TRANSACTIONS

Trends in the Electronic Exchange of Value

SMOKING OUT POT'S POTENTIAL



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'It's only a matter of time before marijuana merchants are granted equal access to banking and electronic-payment services, because governments don't want these merchants paying taxes in cash.'

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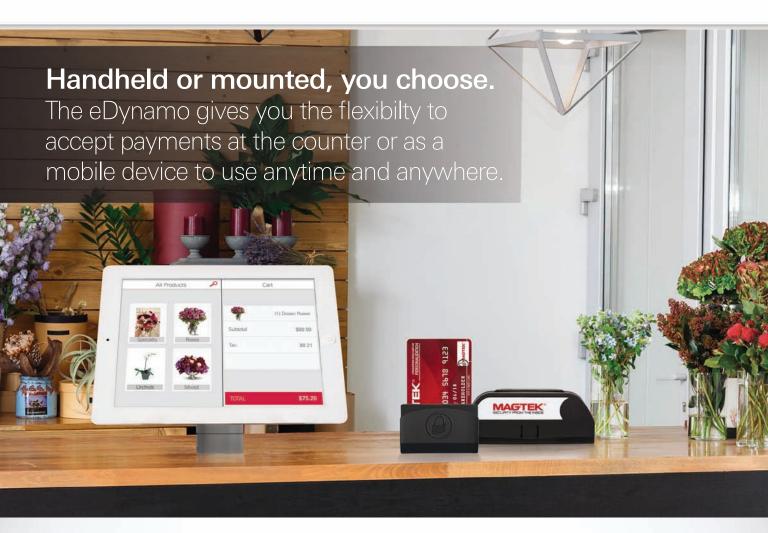
Has Trump Tamed the CFPB?

Acting director Mick Mulvaney is off to a promising start, but ensuring that the sprawling agency will always hew to the rule of law remains a challenge, says Eric Grover.

Cover illustration: Jason Smith, Fotolia.com

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THE GIMLET EYE



A Study in Overreaction

e often refer to the "wisdom of the market," investing the stock market with powers of insight almost amounting to clairvoyance. The market does, after all, efficiently compile the sentiments of entire regiments of investors into one tidy number, the stock price.

We reflected on this collective wisdom last month in the wake of the news that eBay Inc. intends in due course to bring on an enterprising Dutch processor called Adyen to run a back-end payments gateway while eBay takes over front-end payments management.

Of course, the news left a big question mark hanging over PayPal Holdings Inc., which eBay owned for 13 years, until 2015. When the two parted company, they signed a five-year deal for PayPal to go on processing for eBay's sprawling marketplace until July 2020. For its part, eBay said by 2021 it will have moved most of its merchants to the new eBay-Adyen platform, with eBay standing in as the merchant of record in place of PayPal.

Investors made it plain what they thought of that proposition. They torpedoed PayPal's stock, which sank \$8 virtually overnight, or around 10% of its preannouncement value. Even by the time of this writing in mid-February, the stock was still down by about \$7. As Larry Berlin, who follows PayPal at Chicago-based First Analysis Securities Corp., told us at the time: "Investors assumed the eBay deal [with PayPal] was everlasting."

Now, is this collective wisdom—or collective panic? After all, PayPal had just announced a solid quarter. And eBay is commanding less and less of its business—13% of dollar volume last year, down from 19% in 2015. By July 2020, that share will have shriveled to 4%, according to projections by PayPal's management.

Plus, the expiration of the operating agreement will free up PayPal to seek processing deals with other marketplaces all over the world. It's not throwing out any names—way too early for that—but you can bet it's starting talks with a number of them now.

None of this is to suggest eBay has gone off-course. It clearly—and, in our view, correctly—sees opportunity in seizing a bigger role in handling payments for its sellers. And to that end it has already stocked up on talent, including: Alyssa Cutright, a former Square Inc. and PayPal executive, as vice president of payments; Jingming Li, formerly with Ant Financial, as vice president of the payments platform; and Yvette Bohanan, formerly with Alphabet Inc.'s Google unit, as vice president of risk management.

What we are suggesting is that, perhaps, investors should take a deep breath when they look at this development. Both parties stand to benefit.

John Stewart, Editor | john@digitaltransactions.net

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PUBLISHER Robert A. Jenisch

EDITOR-IN-CHIEF John Stewart

> Senior Editor Jim Daly

Senior Editor, Digital Kevin Woodward

Correspondents
Jane Adler
Lauri Giesen
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Director of Advertising Robert A. Jenisch, 877-658-0418 bob@digitaltransactions.net

Advertising Sales Representatives Robert Mitchell, 877-658-0418 bmitchell@digitaltransactions.net

Cathy Woods, 602-863-2212 cathy.woods@mediawestintl.com

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John Stewart, Managing Director Robert A. Jenisch, Managing Director

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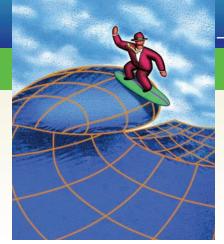
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IRENDS & TACTICS

Zelle Looks to Break Venmo's Hammerlock on Millennials

Payments observers who think Venmo and Square Cash have locked up the Millennial crowd for peer-topeer payments may have to reconsider. With the new advertising blitz it announced in late January, the bankowned Zelle service is making it plain it plans to steal its share of this huge consumer market.

"The advertising for Zelle is focused on the Millennial and younger Gen-Xer," says Norm Marranccini, director and vice president for payments marketing and adoption at Fidelity National Information Services Inc. (FIS).

Most especially those aged 25 to 32, he says, are "what the banks want." Jacksonville, Fla.-based FIS processes for financial institutions and serves as one of several companies linking client banks to the Zelle network.

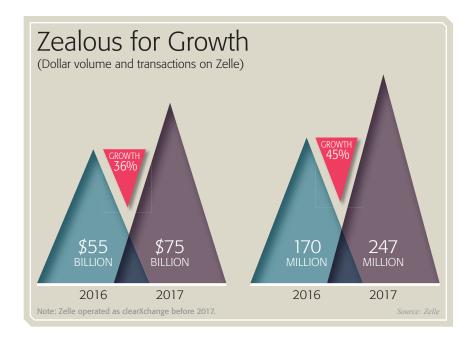
One commercial depicts a young man, portrayed by 36-year-old singer and Broadway actor Daveed Diggs, agreeing to buy a work of art and then heading out to the bank to get cash for the purchase, while all around him, including the seller, admonish him to simply use Zelle.

PayPal Holdings Inc.'s Venmo, in particular, has won widespread popularity with younger users with its social-network features and fast transfers. A survey of more than 2,000 Millennials last April found that Venmo was far ahead of other mobile-payments apps in popularity, with 44% saying it's the one they use most often.

Well behind, in second place, was "my bank's mobile-payments app," at 14%. LendEDU conducted the survey.

This audience is crucial for banks because it's at younger ages that consumers form financial habits for a lifetime, says Marranccini, who was a banker before coming to FIS. Now Zelle, which has so far recruited 60 financial institutions and commands a \$40 million advertising budget, is concentrating its considerable marketing resources on younger adults in a way its predecessor, clearXchange, never did.

Already, Zelle is processing more volume than Venmo, despite the Pay-Pal unit's furious growth. The network handled \$75 billion in payments last year (chart), more than double the \$35 billion racked up by Venmo, which did about half that volume in 2016.





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TRENDS & TACTICS

It helps that some of the nation's biggest banks, including JPMorgan Chase & Co. and Bank of America Corp., own the network. That has made Zelle, in Marranccini's words, "the 800-pound gorilla that Venmo wanted to become."

But Venmo has won its popularity among the coveted younger crowd not through advertising but through viral word of mouth, as Marranccini concedes. Indeed, usage spread so quickly among 20- and 30-somethings that the brand "Venmo" became a verb, as in "Just Venmo me the money."

With that as the standard of success, one of Zelle's aims is to become the new verb, not only for moving payments between people but also for disbursements from companies and organizations to consumers. "You can Zelle me the money," is how Marranccini phrases it.

Zelle is 'the 800-pound gorilla that Venmo wanted to become.'

The irony of P2P payments is that, while they are a "must-have" for banks, as Marranccini says, they don't make money, since most transfers are free. Even PayPal has been forced to find revenue for Venmo by enabling merchants to accept Venmo payments. Still, if a financial institution doesn't offer the service, "the next bank will," Marranccini says, potentially stealing customers.

A key advantage for Zelle over third-party apps like Venmo or Square Cash is that transfers take place directly between the bank accounts of the sender and the recipient, eliminating the need for the recipient to take a second step to move the cash from a brand wallet to his bank account.

But if Zelle hopes to win over Millennials, it may have to spiff up its mobile app, which is used by consumers whose banks have not yet integrated the service. In Apple Inc.'s App Store, for example, Zelle's overall rating is 3.8 stars out of five, compared to 4.6 for Square Cash and 4.8 for Venmo. For his part, Marranccini says Zelle's rating has improved markedly in recent weeks, a trend he expects will continue.

—John Stewart

Never Heard of TLS? That Won't Last Long

A July 1 deadline from the PCI Security Standards Council is prompting payments providers to act well before then, with many having set internal compliance deadlines in February.

Why the big rush? Maybe because noncompliance with the PCI mandate

could halt merchant transactions that rely on the Internet.

The PCI Council in 2015 issued a deadline to migrate from earlier forms of Internet security standards. These measures govern the cryptographic protocol when devices connect using the Internet.

Specifically, the PCI Council, which originally set a June 2016 deadline that was later moved to July 1, 2018, says Transport Layer Security 1.1 or higher is necessary for transactions to be compliant. Transactions made with Web browsers and many

MONTHLY MERCHANT METRIC

Total Gross Processing Revenue, in Percent

Sum of total discount, total transaction fee revenue, and total other fee revenue divided by total volume



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.

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point-of-sale terminals using older versions of TLS or Secure Socket Layer technology will be out of compliance after that date.

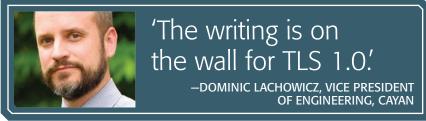
Some merchants will have to update their Web sites to TLS 1.1 or higher, while others may need to update their POS terminals if these devices connect to the payments system using the public Internet. Merchants may also have to update the operating systems on computers running their POS software if the system does not support the newer cryptographic standard.

TLS is the newest encryption protocol of a specification originally developed years ago by Netscape as Secure Socket Layer. The Internet Engineering Taskforce oversees the protocol.

Despite the July 1 deadline, processors and other players have already acted. First Data Corp., for example, set a Feb. 15 deadline for transactions using its Datawire service, a transport network that sends financial data over the public Internet from a merchant's POS system to First Data.

Datawire will only support TLS 1.2, the most recent version of the security protocol. Merchants that have not upgraded will not be able to complete transactions using Datawire

vice president of engineering. "This is basically to test merchant awareness and readiness," Lachowicz says. "The writing is on the wall for TLS 1.0."



(Photo: Cavan)

until they move to TLS 1.2, First Data says in a notice.

Other payments providers, such as Boston-based Cayan, are planning test periods prior to July 1 to incite merchant action.

Cayan, now a part of Total System Services Inc. (TSYS), has so-called brownouts planned beginning in April that will disable products using TLS 1.0. The hope is that merchants will call to find out what happened, says Dominic Lachowicz,

Criminal enterprises, which have executed known exploits of earlier versions of TLS and SSL, can harness ever-increasing computing power to find chinks in the security armor, Lachowicz says.

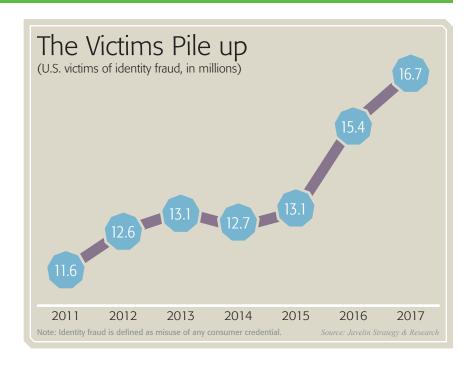
He estimates approximately 40% of Cayan's merchants are at risk. Several months ago, it was 60%. Many of the 40% are larger merchants. "We will make a very strong push to that deadline," he says.

-Kevin Woodward

Consumer Cynicism Climbs in a 'Runaway Year for Fraudsters'

Thanks to the seemingly unending epidemic of data breaches—capped by the huge breach last summer at credit-reporting titan Equifax Inc.—consumers are becoming both more aware and more cynical about the problem, according to research released last month by Javelin Strategy & Research.

In the wake of the Equifax case, in which intruders accessed 146 million records, more consumers reported Social Security numbers having been compromised than reported compromised credit card credentials. That's the first time that's happened in the years Javelin has surveyed consumers for its annual consumer-fraud report.



The margin was 35% reporting compromised Social Security numbers compared to 30% reporting compromised credit card data. Debit cards were a distant third, at 16%.

The really bad news, as Javelin notes in its report, is that by stealing Social Security numbers fraudsters have built a trove of data that will enjoy a long shelf life. In fact, criminals have reaped such a harvest of new victims they can't work fast enough to target them.

Almost a third of U.S. consumers were notified of a data breach last year, up from 16% in 2016. "2017 was a runaway year for fraudsters," said Al Pascual, research director at Pleasanton, Calif.-based Javelin, in a statement.

Making matters worse, consumers have developed a cynical attitude about companies' post-breach actions. Some 53% in 2017 agreed with the statement that the real purpose of breach notifications is to protect organizations from legal liability, not to help consumers. That's up from 39% in 2016. Among just breach victims, the percentage shoots up to 64%, compared to 43% in 2016.

The research found that the number of U.S. adult victims of identity fraud—which involves misuse by fraudsters of any consumer credential—reached 16.7 million in 2017, up from 15.4 million in 2016. That number has traced a somber climb from 11.6 million in 2011 (chart, page 10).

The fraud totaled \$16.8 billion last year, up from \$16.2 billion in 2016 but lower than some prior years, such as 2012, when Javelin calculated a \$22.1 billion total.

This latest annual report, entitled "2018 Identity Fraud: Fraud Enters a New Era of Complexity," is based on an online survey of 5,000 U.S. consumers and was sponsored by Identity Guard, a Chantilly, Va.-based provider of protection services against ID theft.

—John Stewart

Look Who's Gaining Traction in Signature Debit

The formerly sharp line of demarcation between the electronic funds transfer networks, which traditionally have handled PIN-debit transactions at the point of sale and at ATMs, and Visa Inc. and Mastercard Inc., which dominate signatureauthenticated debit purchases, continues to fade.

The latest example comes from processor Fiserv Inc.'s Accel network, which last month revealed that Walmart



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Inc. is using its service for signaturebased debit card transactions.

Walmart typically prompts customers paying with debit cards to enter their PIN. But if the customer wants to sign for the purchase, the Accel service routes the transaction over its network rather than the Visa or Mastercard networks, even though the customer's card invariably will have one of those two logos on the front.

"Now what we've done is to enable that to happen on what is traditionally a signature-based transaction," says Carol Specogna, vice president of product strategy in Brookfield, Wis.based Fiserv's Card Services unit. "It's all up to the merchant."

Under the Federal Reserve's Regulation II, which implements the Durbin Amendment to the 2010 Dodd-Frank Act, a debit card must provide merchants with a choice of at least two unaffiliated networks for transaction routing. Most issuers complied by keeping a global network logo such as Visa's or Mastercard's on the front of the card for signature transactions, while the back displays the logo of an EFT network such as Accel for PIN-based transactions.

But in the past few years, the EFT networks have been broadening their services and are now directly challenging Visa and Mastercard on their signature turf, which accounts for the majority of debit transactions.

"There's been just an evolution in our market, primarily since Regulation II was enacted," says Specogna. "Issuers have had interchange rate reductions, and merchants have more routing options. We've really taken the opportunity to improve the net economics for both merchants and the issuers."

Specogna would not disclose Accel's signature interchange rates, but says they vary depending on whether the brand on the card's front is Visa or Mastercard.

She says rates are "not necessarily less" than the big networks' rates—a provision that works in favor of issuers—but the entire pricing package of interchange and network fees also creates an attractive proposition for merchants. "We don't have as many fees," she says.

A spokesperson for Bentonville, Ark.-based Walmart, a strong



(Photo: Fiserv

proponent of PIN-based debit, did not respond to a *Digital Transactions* request for comment. But in a press release, Mike Cook, Walmart senior vice president and assistant treasurer, said customers see no difference at the checkout counter.

"For Walmart, the cost savings from this additional routing option will quickly add up, allowing us to further invest in price and the customer experience," Cook said. Michael Moeser, director of payments practice at Pleasanton, Califbased Javelin Strategy & Research, says EFT networks need to target signature transactions if they want to grow.

"Walmart's quick adoption of this competitive [service] is a clear signal that retailers want more options for signature transactions, and are willing to reward those networks that offer them," Moeser says in an email message.

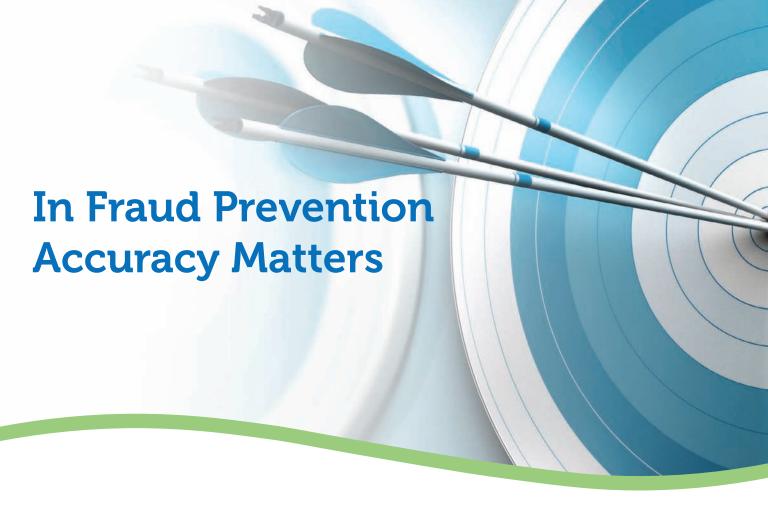
The service Walmart is using is just one in an assortment of new routing services that Accel introduced for point-of-sale and online debit transactions over the past couple of years.

Accel and its surviving EFT network cohorts originally offered only PIN-authenticated transactions that used a so-called single-message format in which the authorization and clearing and settlement functions were contained in one message. Traditional signature-debit transactions went over the Visa and Mastercard networks in so-called dual-message format, one for authorization and, later, another for clearing and settlement.

Now, Accel and other EFT networks, including First Data Corp.'s Star, have gotten into dual-message debit, not to mention PINless debit for low-risk transactions. Come April, Accel, like Visa, Mastercard, American Express Co., and Discover Financial Services, will offer merchants the option of forgoing signatures in transactions that formerly would have called for one ("How Visa's About-Face on Signatures May Spur EMV Adoption," February).

"All the EFT debit networks are very engaged directly with retailers, working with them to offer options for PIN, PINless, dual- and single-message transactions," Sarah Grotta, director of the debit-advisory service at Maynard, Mass.-based Mercator Advisory Group Inc., says by email.

—Jim Daly

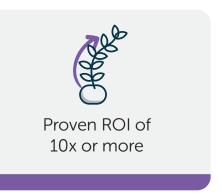


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Security Notes

The Real Cure for Payment Friction



Gideon Samid • Gideon@BitMint.com

emember the good old days, when you tossed a quarter into the peddler's jar and picked up the daily paper in the train station? Now that was frictionless. You did not know the peddler. He had no clue who you were. You did not

receive any paperwork: no invoice, no monthly statement. There was no overhead of reconciliation, no paper trail, no privacy violation.

How far we have come since these good old days!

Payment technology today is choked on friction. There are so many moving parts. Take payer and payee. Each must identify himself to the other. Each must negotiate with his bank account (in case of legacy money) or with his crypto address (in case of crypto money). The accounts or the addresses then need to be negotiated by the payment environment, which is the bank and card network, and any go-betweens (e.g. PayPal, Venmo), in case of legacy money, or the public ledger and payment exchange, in case of crypto money.

"What's the big deal?" I hear people ask. All this "friction" is lightning fast (except when your EMV transaction lingers). Indeed it is. But that is not the issue. A mechanical system that operates with friction can be pushed to run sufficiently fast, but the friction eventually wears it down and brings it to a halt. Payment friction represents the payment overhead, complexity that is prone to errors and invites abuse. To counter these ills, it is necessary to add friction in the form of auditing and securing the data. All this add-on is, again, prone to errors and abuse.

And as it becomes more complicated, there are fewer and fewer people who understand how it all clicks. I sit in meetings where expert accountants have to educate me on some auditing practice, while asking me about crypto matters. No one in the room has a comprehensive take on the machinery. How scary is this? And then come the regulators and the legislators. Most of them, in the best case, understand well one or two aspects of this maze. But they put their heavy foot down, adding friction, complexity, and confusion.

Complexity and confusion are a Petri dish for cyber malware, which makes the panacea of frictionless payment seem unrealistic as ever.

Help, though is on the way. Consider an electric vehicle zooming over an underground magnet that sends a charge to the vehicle's battery. The charging is instantaneous, and it must be paid for frictionlessly. Why not apply the toll-tag solution? Won't do, because there are many charging outfits, and the monthly statements are costly and prone to errors and abuse. The only acceptable solution is a frictionless counterflow of digital money. So when the car moves on, the energy is charged and paid for—just like with the daily paper at the train station.

Welcome to the future of pay-as-you-go—as fast as you go! The smart world of the Internet of Things will see lightning-fast negotiations between "things" that pay each other faster than we can pull our wallet from our pocket. Cars weaving in and out of the fast lane will pay per use of this lane at the speed of their travel. At BitMint, we see great interest in this technology in China, which bills itself as a leader.

Once this technology matures, it will creep into ordinary payments. As soon as we resolve the regulatory mess, we can let a customer flash his mobile screen before the merchant's camera and thereby pay money that will cost the merchant between zero and 0.5% to redeem into his account, bypassing the settlement overhead of the networks. The money is cash-like, with a small crypto addendum to satisfy the local regulator, but insuring privacy beyond that.

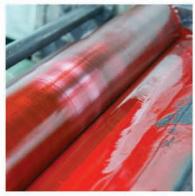
Digital-money technology also leads the way in the design and construction of powerful cybersecurity weapons that will make it unprofitable to hack into a database storing public personal-identity info. They will also tether money to its owner, so that a thief will not be able to spend it. This will reverse today's trend toward forever-swelling security measures, and the corresponding regulatory burden, which by itself will reduce payment friction considerably.

All in all, the winds beyond the horizon are quite promising, but they are hard to detect because payment today is a story of complexity running amok. Hold your breath. Help is on its way!

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How Payments Will Change

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typical household makes from four to a dozen recurring payments monthly. In addition, households pay for groceries and clothing and other things at points of sale and online.

In the future, we may all commute using app-based ride ser-

vices. But these overwhelmingly draw the passenger's payment from a credit or debit card, and it's usually one issued by a bank. Bank-owned Zelle has achieved around three times Venmo's volume in one-fifth the time.

Need to send money instantly to someone, anywhere? Visa Direct moves the money from any bank-issued debit card to any other bank-issued debit card. The Clearing House's under-15-second, good-funds payments model moves money only from a regulated bank account to another regulated bank account.

A missile's trajectory models what happens with most new payment schemes' volume. The rate of change in a missile's altitude shoots rapidly from inches per second to miles per second. But then the curve flattens out. A similar pattern occurs in the gains in volume of payments made by a new payment method. At first, only a few payments are processed per hour. Then hundreds to thousands to tens of thousands per hour. Then it slows.

The important statistic to monitor is the rate of change of the rate of change in volume—the second-order derivative that would signal success. The compounding of gains after launch rarely persists for either new missiles or new payments technologies. For missiles, the reason is gravity. For payments, it is demand.

IT'S ALL ABOUT DEMAND Only a fixed number of payments are going to get made, simply because there are only so many payers, and each needs to pay for only a fixed number of units of shelter or food or transportation or mobilephone games. This is one reason smart developers of new ways to pay try to launch their product as the way to pay for something entirely new, something that simply was never paid for before, like multiplayer-game power boosters or minutes of virtual-reality streaming.

Just as a ride-sharing payment app doesn't increase the aggregate demand for miles of travel, new payment schemes can seldom increase payments activity by an amount large enough to keep them growing at high rates over the long term.

THE COMPETITION FOR PAYMENTS INNOVATION

Banks are hardly newcomers to the game of providing new ways to pay: MICR, check-image processing, ACH, credit cards, debit cards, and now card-to-card instantaneous payments and the R3 consortium's global blockchain payments system were all invented or absorbed by banks.

Banks are very aware that a new way to pay benefits the bank only to the degree that it doesn't take away too many payments that would otherwise have been made using an existing, fully depreciated, bank-owned payment method. Adding a door to the bank won't make more people walk in.

As with cars in the automotive industry, letting an existing payment method's inventory of potential users clear before introducing a new one is almost as important as the invention of the new payment technology itself.

Hank Koehn, the first futurist ever hired by a bank, once calculated that his bank could make more money selling personal computers than inventing ways to use them for payments. His point wasn't that the bank should start retailing PCs, but that it should wait until a user base existed before offering PC-based payments.

TWO PREDICTIONS In the future, we will pay using fantastically innovative technologies that will connect a payer's account at a regulated financial institution to a payee's account at another regulated financial institution.

While many of the core technologies may initially be pioneered by non-bank fintech innovators, the overwhelming majority will either have been invented by regulated financial institutions or will have been taken over by regulated financial institutions. In both cases, the payments' starting and ending points will be bank accounts.

Second, fintechs could change the way one very large group of people pay. It's the tens of millions who need to make and receive payments but have no bank and no method other than cash for making these payments.



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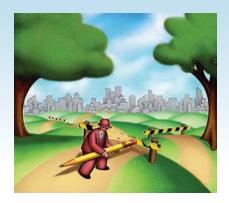


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Reduced Speed Ahead

Jim Daly

It's been a great run for credit cards—eight straight years of volume growth after a nasty reversal in the Great Recession. But what are the implications for acquirers' bottom lines when this long growth spurt ends?

redit card issuers take delight when their cardholders spend freely, pay their bills on time, and, best of all, revolve balances that generate profitable interest income. And delightful it's been for issuers ever since the Great Recession ended: eight straight years of volume increases accompanied by tolerable losses.

Merchant acquirers have gone along for the ride. After all, every time a consumer pulls out a credit card to pay for something in a store or uses a credit account for an online or mobile purchase, a merchant acquirer somewhere processes a revenue-generating transaction.

While debit card purchase transactions now vastly exceed credit purchases (chart, page 20), what's great about credit for acquirers is that its overall margins are higher than debit's.

Part of that comes from the much higher average ticket—\$89.19 for Mastercard Inc.'s U.S. credit purchases in 2017's fourth quarter versus \$39.18 for debit. Visa Inc.'s equivalents were \$80.68 and \$38.13. That leaves more meat on the bone, so to speak, for acquirers to claim via fees.

Also contributing are price competition and the vagaries of payment-industry economics. "Debit processing is a more competitive business than credit processing," Himanshu Patel, chief financial officer at Atlanta-based First Data Corp., said on the company's Feb. 12 fourth-quarter earnings call.

Changing the Game

The lending industry hit a milestone in November when consumer revolving credit finally surpassed, ever so slightly, its April 2008 peak of \$1.02 trillion in receivables just as the Great Recession was getting under way, according to the Federal Reserve (chart, page 20). As the recession wore on, consumers shed \$188 billion in revolving debt before bottoming out in April 2011.

Credit card balances—which stood at \$834 billion in 2017's fourth quarter, up 7% in a year, the Federal Reserve Bank of New York reports—account for the great majority of revolving debt. The rest consists of personal revolving lines and related forms of credit.

In a rare contraction, credit volumes on all four of the leading U.S. general-purpose card networks—

Visa, Mastercard, American Express, and Discover—collectively plunged 13% in 2009. After a small recovery in 2010, credit card volumes jumped 9.5% in 2011 and since then have grown in the 8%-to-9% range annually (chart, page 21).

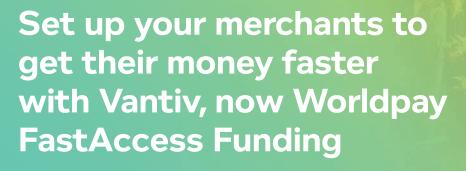
Several factors contributed to the revival in credit cards' fortunes. A great purge of delinquent borrowers, who had pushed chargeoffs up to nearly 12% of receivables in 2009 and 2010, according to Fitch Ratings, cleaned up issuers' balance sheets and enabled them to concentrate on customers with better credit scores and potential for higher spending.

By contrast, general-purpose card chargeoffs were running at just over 3% of receivables in the third quarter, according to Fitch, a New York Citybased securities-rating firm (chart, page 21).

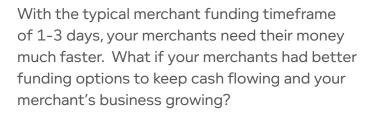
The strong credit trends have led to loan growth for issuers and a steadily increasing flow of transactions for acquirers.

"We've been in an extremely benign credit environment the last five, six years," says Michael Taiano, director of non-bank financial institutions at Fitch.

Surprisingly enough, a second factor spurring credit's growth is regulation. Despite consumers' warm embrace of debit cards, issuers, especially big ones, have pumped out credit cards with attractive loyalty



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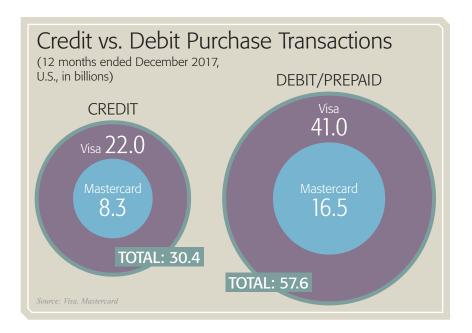
programs and perks in the wake of the Dodd-Frank Act's Durbin Amendment, which took effect in 2011.

As implemented through the Federal Reserve's Regulation II, the amendment cut debit card interchange revenues in half for bank and credit-union issuers with more than \$10 billion in assets, but left credit card interchange alone.

"The incentive [for] banks, especially the larger ones, to push debit has gone down considerably," says Taiano.

Even before Durbin, Congress created an incentive for issuers to pursue more affluent, big-spending credit card users with the Credit Card Accountability Responsibility and Disclosure (CARD) Act of 2009. That law limited issuers' ability to quickly re-price credit card accounts. The result was that the high-profit but high-risk subprime market suddenly looked less attractive to many issuers.

"That really changed the game from being able to originate subprime," says Taiano. "You used to be able to re-price those accounts fairly easily." The law forced issuers "to be more disciplined" in granting credit, he adds.



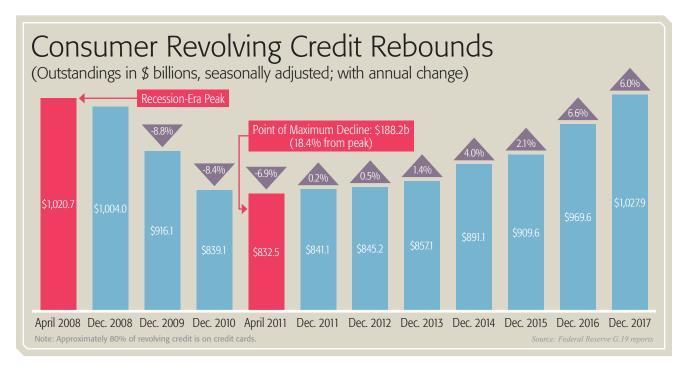
Credit Crunch

But subtle signs are now appearing that credit card growth rates could slow, and in turn affect merchant acquirers' bottom lines.

One is the economic recovery that started when the Great Recession ended in June 2009 is going on 9 years old, making it one of the longest expansions in recent history. Some teeth-clenching, volatile February days in the stock market reminded everyone that business cycles haven't been repealed.

To be sure, the aging expansion may have gained a new lease on life in December when President Trump signed the Tax Cuts and Jobs Act. The law permanently cut corporate tax rates, resulting in a flurry of announcements about one-time bonuses, enhanced retirement programs, or other good news for consumers, who are getting temporary tax cuts.

"People have money in their pockets," says Thomas McCrohan,

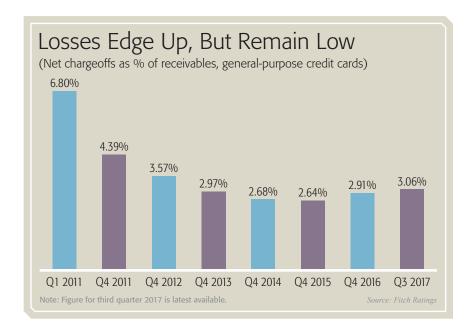


managing director, Americas Research, at New York City-based investment firm Mizuho Americas. "That all is a positive for consumer sentiment."

But another cautionary sign for the credit card industry is an uptick in losses. Fitch data show chargeoffs for general-purpose issuers were up 46 basis points (0.46 percentage points) in the third quarter from a year earlier, though losses remain far below levels seen in the recession.

Delinquencies hit a five-year high for retail credit cards, however, and purchase-volume growth on cards issued by retail credit specialists such as Alliance Data Systems and Synchrony Financial slowed, Fitch said in a report. That slowdown undoubtedly is linked at least in part to the struggles many brick-and-mortar stores are having competing with online retailers.

Still another sign is consumers' increasing preference for debit, which could mean lower margins ahead for acquirers. Some 61% of 800 consumers surveyed in the fourth quarter by New York Citybased Auriemma Consulting Group cited a debit card as their most frequently used card, up from 52%

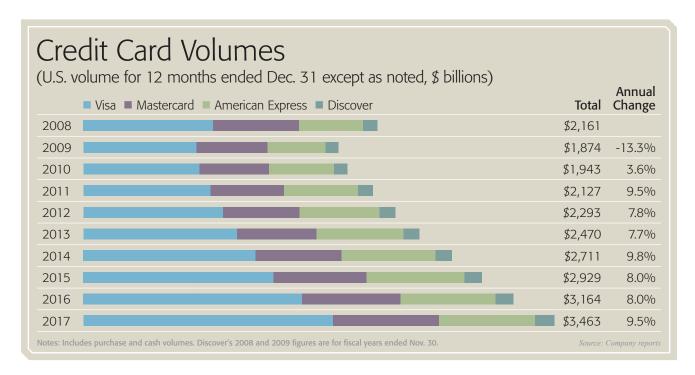


a year earlier. Only 24% named a credit card, down from 35% at the end of 2016 (chart, page 22).

"Based on our consumer self-reported research, we have already begun to see [year-over-year] increases in debit card preference and spend over the past two years, as well as a growing proportion of consumers who are primarily using debit cards for online purchases," Jaclyn Holmes, Payment Insights director at Auriemma, says by email.

Indeed, credit cards dominated e-commerce from its earliest days, but other payment forms are taking share from credit as alternatives come on the scene and consumers' attitudes toward the safety of e-commerce become more accepting.

Auriemma's survey found 50% of respondents used a debit card for online purchases compared with only 35% using credit in 2017's fourth quarter. Two years earlier, 51% of respondents favored credit cards



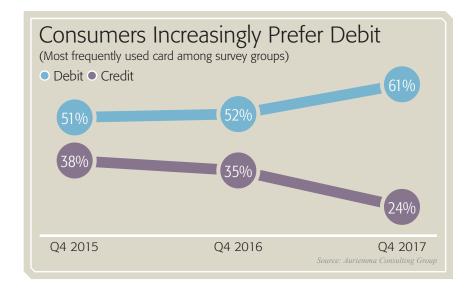
and only 34% debit. According to Auriemma, the change could be a sign that consumer trust in online commerce is rising.

'Muted Impact'

So, what's ahead for acquirers' bottom lines if the post-recession growth spurt finally sputters, credit card losses rise, and consumers become less willing to use credit? Veteran industry observers say the sky's not about to fall, but point to some caution signs.

Gil Luria, director of research at D.A. Davidson & Co. in Portland, Ore., predicts any credit card contraction would likely put only a mild damper on acquirers' financials.

"Networks, acquirers, and processors proved quite resilient during the last downturn, and I would expect them to weather the storm relatively well in the next downturn as well," Luria says by email. "While transactions may move from credit to debit, the overall reduction will likely be measured. Debit transactions may be less profitable than credit, but that



would be a relatively muted impact compared to credit card issuers that will have to absorb credit losses."

An "extreme slowdown with issuer failures," however, could put both acquirers and card networks "at risk of counter-party default," Luria adds. "This set of circumstances nearly happened during the 2008 meltdown and could happen this time."

Dave Lott, payment-risk expert at the Federal Reserve Bank of Atlanta's

Retail Payments Risk Forum, says by email that "any decline in [credit card] usage will impact acquirers' revenue since their transaction revenue will decline due to processing fewer transactions. But keep in mind there is often an inverse relationship between debit and credit card usage. In leaner times, cardholders will often shift from credit to debit.

"For an acquirer, generally a transaction is a transaction so there isn't much difference in whether they are processing a credit or debit transaction," he continues. "But clearly, fewer transactions or even lower average ticket amount will impact the revenue of an acquirer; just as it will impact the revenue flowing to the card issuer."

For now, acquirers may need to be aware that growth in credit card transactions isn't as certain as it was five years ago. But Mizuho's McCrohan notes that both credit and debit cards still enjoy the tailwind of the conversion of cash payments to electronic forms. The tailwind isn't as strong as it was in the 1990s, but it's still in the neighborhood of 3% to 5% above the change in personal consumption expenditures, he says.

"I still see decent growth in the context of slowing volumes," he says. "We're not talking about a recession scenario."



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SMOKING OUT POT'S POTENTIAL

Despite concerns that the federal government will crack down on state-sanctioned marijuana, a small band of payment providers is working to cash in on an exploding industry.

By Peter Lucas

t's no wonder that legal marijuana merchants, and their banks, have been feeling of lot of angst in 2018. In only a matter of weeks, the federal government sent out mixed signals about the sale of legal cannabis, signals that could directly affect the future of electronic payments in a nascent—and booming—industry.

In early January, U.S. Attorney General Jeff Sessions fired a salvo against marijuana merchants by rescinding the so-called Cole Memo. That was a directive forged by the preceding Obama Administration that allowed cannabis dispensaries in states where marijuana has been legalized to operate without federal interference, provided they adhered to the memo's guidelines.

Marijuana remains a Schedule 1 drug in the eyes of the federal government. Schedule 1 also includes heroin, Ecstasy, and LSD.

Even with the Cole Memo, most financial institutions shunned providing legal marijuana businesses with merchant accounts, checking accounts, and other business services because of the ongoing conflict between federal and state law. They hoped that, some day, Congress would settle the matter.



'BAGS OF CASH'

But by quashing the Cole Memo, Sessions, a former U.S. senator and long-time opponent of legal marijuana, gave federal prosecutors free rein to shut down cannabis merchants anywhere.

That move dampened optimism that electronic payments were on the verge of becoming standard for legal marijuana merchants. Hawaii, for example, had mandated that its medical-marijuana dispensaries offer patients an electronic-payment option. Hawaii's decree, effective last Oct. 1, was viewed as a beacon for other marijuanalegal states, a recognition that it no longer makes sense for cannabis

merchants to operate as cash-only businesses.

Without the Cole Memo's legal cover, several financial institutions thinking of offering banking services to marijuana merchants reportedly backed off. It also put electronic-payment providers and banks servicing marijuana merchants on notice they may soon have to shut those accounts down.

As of last September, some 400 financial institutions—about three-fourths of them banks, the rest credit unions—were banking marijuana merchants, up from 318 in October 2016, according to the latest data from the U.S. Treasury Department's Financial Crimes Enforcement Network (FinCEN).

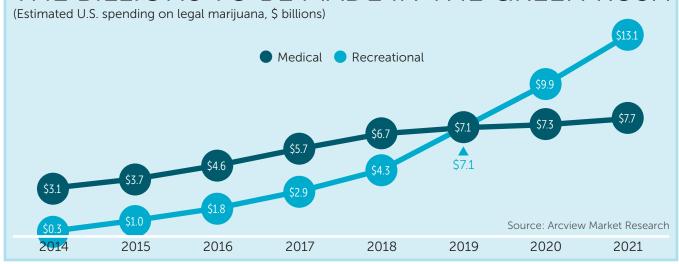
But as is often the case with a controversial subject, there are many twists and turns. A few weeks after Sessions's pronouncement, Treasury Secretary Steven Mnuchin muddied the waters with a seemingly contradictory statement.

Responding to questions from members of the House Financial Services Committee, Mnuchin





THE BILLIONS TO BE MADE IN THE GREEN RUSH



said he would not replace current FinCEN guidelines on banking marijuana merchants without having an alternative that avoids, as he put it, "bags of cash."

Mnuchin's reasoning was grounded in the belief that banking services make it easier for marijuana merchants to pay income and excise taxes. That's because they eliminate the cost of manually counting large cash tax payments on the receiving end—and the risk of employee theft at both ends—of the transaction.

Plus, bank services would reduce the need for merchants to keep large amounts of cash on premise, making them less likely to be targets for armed robbers.



'IT'S ONLY A MATTER OF TIME'

So far, 30 states have legalized marijuana, most for medicinal use. Eight states and the District of Columbia have legalized cannabis for both medical and recreational use.

In 2018, legal marijuana sales in the United States are projected to total \$11 billion, up from \$3.4 billion in 2014, according

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to San Francisco-based Arcview Market Research. In 2021, Arcview predicts that figure will exceed \$20 billion (chart).

That's a lot of mostly cash sales—and a lot of opportunity for electronic payments, which is why payments executives remain bullish about the legal marijuana industry, despite its political complexity.

"It's only a matter of time before marijuana merchants are granted equal access to banking, and electronic-payment services, because governments don't want these merchants paying taxes in cash," says Lance Ott, chief executive of Vancouver, Wash.-based Guardian Data Systems, a provider of enterprise resource planning applications and point-of-sale software for marijuana merchants. "Handcuffing a fast-growing industry by restricting or denying financial services to merchants is ridiculous."

Ott, who founded Guardian as a provider of a closed-loop payment system for marijuana merchants, is working in an advisory capacity with officials in Los Angeles to develop a payments system for cannabis businesses in the nation's second-largest city. The sale of recreational marijuana became legal in California on Jan. 1. California

voters had already approved the sale of medical marijuana in 1996.

A couple of years ago, Guardian transitioned out of payment processing for marijuana merchants to providing them business software. That was after its sponsor bank decided to stop serving marijuana merchants through independent sales organizations, Ott says.

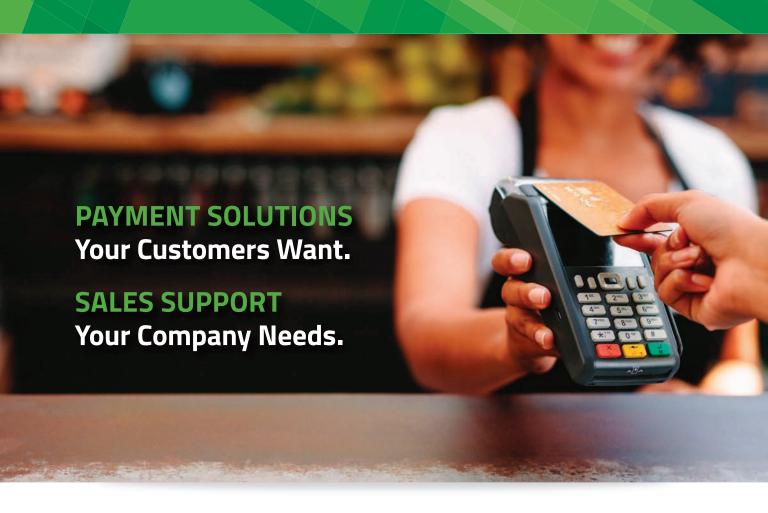
Los Angeles officials' decision to provide the framework for an electronic-payment system for marijuana merchants is sure to grab the attention of other states where cannabis has been legalized, says Ott.

"Los Angeles could very well spark the change to make payment services for marijuana merchants more widely available in the next 12 to 24 months," he says.

Broadening electronicpayments acceptance among marijuana merchants hinges on two things, payments executives say. The first is compliance with state laws governing the sale of marijuana. Second is developing alternative solutions to accepting Visa- and Mastercard-branded cards, as both networks prohibit marijuana-related transactions.

Both Visa Inc. and Mastercard Inc. cite adherence to federal

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law. But Mastercard adds that it continues "to monitor the situation, seek guidance from regulators, and inform merchant acquirers of any new developments," a Mastercard spokesperson says.



'A HUGE LEARNING CURVE'

Payments providers believe compliance is the more critical of the two keys to success. State regulators hold the bigger stick in that they have the authority to shut down noncompliant merchants, along with their banking accounts, and fine their business partners.

Avoiding potential compliance pitfalls begins with recognizing that the laws governing the sale of marijuana in states where it is legal are not all the same. In addition, ordinances can differ between counties and municipalities within a state.

"Applying generalities when it comes to compliance is a mistake," says Zachary L. Venegas, chief executive of Helix TCS Inc., a Denver-based provider of compliance and security services for marijuana merchants.

While it is the responsibility of the merchant to be compliant, several payments providers enforce their own compliance programs. The reason, they say, is that while many business professionals are opening retail marijuana locations, there are just as many inexperienced entrepreneurs opening stores. These rookies may unwittingly cut corners when it comes to compliance, payments executives fear.

Further, some cannabis entrepreneurs are former drug dealers who decided to go legitimate, so their commitment to staying on the straight and narrow may need to be monitored.

LEGAL MARIJUANA SALES, SELECTED STATES

(\$ millions)

State	2017	20211
Alaska	\$53	\$114
California	\$2,994	\$7,742
Colorado	\$1,608	\$2,003
District of Columbia ²	\$17	\$93
Maine	\$57	\$162
Massachusetts	\$126	\$1,168
Nevada	\$270	\$607
Oregon	\$499	\$863
Washington	\$1,059	\$1,427
1. Projected.	2. Only medical dispensaries operational so far.	

"There's a huge learning curve with some of these merchants when it comes to compliance, and that's why we have a compliance program for our merchants to make sure there are no issues, especially with our sponsor bank," says Steve Hahn, managing partner for Weed Pay LLC, a Newport Beach, Calif.-based provider of so-called cashless ATM services for marijuana merchants.

Besides demonstrating that transactions are legitimate, compliance includes such crucial items as making certain cannabis retailers are checking customer identification to assure they are not selling to minors; adhering to limits on the amount of marijuana that can be purchased; and ensuring that no firearms are on the premises.

Venegas also recommends verifying a marijuana merchant's license before opening an account and conducting a background check on store owners to avoid any potential compliance issues.

"If a merchant is loose on compliance, it puts the account, and your business, at risk," he says. "Colorado regularly performs undercover checks on merchant compliance." In 2012, voters in Colorado and Washington approved referendums making those two states the first to legalize recreational pot.



'LESS SKITTISH'

With the Visa and Mastercard networks off limits to marijuana merchants, several payments providers have developed alternative closedloop solutions to cash in on the so-called green rush, such as electronic wallets funded through the automated clearing house network.

Two of the higher-profile providers in the legal marijuana space are Calabasas, Calif.-based PayQwick Inc., which services 300 marijuana merchants across Colorado, Washington, Oregon, Arizona, and Alaska; and Littleton, Colo.-based CanPay, which processes for about 100 merchants in 10 states.

PayQwick, which is awaiting regulatory approval to begin

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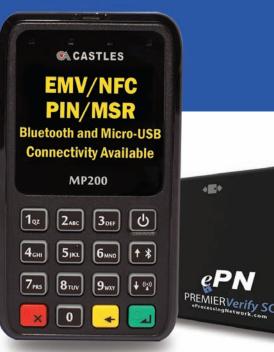
















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operating in California, Nevada, and Michigan, offers an e-wallet supported by a companion card that consumers use to make purchases at participating marijuana retailers. Consumers can sign up for the card at the PayQwick Web site.

To make a purchase, consumers fund their wallet through the ACH, then present the card at the point of sale. After the card is swiped through a terminal, the purchase is debited from the customer's wallet and routed to the merchant's account.

Users have the option of having their wallet automatically reloaded when the balance falls below a preselected level. There is no charge to consumers to set up a PayQwick account.

PayQwick, which was founded in 2014 and has bank partners in Washington and Colorado, declines to reveal its merchant fees, but says they are competitive with fees in other high-risk categories.

Like other providers in the legal marijuana space, PayQwick has a compliance program. "Compliance is what makes financial institutions less skittish about working with us," says company president Kenneth Berke. "It's important to be able to show that every dollar flowing through the network comes from a state-legal sale."

In addition to enabling electronic payments for consumers at the point of sale, PayQwick provides a business-to-business platform for marijuana businesses that includes electronic invoicing, bill payment, and state excise tax payments.



HAPPENSTANCE

CanPay, which landed the contract to provide payment services to Hawaii's eight dispensaries, offers a slightly different approach.

HOW TO VET A MARIJUANA PAYMENTS PROVIDER

Here are some key questions about payment processing that cannabis merchants should ask:

- What name shows on the consumer's bank/credit card statement for a purchase? (Hint: it should be the cannabis business's trade/DBA name.)
- Does the payment service disclose the financial institution(s) involved in the transaction flow and flow of funds?
- Do funds, at any point, leave the U.S. banking system?
- What is the funding timeline from purchase to deposit to the merchant's bank account? Longer than two days likely involves overseas and/or intermediate accounts.
- If Visa/Mastercard debit/credit cards are involved, what merchant category code is used?
- Are any intermediate currencies or other methods of storing value used to convert payments?
- Is the payment service required to be licensed as a money transmitter and/or money-services business? If so, is it licensed everywhere it operates?
- What name shows on the deposit to the merchant's bank account?
- Does the payment provider publicly disclose the cannabis businesses accepting its service?
- Does the payment service mention on its main Web site that it serves cannabis businesses, or does it use vague terms like "cash-intensive," "cash-only," or "highly regulated" businesses without identifying the marijuana industry?
- Does the payments provider collect state-issued licenses for each cannabis business it serves, and does it maintain current licenses?
- Does the payment processor require cannabis businesses to adhere to FinCEN guidance before using its service?

Source: CanPay

CanPay users link a checking account to the CanPay mobile app. After entering the purchase amount into the app, the customer receives a single-use token in the form of a quick-response code. Tokens expire after 30 minutes.

The merchant enters the amount of the purchase into the CanPay terminal, then scans the QR code on the buyer's mobile

digitaltransactions

phone into the terminal to complete the transaction.

CanPay transactions are cleared through one of about 20 financial institutions. The institution debits the consumer's checking account through the ACH and routes the money to the merchant. Merchant fees are about 2% of the transaction total.

CanPay, which began rolling out in late 2016, landed the



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'Handcuffing a fast-growing industry by restricting or denying financial

services to merchants is ridiculous."

-LANCE OTT, CHIEF EXECUTIVE, GUARDIAN DATA SYSTEMS

contract with Hawaii's dispensaries by happenstance, says Iris K. Ikeda, the state's commissioner of financial institutions.

After officials decided a cashless payment option was a necessity for it dispensaries, Ikeda began contacting financial institutions outside the state known to be providing banking services to marijuana merchants. She asked them about handling the merchant accounts for Hawaii's dispensaries, as no in-state institution had that experience.

Denver-based Safe Harbor Private Banking, which is one of the institutions CanPay works with and is a unit of Partner Colorado Credit Union, won the business. "We looked at a few payments providers, but since Safe Harbor already had the relationship with CanPay, it made sense to go with them," says Ikeda.

Currently, four of Hawaii's eight licensed dispensaries are up and running. The state legalized medical marijuana in 2015.

As part Safe Harbor's deal with the state, it can only provide merchant payment accounts to licensed dispensaries. Adhering to that stipulation precludes Safe Harbor from having a physical presence in the state, Ikeda says.

"There is no federal law that says a bank has to be in-state, but our agreement with Safe Harbor is very specific," says Ikeda.

Indeed, Carmella Houston, vice president of business services for Seattle-based Salal Credit Union, which banks more than 400 cannabis business accounts, says that while legal marijuana itself cannot cross state lines, money earned by cannabis merchants can flow to their banks across state boundaries, as well as through them to pay out-of-state vendors.

Another payment option is the cashless ATM. Weed Pay's solution allows consumers to insert a debit card into a POS terminal, enter their PIN and the amount to be withdrawn from their checking account, and receive a voucher that is accepted by the merchant as if it were cash.

Weed Pay, which services about 60 retailers in 13 states that have legalized marijuana, processes these transactions through an undisclosed PIN-debit network.

Hahn says cashless ATM transactions account for between 20% and 40% of purchases for merchants in Weed Pay's portfolio, and that the average transaction amount is \$60. Merchant fees are 4.95% plus 35 cents per transaction, and consumers pay a \$3 service charge.

In addition to its cashless ATM solution, WeedPay offers POS terminals and software that provides an audit trail for any marijuana product, from the growing stage to retail sale, to demonstrate end-to-end compliance.



'ON THE GROUND FLOOR'

With no shortage of electronic-payment options for cannabis merchants, the biggest hurdle to broadening acceptance remains the federal government. As long as marijuana is illegal at the federal level, most financial institutions, especially large banks, are likely to remain hesitant to dip their toes in the state-sanctioned waters, payments experts say.

It's for that reason that community banks and credit unions, which have a history of banking small businesses that large banks won't, are stepping up to partner with payment providers to serve legal marijuana merchants.

"Whether or not the federal government catches up with the states legalizing marijuana, there are opportunities to provide payment services to marijuana merchants," says Houston of Salal, which is a CanPay partner financial institution. "We saw a chance to get in on the ground floor of an expanding industry."

Until federal authorities shut down marijuana merchants or take away their bank accounts, close observers expect venturesome payments providers to continue to cash in on the green rush as more merchants, and the states that regulate them, look to move the industry away from cash sales. There are billions of reasons to do so.



COMPONENTS



Get Ready for Mobile PINs

John Stewart

After decades of requiring specialized hardware, the payments industry is moving toward PIN entry on off-the-shelf mobile devices. What's not to like?

he payments industry is, if anything, ultra-conservative when it comes to new technology and transaction security. Take PIN pads, for example. For decades, the industry has required that consumers enter a PIN on either a terminal or specialized PINentry device. Either way, the PIN was masked and fenced by rules and routines built into the guts of those devices.

No wonder. For all this time, the PIN has been the key to the cardholder's kingdom, to the cash he holds in his account. It's his little Fort Knox, with the secret PIN standing guard.

But now the industry has taken a step some see as anything but ultraconservative. It's not sweeping away all those specialized PIN pads. Instead, for the first time, it's allowing merchants without those devices to take PINs on the same mobile phones and tablets anyone can buy at Walmart.

That opens up card acceptance for a whole universe of merchants, from craft-fair sellers to bodegas to pop-up stores and brick-and-mortar establishments. "Now, all of a sudden, all those food trucks get carded," says Michael Moeser, director of payments at Javelin Strategy & Research, Pleasanton, Calif.

The new dispensation goes by several names. The most common are "PIN

on glass," "software-based PIN," and "PIN on mobile." Whatever you call the concept, it has stirred up quite a bit of excitement, as you would expect, among companies that specialize in mobile point-of-sale offerings, or mPOS.

Square Inc., for example, started doing PIN on mobile in March 2016 in Australia and then brought the technique to the United Kingdom a year later. "It doesn't make sense to develop solutions with expensive hardware PIN pads, which are cost-prohibitive to serving smaller sellers, when the same goals can be accomplished with software and connected services," says Mary Kay Bowman, head of payments at the San Francisco-based company, in an e-mail message.

But not everyone shares her enthusiasm. Some payments veterans see in mobile PINs a security threat that overshadows any potential benefit from expanded merchant acceptance. "I think this has an unintended consequence of catastrophic impact," warns Dave Keenan, senior vice president for product management in card services at Fisery Inc.

'It's an App'

Square is not alone in its enthusiasm for software-based PIN entry. The potential

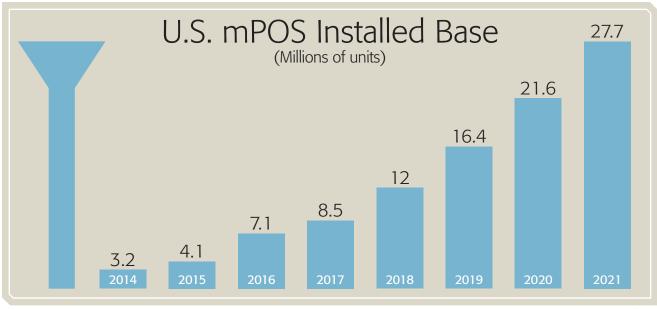
to reach perhaps hundreds of thousands of new merchants has attracted technology startups like MagicCube Inc., a Santa Clara, Calif.-based company founded in 2014 by Sam Shawki, a former Visa Inc. executive.

Shawki says he spotted the opportunity while still at the card network, and left to pursue it. "I thought these [PIN] attachments should disappear. It's an app," he recalls. Indeed, talking about traditional, hardware-based PIN entry, he says, "is like discussing whether the Walkman is going to continue."

Estimates of the size of the potential market vary. One way to look at it lies in the explosive growth of mobile points of sale. In the United States alone, the number more than doubled between 2014 and 2016, and is forecast to triple by 2021, according to figures compiled and estimated in late 2016 by BI Intelligence (chart, page 35).

Right now, while these merchants can use their dongles and smart phones or tablets to accept cards, they can't enter PINs, leaving merchants no alternative but to collect the screen scribbles people call signatures. But the need might be even more acute overseas, in markets like Europe, where EMV transactions—both credit and debit—are routinely secured with PINs.

Another factor that could drive the market is the decision by all of the major card networks to make signature authentication voluntary. These moves, which came late last year and



Source: BI Intelligence

early this year, rocked the industry because they represented an aboutface from decades of enforcing a signature requirement.

Now, some observers say the moves could foster software-based PIN entry as merchants look for an alternative. "I think this is a step in prep for PIN," says Shawki.

'A Broader Move'

Regardless of the pros and cons, PIN on glass has now been codified in a standard issued in January by the PCI Security Standards Council, the Wakefield, Mass.-based organization that establishes the rules for payment card security.

The new standard applies to EMV credit and debit transactions and outlines rules for entering a PIN directly into a "consumer off-the-shelf," or COTS, device. It requires a couple of critical components: a secure app on the device for PIN entry, and an approved card reader to glean account details from the card's chip. This isolation of the PIN from the rest of the cardholder's details is crucial, according to Troy Leach, chief technology officer at the Council.

"The Primary Account Number (PAN) is never entered on the COTS device with the PIN," he says in an email message. "Instead, that information

is captured by an EMV chip reader that is approved as an SCRP (Secure Card Reader for PIN) that encrypts the contact or contactless transaction." In this way, he adds, the standard works against so-called correlation attacks, in which criminals can combine PINs with account credentials that belong to the same cardholder.

The rules also require "continuous" monitoring, Leach says, to check the integrity of the software that receives the PIN as well as to detect "anomalies in the COTS environment."

Early players like Square celebrate the new standard's blessing on software, which they say could open the door for greater convenience as well as lower cost. "It's ... a broader move from legacy, static, hardware-based defenses to dynamic, responsive, field-upgradable software-based defenses," says Bowman.

The Council's test requirements, which detail how testing laboratories can certify devices for software-based PIN entry, were due out in February, about a month after the standard itself.

On to the IoT

With the PCI Council rules in place, some observers argue the market for PIN on glass could expand even more rapidly. For one thing, merchants that have shunned the technology may start using mobile POS now that they don't have to buy a PIN pad. "A lot of merchants don't have PIN pads because they don't want to spend the money," says Javelin's Moeser.

Square's Bowman also cites PIN pads as an impediment for her company's ambitions for small merchants. "The objective is to accept chip and PIN payments in the most accessible and cost-effective way. We decided to





meet that objective with an eye toward innovation. Everything, including payments and commerce, is increasingly becoming mobile," she says.

Besides hardware costs, collecting PINs could further reduce costs for merchants by allowing them to route transactions over PIN-debit networks. Moeser adds.

Whether the rosy outlook for PIN on glass will actually play out can best be judged by looking at the experience of Square, which has been at it the longest, deploying its own technology. The company plays it close to the vest when it comes to hard details, but Bowman says all Square sellers in

both Australia and the U.K. are using its PIN solution.

"We are looking to expand mobile PIN acceptance to other Square international markets," she adds. Outside the United States, Square is available in Canada and Japan, in addition to Australia and the U.K. Beyond mobile POS, Square looks to applications in markets such as the Internet of Things, which embraces everything from smart watches and other wearables to automobiles.

'The Long Pole'

Not all payments experts are on board this accelerating train, however. Fiserv's Keenan, for one, argues the new PCI standard could end up making more trouble than the potential transactions are worth. "There is no evidence [PIN on glass] expands card-based commerce, and it doesn't add security," he says.

Indeed, Keenan worries that the technology will undermine PIN security by wiping out years of merchant and consumer training. "For 50 years, we've told people, 'Don't give out your PIN,'" he says. "PIN on glass encourages you to give your PIN to somebody you don't know on a device you don't control." This, he says, contrasts with the experience of mobile services like Apple Pay, where the mobile device remains in the hands of the consumer.

"Without question, there will be a fraudulent merchant" taking advantage of software-based PIN entry, Keenan insists, adding that the issues surrounding the technology have not been sufficiently aired. "There needs to be robust industry debate. That debate has not taken place," he says.

Other observers applaud the technology but would have preferred the standard be developed by a body like the American National Standards Institute. The PCI Council was formed by the big card networks and in the eyes of some merchants and other payments executives remains under the influence of those networks.

An ANSI standard, these observers argue, might have reflected the interests of a wider constituency, even if the effort might have taken longer. ANSI "may not be quite as fast as proprietary groups [like the PCI Council], they may be the long pole, but the long pole is usually the sturdiest one in the tent," argues Terry Dooley, executive vice president and chief information officer for the Shazam Network, a Johnston, Iowabased national PIN-debit network.

Still, Dooley is a fan. "PIN on glass will be good for a lot of markets. It will drive transactions into markets that don't have any today," he says.



Twenty Years of Payment Gateway Excellence

For 20 years, USAePay has been shaking up how things are done in payments. Since inception, USAePay has been leading the payments industry, working directly with reseller banks, ISO's, merchants, and developers.

Back in 1998, computers and the Internet had limited capabilities. However, over the last couple of decades, technological advancements have been taking place all around us at an exponential rate.

"We strive ahead by thinking of things that no one else has done before," says Ben Goretsky, CEO of USAePay. "We don't sit around and wait for new technology to come out. We think of what no one else has done and continuously develop our product offering to stay ahead and provide the best payment solutions."

Over the years, our company has developed extensive elements that allow our clients to do so much more—from running better reports, processing payments efficiently, improving mobility and connectivity, to decreasing fraud risk.

USAePay has developed its vast product offerings over the last 20 years to provide resellers with the best experience. USAePay has been constantly innovating its products to provide the right solution for resellers and their business's needs. From eCommerce to retail, USAePay provides a myriad of solutions to work with resellers in any industry. Unlike other payment gateways, USAePay does not sell directly to merchants, allowing for ISOs and resellers to flourish.

Merchants working with USAePay's resellers benefit from being given the opportunity to endlessly grow without having to make new accounts. As with many successful businesses out there, merchants have the ability to start out as a small business then grow into an enterprise, all while still using a USAePay certified reseller. USAePay provides an omnichannel experience

for merchants, allowing them to grow and expand with its groundbreaking tools. Along with 24/7 live support, USAePay is available to assist merchants during their journey as a growing business.

Developers are given a variety of tools to allow for customization and seamless integration of USAePay's products. USAePay's APIs include example code in multiple languages and comprehensive testing environments to distribute customized solutions. The Developer Library contains documentation, examples, source code and controls for easy integration with USAePay's gateway into developers' software. USAePay's test accounts have further evolved, allowing developers to try out gateway functionality within their applications, ensuring exceptional results. The Payment Engine allows developers to work with various EMV capable payment terminals without the hassle of integrating and certifying each solution. As businesses become more mobile-oriented, USAePay's Software Developer Kit for iOS and Android devices allows developers to build top-notch mobile applications to create an effortless experience for end users.

The world continues with advancements in technology and becoming even more digital dependent, creating strong implications for the future of payments. "We are moving towards a frictionless society," says Goretsky.

Since 1998, USAePay has brought advancements to the payments scene always looking ahead, knowing that the future is constantly evolving. When choosing a payment gateway, it is essential to choose one that not only focuses on the present but the future as well. It's time to get ahead of the game with USAePay.



ENDPOINT

Regulators' politics should be irrelevant and not discernible. However, with former director Richard Cordray at the CFPB's helm, politics infused everything.

Has Trump Tamed the CFPB?



Eric Grover is principal at Intrepid Ventures, a Minden, Nev.-based consultancy. Reach him at eric.grover@ intrepidventures.com

Acting director Mick Mulvaney is off to a promising start, but ensuring that the sprawling agency will always hew to the rule of law remains a challenge, says Eric Grover.

t Davos in January, President Trump lambasted "unelected bureaucrats" who were imposing "crushing and anti-business and anti-worker regulations on our citizens with no vote, no legislative debate, and no real accountability." He promised, "In America those days are over." The absolutist Consumer Financial Protection Bureau epitomizes the unaccountable agencies Trump pledged to curb.

He's made good—to a point.

In short order, acting CFPB director Mick Mulvaney has reined in a lawless and politicized bureau. But it hasn't been institutionally checked by the courts or legislatively restrained. Last year's proposed Financial Choice Act would have circumscribed the Bureau, but it ran aground in the Senate.

In the courts, a split decision from the U.S. Court of Appeals for the District of Columbia on Jan. 31 ruled that the CFPB having a single director with for-cause tenure protection is constitutional. No matter Mulvaney's yeoman's work, a future director appointed by the next Democratic president, say Kamala Harris or Eric Schneiderman, will reverse the transformation and unleash a predatory CFPB on the financial-services industry.

Near-Plenary Power

In his seminal book, *The Spirit of Laws*, French philosopher Montesquieu warned liberty requires that judging, legislative power, and

executive power be separate. Influenced by Montesquieu, James Madison in *The Federalist Papers* wrote that "all powers, legislative, executive, and judiciary, in the same hands" is "the very definition of tyranny."

The absolutist CFPB is Madison's nightmare. Its architects insulated it from constitutional checks and balances. It writes its own budget, drawing funds from the Federal Reserve, and is run by a single director with what one Congressman called "unchecked unilateral powers."

The Bureau has brazenly abused its nearplenary power, suppressing credit availability for the underserved, inhibiting financial-services innovation, subjecting firms and industries it didn't like to regulatory waterboarding, and making a mockery of the rule of law.

Regulators are duty-bound to enforce the law. Their politics should be irrelevant and not discernible. However, with former director Richard Cordray at the agency's helm, politics infused everything.

Dodd-Frank banned the Bureau from regulating auto dealers' finance programs. Nevertheless, the CFPB went after Ally Bank's wholesale autofinance business, concocting charges of racial discrimination when it didn't know borrowers' race and had no evidence of intent to discriminate.

Mortgage lender PHH contended the Bureau's interpretation of the Real Estate Settlement Procedures Act (RESPA) and a \$109 million fine were illegal and its structure unconstitutional.

Protecting Businesses and Customers from Fraud

According to the Breach Level Index, more than 9.24 million data records have been lost or stolen since 2013, and while the introduction of EMV chip cards has caused a drop in counterfeit card fraud, US Payments Forum says "card not present" (CNP) fraud is on the rise. "The United States is especially vulnerable to CNP fraud," the group says. "It leads the world with the highest percentage of e-commerce sales, with 77 percent of U.S. merchants selling online."

In fact, the report from US Payments Forum predicts EMV implementation—which has made counterfeit card fraud exceedingly difficult—will lead to an increase of CNP fraud in the U.S. from \$3.1 billion in 2015 to more than \$6.4 billion in 2018. That means data security and fraud protection are more important than ever for businesses and their customers. So what can be done to help?

To start, processors and payment companies can continue to increase efforts to educate businesses on the importance of fraud and data protection. North American Bancard (NAB) takes credit card fraud seriously and believes that education and awareness go a long way when trying to stop fraud in its tracks.

Here are some basic tips you can share with businesses to help them protect against CNP fraud:

- 1. Network Security. Merchants should make sure that only those who absolutely need it have access to their systems and customer information. If a merchant doesn't need remote login support, they should deactivate it. They should also make sure all of their computers and servers are up to date with the latest program versions and security patches. Use firewalls and other methods to restrict access to their networks.
- 2. Data Storage. Merchants shouldn't store data they don't need or shouldn't have. If they don't need a full card number, they shouldn't keep it. Don't store PIN or card verification numbers for any reason or length of time. If merchants can, they should use data encryption and/or "tokenization" for all sensitive information they accept, transmit or store. Tokenization was first introduced to merchants in 2001 by EPX, a North American Bancard company, and replaces account numbers with values that are meaningless to fraudsters.



3. Use qualified service providers/vendors.

If merchants are outsourcing for the payment acceptance and processing part of their ecommerce business, they need to make sure the company they partner with is doing everything right. They can do this by checking to see if they are registered as a "Qualified Integrator Reseller" (QIR). This is now a requirement with most of the Card Networks. It's also important that merchants, and the equipment they use, are PCI compliant. What does PCI mean? The Payment Card Industry Data Security Standard (PCI DSS) is a set of requirements designed to ensure that companies that process, store, or transmit credit card information maintain a secure environment. If a business is not PCI compliant, there is a good chance the owner will incur additional fees through the payment processor to get them to comply with the requirements.

- 4. Don't be afraid to reject an order. Merchants should make sure that every piece of information asked for when customers place orders is provided. If something is missing, merchants need to reject the order.
- **5. Look into discrepancies.** If there is a difference between the billing address and the shipping address, merchants should be cautious. While it could be that the order is a gift, if there is anything that raises red flags, they should call to confirm the information or just cancel the order.

For more information on how you can help NAB's 350,000 satisfied merchants continue to grow and protect their businesses, while helping yourself to some of the biggest bonuses and most rewarding residuals in the payments industry, visit www.gonab.com or call (888) 229-5229.

On Jan. 31, the D.C. circuit, *en banc*, unanimously rejected the CFPB's reinterpretation of the RESPA. However, worryingly, it ruled 7 to 3 that the Bureau's structure, with a single director only removable for malfeasance, is constitutional. If not overturned, this decision would greenlight Congress to put additional administrative agencies outside the president's control.

Zero Dollars

Mulvaney's appointment as acting director after Cordray's departure was a watershed.

His Jan. 23 memo to all hands declared the CFPB's days of "pushing the envelope" of the law in the name of the "mission," as it did under Cordray, are over. He quoted the great lawyer Sir Thomas More in *A Man for All Seasons* to underscore his point that there would be no more going after real or imagined bad guys regardless of the law.

Out of the gate, Mulvaney put a 30-day freeze on hiring and new rule-making. He requested zero dollars from the Fed for the second quarter of fiscal 2018, intending rather to draw upon a reserve that the CFPB had, arguably unlawfully, built up, totaling \$177 million.

He's put the CFPB's paydaylending and mortgage-data rules on hold for further review.

Mulvaney instructed staff to cease using civil investigative demands to launch fishing expeditions and bully targets. He instructed that staff rule-making abide by the Administrative Procedures Act.

He also ordered staff to avoid rule-making by enforcement, which under Cordray was common practice. Justice requires that men know the law before being subject to it.

But Mulvaney won't be there forever.

Trump will nominate a 5-year director. George Mason law professor Todd Zywicki and former Republican Congressman Randy Neugebauer,

both CFPB critics, were rumored to be candidates. Either would provoke fierce opposition from Sen. Elizabeth Warren, who pushed for creation of the CFPB, and her ideological kin.

Candidates potentially more palatable to the left have been mentioned, like Ohio state lawmaker Jonathan Dever, former Bush Treasury official Dan Iannicola, and National Credit Union Administration Chairman J. Mark McWatters. If, however, they don't provoke outrage, or at least counterfeit outrage, from Warren, there's a problem.

Restricted Mandate

So, can the Bureau be permanently tamed?

There aren't enough votes in Congress to eliminate it. However, if Republicans hold the House in November and win a working majority in the Senate, there may be sufficient votes to bring it to heel. That would entail a number of changes.

First, Congress must control its purse strings. In defending its prerogative, Congress should be bipartisan. In practice, however, many Congressional Democrats calculate that, while they won't always control Congress and the White House, by vesting unbridled power in an executive agency they can shield their agenda from the politically accountable legislature.

Next, the CFPB should be run by a bipartisan board. Trump and Mulvaney may yet cause Democrats to welcome one.

Its mandate should be restricted to policing traditional unfair and deceptive practices. It should eliminate the "abusive" standard, which is highly subjective and itself subject to regulatory abuse.

In his book *Is Administrative Law Unlawful?* Colombia law professor Philip Hamburger makes a cogent case that it is. The CFPB should rely on independent courts for adjudication, where independent rather than administrative judges, due process, and jury trials are available to the accused.

And fines it collects that are not disbursed as restitution to consumers should go to the Treasury.

The CFPB's constitutionality may yet reach the Supreme Court. Congress, however, shouldn't rely on the courts to fix the problem it created.

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