has been the usage of biometrics.’

—SANJAY GUPTA, VICE PRESIDENT OF PRODUCT MANAGEMENT AND CORPORATE DEVELOPMENT, MITEK SYSTEMS INC.

the established providers of mobile remote deposit capture services.

“What’s best for both businesses and their consumers is to use layers of technology,” Gupta says. “Given the rate and pace of breaches today, merchants are increasingly cautious and demand higher standards of certainty.”

Even recent authentication tools may be outpaced by criminal advances. “Broadly speaking, passwords and shared secrets (‘tell

me the name of your high school’) are extremely vulnerable and ineffective protections on their own,” says King.

“They improve when you layer on additional authentication measures—technologies which assess the risk of mobile devices or which securely contact a known device can help develop comfort that the user possesses something the organization knows the true consumer possesses,” King says.

Still, he adds: “Even these multifactor authentication strategies—which pair together technologies to examine at least two of the three authentication factors (something you are, something you know, something you possess)—ultimately have gaps fraudsters can exploit.”

POST-PIN AUTHENTICATION

If signature’s days are over and the value of PINs has eroded, how might authentication technologies develop to ensure the integrity of electronic payments?

Many consider the introduction of biometrics as a significant step forward. “The most impact has been the usage of biometrics,” says Gupta.

He notes that Mitek classifies biometric technology as either physical, such as face, fingerprint, palm, and iris, or behavioral. The behavioral aspect is “how the individual interacts with their device,” he says. That might include how fast a person types her password, the number of contacts on a device, or which Web sites are visited, he says, adding, “The way a consumer interacts with their device is their unique signature.”

That type of interaction generates data that can be used in the background to augment the authentication

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process. “A lot of this in-the-back-ground stuff will have the biggest impact,” says Vijay Sondhi, chief executive of NMI, a Roselle, Ill.-based payment-technology provider.

Technologies such as machine learning, artificial intelligence, and device fingerprinting all can contribute, Sondhi says. Other advanced technology has a role, too. Merchants can use technology that will check the HTML code of an online store to see if it matches another online store and then pass on data to the payment provider, like NMI, where they allow or block payment transactions. “Criminals will steal HTML code and create a fake store on a brand-new domain,” he adds.

One central component of post-PIN authentication will assuredly be the smart phone. “We’ll continue to see the most progression on technologies which better leverage phones,” King says.

Phones have the ability to drive two of the three factors of authentication. They can confirm a user’s possession of a device known to be controlled by the customer (“something you have”), and they can collect biometric authentication (“something you are”), he says.

“While technologies exist to do this today, they have gaps in effectiveness and shortcomings in customer experience that I expect new innovations to continually address and reduce in the coming years,” King says.

Analytics will also play a large role, says Rajat Jain, vice president of fraud risk management at American Express Co. It’s had its most significant impact in improving authentication for payments, the AmEx executive says. “For American Express, we are investing in data-

analytics capabilities that help us create a more robust understanding of customers’ spending needs, so that we can shield them from emerging threats,” Jain says.

The emphasis on data analysis is raising the profile of artificial intelligence, says Fiserv’s Sheth. “I see artificial intelligence evolving and playing a larger role in the payments space,” he says.



He points to the recently updated 3-D Secure online authentication standard as a tool that harnesses AI for the benefit of merchants. The standard automatically captures more data from a transaction than is available from a non-3-D Secure transaction and can optionally include scores of other data.

The idea is to enable more approvals of transactions that otherwise might be declined or challenged. Merchants or merchant acquirers

could set their own levels of tolerance to trigger authentication challenges, assess the authentication report, and apply their own risk algorithms, Sheth says.

FRETTING OVER FRICTION

Even with automation, behind-the-scenes data collection, deep analysis, and new identification tools, sound authentication practices must strike a balance between security and the customer experience, Sheth says.

“Avoiding and preventing risk [and] protecting your customers, clients, and partners should always be the number-one priority,” he says. “And, authentication practices should be implemented in a way that is frictionless, avoiding prompts [and] pop-up windows, and enabling a smooth customer experience and reducing cart abandonment.”

When assessing the value of authentication services, the customer experience should have parity with the actual costs. “Effectiveness (accuracy) and customer experience are the two critical elements of an authentication service’s performance, though price can eventually factor into any purchasing decision,” King says.

But accuracy and customer experience are often in opposition, King says. “The more effective an authentication service is at accurately confirming an individual’s identity, the more friction is often introduced to the process,” he adds.

In one unlikely example, a customer could be asked to bring a birth certificate and provide a biometric for each in-person interaction at a bank branch. “I’d feel pretty good that we had authenticated that transaction, but the

customer experience would be wholly unacceptable,” King says.

Consumers, however, balk at far less friction than that. Even having to download a new app or take a photo of a driver’s license could provoke hesitation, King says. Some organizations may then adopt tools that have inherent weaknesses in order to preserve a lower-friction customer experience, King says, adding, “The better a technology delivers on a strong authentication with minimal impact to the customer experience, the more adoption it will get.”

For Mitek’s Gupta, one essential tradeoff is speed and convenience versus risk. “Balance what is important to the merchant’s consumers with the business impact to the merchant,” he says. “Use this information to determine what matters more: the speed of the customer’s transaction versus the reputation damage in case of a breach.”

Better securing the authentication process is not just a point of interest for consumer-facing organizations. NMI’s Sondhi says it’s also important on the merchant side to prevent the onboarding of fraudulent merchants.

For example, rapid merchant onboarding is vital for many acquirers pursuing the independent software vendor channel, he says. Some independent sales organizations, which are courting ISVs, want an onboarding process as quick and simple as what Square Inc. or Stripe Inc., both payments providers specializing in direct sales, can provide.

The risk, however, is that, without the proper process, a fraudulent merchant could just as easily be approved for a merchant account as a legitimate one, Sondhi says.

MULTIFACTOR IS A MUST

The challenge for any organization wanting to authenticate its customers and conduct transactions with them is figuring out that process, especially considering the rapidly changing threat from criminals. The key is employing multifactor authentication tools.



‘What matters more: The speed of the customer’s transaction [or] the reputation damage in case of a breach?’

—RAJAT JAIN, VICE PRESIDENT OF FRAUD RISK MANAGEMENT, AMERICAN EXPRESS CO.

“Best practices need to focus on multifactor authentication at the system-access point,” Javelin’s Tedder says. “This could be for digital wallets, device-based payments, point of sale, browser, or in-app. Moving away from one-time passwords, knowledge-based questions, and static passwords is needed.”

The increase in the number of data breaches only underscores the need to protect consumers, says Mitek’s Gupta. “Identity verification

needs to combine both physical and behavioral with re-verification of the individual,” he says.

Re-verification involves reaching out to a consumer, especially when an authorized account-holder is being added. If a criminal can get approved as a secondary account holder, he could reset the account settings and commit his crime unbeknownst to the primary account holder, Gupta says. It’s such a problem in some parts of Europe that legislation requiring periodic re-verification is appearing, he says.

King agrees that a multifactor authentication process is necessary. For smaller payments, “that step-up authentication isn’t critical depending on an organization’s tolerance for the negative customer experience of rejecting payments,” he says. “For larger payments, you need multifactor authentication, you need strong interrogation of device hygiene (is the device compromised by malware?), you need an effective means of step-up authentication.”

Even with the latest authentication tools deftly applied, there remains a risk factor: the attitude of the consumer. “The greatest impacts will be how technology is communicated with a detailed, easy-to-understand description of how the technology adds protection and data privacy,” Tedder says.

Her example is the confusion some consumers express about biometric authentication. “Many people do not understand that the biometrics reduces their risk and does not increase it. Fingerprints have had the greatest impact, but there is much more to be done to get consumers off static and one-time passwords and into the technology.” **DT**

WHAT'S IN YOUR WALLET?

Are digital wallets prepaid accounts?

A federal regulator says yes. PayPal just said no. Much is riding on who's right.

BY JOHN STEWART

TIME WAS, IT WAS PRETTY CLEAR how to tell a prepaid account. Almost always, it consisted of an account held by a bank or merchant and funded by somebody who then accessed the money using a plastic card. Nowadays, though, things aren't quite so clear. What's muddying things is the concept of the digital wallet.

These wallets aren't all that new. Companies like PayPal Holdings Inc. have been issuing them for years. But last spring a federal regulator, the Consumer Financial Protection Bureau, put into effect a regulation that governs what issuers must and must not do with prepaid accounts—and that

regulation doesn't stop with plastic cards linked to funded accounts.

In a move that could affect a wide range of companies not typically thought of as purveyors of prepaid accounts, the CFPB has aimed its rule at digital wallets, as well. And last month, one of those purveyors fired back.

PayPal sued the CFPB alleging its prepaid rule represents a “category error” and a violation of the First Amendment and should be vacated by the court. The lawsuit, filed in the U.S. District Court for the District of Columbia, charges that the rule forces PayPal to make awkward and confusing disclosures to consumers by improperly including digital wallets under its definition of a general purpose reloadable (GPR) card.

“[T]he Bureau's onerous compulsory disclosures require PayPal to prominently feature items that are irrelevant to the core use of its digital wallet offering, such as ‘periodic,’ ‘per purchase,’ ‘customer service,’ and ‘inactivity’ fees,” PayPal's suit alleges.

By forcing speech in this way, the rule violates the U.S. Constitution's free-speech protections, says PayPal's complaint. “[T]he Prepaid Rule is invalid, and may not be enforced against PayPal, because it violates the First Amendment of the U.S. Constitution,” the suit alleges.



PayPal further charges that, when the regulation was still a proposal under consideration and open for comment, the CFPB brushed aside the company's argument that digital wallets, which represent its core product, are fundamentally distinct from prepaid card products.

"Contrary to its mission of protecting U.S. consumers ... the CFPB unreasonably dismissed PayPal's evidence and finalized a Rule that treats identically GPR cards and PayPal's very different digital wallet products," the filing alleges.

'RIPPLE EFFECTS'

PayPal's suit isn't the first to challenge the CFPB on constitutional grounds. Last year, the U.S. Supreme Court agreed to take up a case that argues the agency is unconstitutional because of its model of governance by a single director rather than by a commission.

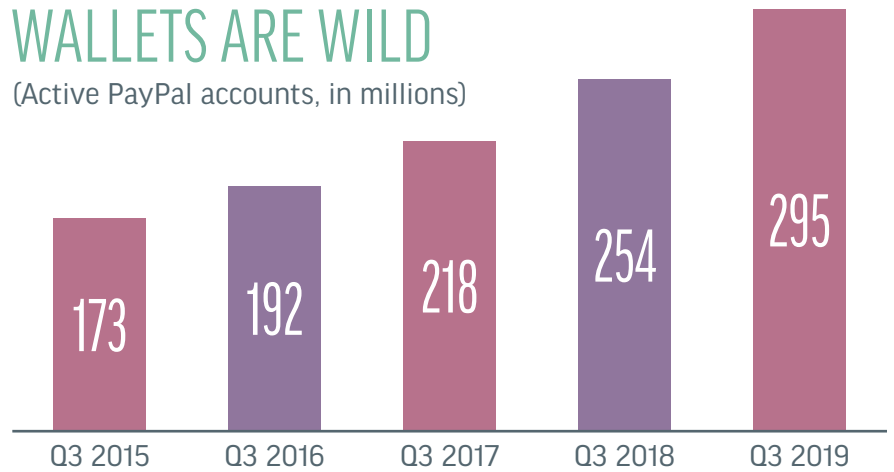
But PayPal's case could have wide implications for the payments industry, touching on issues of how to define a prepaid account and how to manage increasingly popular mobile wallets. "It's really important to watch this," says Patricia Hewitt, principal at PG Research & Advisory Services, a Savannah, Ga.-based consultancy.

"It could have ripple effects across the industry," adds Ben Jackson, chief operating officer at the Washington, DC.-based Innovative Payments Association. "They're challenging the big picture on regulation—how much can be regulated, how much statutory authority do you need?"

However the case is ultimately decided, he says, "all of the mobile

WALLETS ARE WILD

(Active PayPal accounts, in millions)



Source: PayPal

wallets will be affected by this. Apple Pay and all of those guys will pay close attention."

At the heart of the case is the question of just what a digital wallet holds and how common that holding is. PayPal argues the majority of its wallet holders simply store payment credentials—in other words, other accounts they may use for payments. These holders are not storing funds for future use.

"I think they have a good argument," argues Anita Boomstein, an attorney at New York City-based Manatt, Phelps & Phillips LLP who advises on payments matters. "Is it reasonable to include an account that holds credentials in the vast majority of cases in the broad sweep of what's a prepaid account?" Boomstein is not connected to PayPal's suit. The lead attorney representing PayPal did not respond to a request for comment for this story.

But that argument doesn't wash with all observers. "PayPal is trying to have it both ways. They're trying to say they're a wallet but also a funding source," says Aaron McPherson, vice president of research operations at Mercator Advisory Group, Marlborough, Mass.

PayPal's free-speech argument—that the rule forces it to make disclosures that don't apply or that confuse users—also doesn't wash with McPherson. "We have a hard time seeing how a First Amendment claim would prevail at the district court," he says. "Restraint of trade would be a more effective argument."

LIVE WITH IT

PayPal's case represents what is probably the most serious challenge to the prepaid rule since it took effect after years of delay. Created by the Obama Administration in the wake of the 2008-09 financial crisis, the CFPB considered prepaid regulation for years before releasing the first version of its rule in January 2017. The rule then underwent three revisions and two extensions of its effective date before finally taking effect in April 2019.

Now that PayPal has literally made a federal case out of the rule, it would be a mistake to expect resolution any time soon. Says Jackson: "The reality is this is going to take a long time to play out. People are going to have to live with the rule in the meantime." DT

CAN YOU DELIVER ON INSTANT PAYOUTS?

Across multiple industries, workers and consumers are increasingly looking for right-now funding. Businesses that want to thrive will have to meet that expectation.

BY **ROBERT CLAYTON**

Robert Clayton is vice president for Advanced Payment Solutions, Fiserv Inc., Brookfield, Wis.

IN A WORLD where instant gratification is king, Freddie Mercury's famous lyrics have never rung truer: "I want it all, I want it all, I want it all and I want it now."

That's the challenge facing many businesses today. As demand rises for real-time payments, consumers—and even business owners—want their money. And they want it now.

Consumer appetites have been whetted by the ease of peer-to-peer transactions, which allow people, seamlessly and easily, to pay for bills, pitch in for a collective gift, or pay back a loan from a friend. The prevalence of faster payouts is forcing

brands to provide payees the ability to choose how they will be paid, when they'll be paid, and to get the money digitally transferred in a moment's notice. Indeed, frictionless payouts are quickly becoming more of an expectation than a luxury.

As paper checks decline in importance (total dollar value down by 25% in four years), the number of ways businesses can disburse funds to workers and consumers is growing, and so are the benefits. For example, businesses that leverage digital disbursements over traditional paper checks see a 25% decrease in call-center volume, increased customer satisfaction and loyalty, and a 60% reduction in their overall cost of payouts.

Yet, changing payments processes is not easy. Businesses are striving to create frictionless disbursements for their customers and employees that reach their preferred destinations, and at the same time they must make sure those payouts are fully funded and secure. However, the process associated with sending funds from point A to point B can introduce complexity and inefficiency in the payout stream that almost always nets out to one thing: an unhappy payee.



Today's consumers expect to receive funds rain or shine, with credit available immediately. And they want the transaction to occur just as smoothly on Christmas Day as on a Tuesday in July. Meeting these expectations hinges on a business's commitment to digitalization and the required investment.

Without a sound digital-transformation strategy in place that evolves platforms and processes to increase loyalty and credibility with the customer, businesses will soon find themselves losing those customers to the competition.

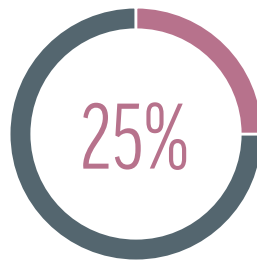
CHALLENGES

Inaction is not an option in today's environment where secure, instant payments are becoming a must. Here's a rundown on the trends and contours of this challenging new environment:

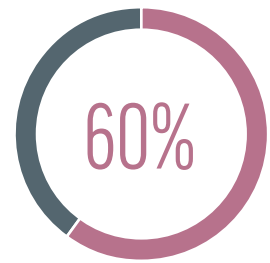
► **The Rise of the Independent Worker.** The freelance workforce is growing three times faster than the overall U.S. workforce. Without a regular weekly paycheck, freelancers and independent contractors are demanding shorter payment timelines, which require a more flexible disbursement strategy. Businesses that adjust to support faster and broader payout options improve their standing in the marketplace.

► **Accelerated Insurance Claim Payments.** When things go awry, people naturally turn, and turn quickly, to their insurance companies for financial help. Even once a claim is approved, a payout can take weeks or even months, a severe disadvantage for those of limited means or who have just suffered a

A switch from paper checks to digital disbursement results in savings for the business:



Decrease in call-center volume



Reduction in overall cost of payouts

Source: Fiserv Inc.

devastating loss. Insurance companies are already rolling out helpful mobile applications that are transforming the customer-engagement process. Now, by accelerating their digital transformation on the back-end, insurers can make the instant claim payment a reality.

► **A Substitute for Cash Tips.** As physical cards and digital wallets become customers' preferred payment options, more restaurants are keeping less cash on hand. But when it's time to divvy up tips among their employees, restaurants with limited or no cash are challenged to provide it. A digital platform needs to be a plan B so restaurants can quickly access and draw from accounts to pay out tips to these hard-working employees at the end of each shift.

► **Instant Jackpot Winnings.** Lucky instant-lottery winners are subject to cumbersome payout processes inside the stores where they purchased the ticket. The same can be said for casino winners bringing in lump sums of cash. Business types offering lottery purchases can pay out winners directly to their debit account through readily

available digital-commerce technology. And they can do it securely employing tokenized payment data.

► **Seamless Medical-Trial Payouts.** For selected patients participating in medical trials, generous stipends are paid by check, often weeks after the fact. Medical firms conducting these tests can save up to 60% of their payment costs by using digital disbursements instead of paper checks.

► **If You Don't Use It, Sell It.** The rise in renewable energy resources is allowing consumers to sell back unused energy to the utility companies and the grid. Utility companies have traditionally offered payment options in the form of paper checks or ACH direct deposit. But as more consumers look to earn money on their unused energy, utility companies will benefit from simplifying the payout process through digital means.

Many of these scenarios are gaining adoption, but some industries are ahead of others. Legacy processes still permeate many business sectors.

On their instantaneous-payments journey, businesses need to be focused on providing any and all

options that suit their customers' needs. Some older customers may prefer payments through more traditional channels, while others choose to receive funds via their mobile wallets and other digital services.

Catering to all demographics, even those that never possessed a checking or savings account—a group that numbers more than 8.4 million U.S. households—is a must.

OFFERING ALL OPTIONS

Wherever the customer goes, faster payment options need to be there. And with more customers operating akin to a small business, several other instantaneous payment options could be here sooner than we think, such as:

► **Short-Term Lending.** Small-business owners need quick access to capital to fund parts of the business, and time is a precious commodity. Instant digital availability of those funds from a short-term loan will prove invaluable to the business owner and increase loyalty with the lender.

► **Settlements.** Settlement day truthfully doesn't bring finality to the process, as all parties need to wait several more days to see funds in their respective accounts. As with the story of short-term lending, small businesses need instant access to capital. Research now shows this as a preferred choice, even if it means paying a fee.

► **Rebates And Gift Card Funds.** Purchasing new tools and equipment can come with big price tags.

Small-business owners will be compelled to buy more from the same retailer who can provide instant access to rebate and gift card funds after that first purchase.

Payment innovations available today and those arriving tomorrow are plentiful and providing ample opportunities for companies to foster deeper customer relationships. Delighting the customer always needs to be the first objective #1. And each customer is delighted in different ways.

It is up to companies to provide the payment and disbursement options that deliver on each customer's expectations. But those options need to be reliable, securable, and scalable to keep customers coming back for repeat business. Are you ready to deliver? **DT**



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Personalization and relevance depend on deploying the right technology.

endpoint

LOYALTY ON OVERDRIVE

Loyalty apps are great, but they badly need a technology overhaul. By adding artificial intelligence, retailers can step up customer engagement and convert more sales.

BY MEHMET SEZGIN

Mehmet Sezgin is chief executive and founder of myGini Inc., San Francisco.

AS BRICK-AND-MORTAR RETAILERS BATTLE for foot traffic and sales, there is good news for them. Gen Z, the first truly digitally native generation, were strolling through the malls rather than buying online this past holiday-shopping season.

But that doesn't mean they aren't using their smart phones! To capture their loyalty, retailers must improve their recommendations to be more personalized and relevant at all times.

Two in five consumers would pay more for personalized experiences, but most shoppers are dissatisfied with the level of personalization offered by physical stores. They are not alone. The same research shows even retailers agree that they lack the tools to make this a reality.

Artificial Intelligence (AI) promises to change this through the personalization of loyalty offers.

DYNAMIC LOYALTY

Using AI tools to predict consumer trends is not a brand-new concept for consumer-facing businesses. Amazon and Netflix are prime examples of exploiting the value of AI in the shopping experience. Their recommendation engines gauge what product or movie consumers will like even before individuals set eyes on it.

Platforms such as these have developed AI algorithms not only to leverage prior shopping behavior to predict what its users will like, but also to suggest when they might need it.

Does this mean AI is solely the province of online-only brands? Do they have the upper hand when it comes to personalization? Not at all! Some 85% of retail sales are still made in brick-and-mortar locations today. And online giants are catching on to the potential of using AI in retail stores. Look no further than Amazon Go stores.

As AI makes its way to malls and shopping streets, retailers need to be savvy. They can leverage the technology where it can have the biggest impact—on customer loyalty.

Retail loyalty programs are a major hit with shoppers. But they're long-overdue to get a technology revamp. Moving to an AI-driven platform could enable retailers to tailor loyalty programs to offer rewards and discounts based on real-time shopper behavior, purchase history, and location, among other parameters.

AI is particularly useful for keeping loyalty programs dynamic. Just because a customer watches a horror movie on Halloween, that doesn't indicate that the customer only likes horror movies on Netflix.



Likewise, people won't always want and search for the same type of rewards. Their expectations will change as their lives go on. A birthday will be different from a Christmas Eve, and a wedding anniversary will not be the same as a typical Friday night out.

Personalization needs to continuously adjust to individuals' changing needs. So retailers' loyalty programs must be dynamic too.

FRONT AND CENTER

For AI to keep this process seamless, it needs to be front-and-center in the customer experience. Since 97% of consumers look for deals when they shop, retailers' mobile apps provide the natural place for AI to operate and impact shopper behavior.

A mobile loyalty app is a great starting point for brick-and-mortar retailers. But with AI-driven apps, every customer engagement delivers endless opportunities for retailers to

personalize and target their offers to be more relevant, and, crucially, deliver these in real time, before a purchasing decision is made.

Based on how well this works with the customer, the AI engine can analyze and design future promotions accordingly. This approach to mobile loyalty means retailers get a better understanding of their customers' behavior and build the right offers and rewards programs to match exactly what they are looking for.

Consistent, relevant, engaging, and transparent—these are the characteristics of successful dynamic loyalty programs.

Retailers don't need to hire data scientists to make AI-driven loyalty programs a reality. With a dynamic personalization engine that integrates into their existing loyalty apps, they can leverage cloud-based AI tools such as Microsoft Azure without extensive training or investment in additional infrastructure.

To further reduce the IT burden, retailers can also look to fintechs for help, as many already specialize in fine-tuning rewards programs for banks.

Connecting this disparate shopping and payments experience is simple. By linking retailer loyalty offers to card transactions on the same mobile platform, retailers can widen their reach even to customers who have never shopped with them before.

BIG PICTURE

It is "big-picture" personalization, without the need to invest in expensive marketing campaigns, that will change existing point-of-sale systems, train cashiers to explain complicated loyalty programs to customers, or negotiate reward programs with banks.

Brick-and-mortar retailers don't need customer-service robots or cashier-less checkout systems to integrate AI technology into their strategy and wow consumers. Consumers already carry their mobile phones everywhere and rely on them to inform their shopping decisions. Now, AI can add more value to this.

AI-driven loyalty apps can move the mobile-assisted in-store shopping experience from "looking for deals" to "locking in deals," giving app users personalized recommendations of the loyalty offers that will appeal to them the most at any given moment.

As evolving shopping and payments technologies converge on the mobile app, AI will help retailers engage customers with more success and at more stages of the customer journey. **DT**

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