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DIGITAL TRANSACTIONS®

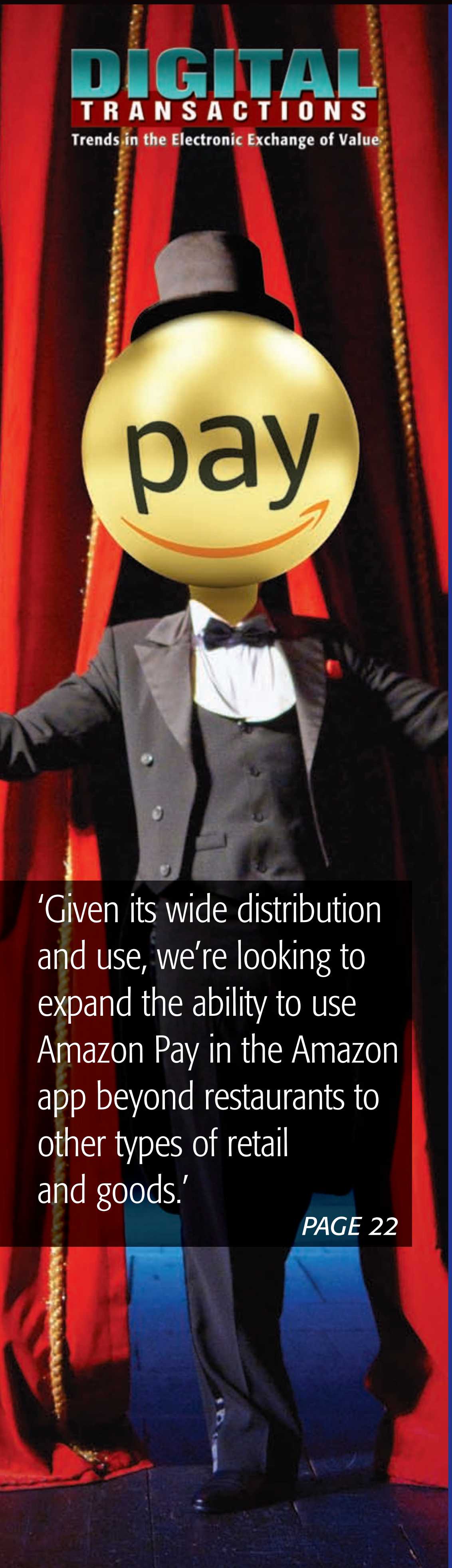
Trends in the Electronic Exchange of Value

PRIMETIME FOR AMAZON PAY

How Amazon's payments unit is stepping out onto a bigger stage.

ALSO IN THIS ISSUE

- A Hazy Outlook for Pot Payments
- So You Always Wanted To Be a PayFac?
- Trying Wearable Payments on for Size
- PayPal's POS Strategy



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Same-day processing for debits on the automated clearing house network didn't start until Sept. 15, but by the end of December same-day debits had nearly caught up with same-day credits.

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Solutions are coming for slow speeds and high fees, says Eric Brown, who argues that even now the advantages for merchants are too good to pass up.

Cover illustration: Jason Smith, Fotolia.com

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The Allure of Brick And Mortar

Nobody knows for sure, but some time this year Amazon.com Inc. could unleash a double-barreled assault on the world of physical-store payments. As our cover story this month lays out, the Seattle colossus has already introduced Amazon Pay Places, a mobile order-ahead application for Amazon Pay, and is working to expand it.

Beyond that, it's perfecting its Alexa voice-based commerce technology, which can allow users to interact with restaurants and other stores. Last November, that technology was opened up to outside developers, who can integrate Amazon Pay capability.

But Amazon is far from alone in this ambition. As our story starting on page 29 makes clear, PayPal Holdings Inc. entertains similar aspirations, even if it's pursuing them in a different way.

Over the past two years, PayPal has patiently built alliances, starting with the major card networks and now with some of the nation's biggest financial institutions, that give it the keys it needs to unlock physical-world payments. Already, PayPal has started pushing its Venmo person-to-person payment app to the point of sale, allowing users to pay at the cash register in the same way they pay other people.

This is not a new strategy for PayPal. Several years ago, it made a run at POS payments through a plastic card and a deal with the Discover Network, which agreed to route the transactions. That effort faded, and now version 2.0 is emerging.

Why this ambition to get physical? There are any number of possible explanations, including user demand and the never-ending hunt for revenue growth. Venmo, for example, can charge merchant fees for acceptance, giving it a revenue base it doesn't have with its free P2P service.

But the more basic explanation is that physical stores are still, even after all these years of e-commerce, where the bulk of transactions are. Forrester Research estimates online sales command a 12.7% share of overall retail sales volume. The firm predicts that share will grow to 17% by 2022. Simple math tells you that, even four years from now, physical-world stores will still control 83% of retailing.

To be sure, online sales are growing much faster—five times faster, according to Forrester. But can payments firms afford to ignore that huge pool of POS transactions, many of which are still consummated on checks and cash, or with little if any feedback to merchants in the form of customer data or to customers in the form of rewards?

Not likely. Which is why two huge e-commerce players are making their play for the POS. We won't pretend to compute their chances of success. The marketplace will do that, no doubt swiftly.

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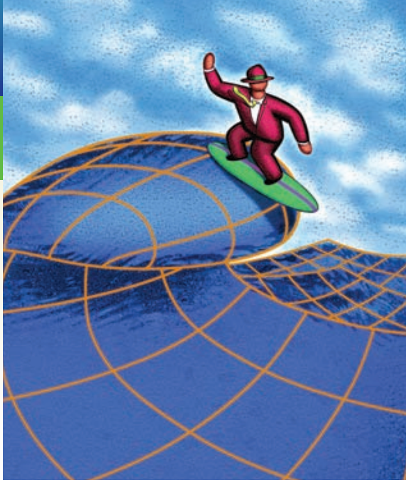


Trends & Tactics

The Hazy Horizon for Cannabis Payments

After a short-lived scare, investors in the budding cannabis sector last month didn't seem to be rattled by the hard line being taken by U.S. Attorney General Jeff Sessions against their industry. But the legal marijuana industry is certainly no closer to getting payment card merchant accounts and other mainstream financial services, at least for the time being.

Sessions announced Jan. 4 that the go-easy federal approach to the marijuana industry in states where cannabis is legal, announced in 2014 by the Obama Administration through its so-called Cole Memo, was over. Instead, Sessions is giving U.S. attorneys in each state discretion over enforcement of federal laws regarding cannabis.

At the federal level, cannabis remains a Schedule 1 substance, in league with harder drugs such as heroin and LSD. Because of that, most banks have refused to provide merchant accounts or other financial services to dispensaries and industry suppliers, even after the Cole Memo came out.

Surprisingly, the stocks of about a dozen publicly traded vendors to the cannabis industry—most based in the U.S. and Canada, with one in the United Kingdom—resumed their upward trajectories after taking a hit the day Sessions made his announcement. Some firms saw their share prices dip by more than 20% that day, but many recovered fast, with several up by double-digit percentages. As of mid-January, the companies' collective gain since Dec. 1 was 26%, according to Yahoo! Finance.

What gives? Part of the reason could be that investors in cannabis companies believe Sessions's position will not survive in the long term in light of the increasing number of states, most recently California, that have legalized recreational and/or medicinal pot.

"I don't think conservative pension funds or mutual funds are putting money in these industries," says payments consultant Eric Grover, principal at Minden, Nev.-based Intrepid Ventures. But individual investors and some investment managers willing to take a risk "are basically making a bet that these companies won't be put out of business. If that plays out, they stand to profit handsomely," he says.

Still, consultant and payment-facilitator executive Todd Ablowitz, chief executive of Centennial, Colo.-based Double Diamond Group, says Sessions's new policy "didn't help any" in bringing mainstream financial services to the cannabis industry. He predicts that the development is pushing the federal and state governments

toward a showdown. "I think it has to come to a head," Ablowitz says.

In January, 18 state attorneys general wrote a letter to Congressional leaders asking them to advance legislation allowing states with legalized medical or recreational use of marijuana "to bring that commerce into the banking system."

The frostier climate in Washington hasn't stopped one cannabis payments entrepreneur from going forward with a new service. Jeremy Roberts, chief executive of Las Vegas-based Medical Cannabis Payment Solutions, announced his system for medicinal marijuana dispensaries, dubbed Green, on the same day that Sessions made his announcement.

Green is a private-label debit system that does not provide general-purpose payment card acceptance, but does enable state-licensed dispensaries to store customers' information and accept payments with just a few clicks, Roberts says.

"We don't, therefore, have the issues with banking that others have because we can comply with state regulations and aren't violating laws not covered by federal marijuana protection," says Roberts by email.

Roberts remains hopeful about the cannabis industry's future. "Investors and patients need not panic or worry," he says. "This is a marathon, not a sprint, and indictments are not imminent."

—Jim Daly, with additional reporting by Kevin Woodward

How Visa's About-Face on Signatures May Spur EMV Adoption

Visa Inc.'s announcement last month that it will make signature authentication optional for EMV contact and contactless transactions in North America starting in April might provide another boost for merchants who have yet to adopt chip-card acceptance, suggests one analyst.

Signatures remain a requirement for Visa magnetic stripe-based transactions not subject to existing no-signature policies for low-value transactions.

Visa's move, joining that of Mastercard Inc., Discover Financial Services, and American Express Co., which earlier also said they will make signatures optional with an April rule change ("Signing off," December 2017), "is an expected move by the card network leader," says Michael Moeser, director of the payments practice at Javelin Strategy & Research, a Pleasanton, Calif.-based advisory firm.

"Visa has taken a sensible approach in specifically calling out EMV and contactless-eligible transactions for elimination of the signature requirement," he says in an email. "By maintaining the need for older tech-based mag-stripe transactions to keep signature, it further incentivizes both issuers and merchants to transition to more secure technologies, such as EMV, to battle counterfeit card fraud at [the] point of sale."

EMV, according to Visa's data, has been successful at reducing counterfeit card fraud at the point of sale. Less than two years after the U.S. liability shift for EMV chip acceptance launched, fraud declined 66% at EMV chip-enabled merchants, the card brand says. More than 460 million Visa-branded EMV chip cards have been issued.

A retailer trade organization, the Merchant Advisory Group, welcomed Visa's decision. "MAG appreciates the final move by Visa to eradicate this dated cardholder-verification method," a note to MAG's members read. In October, at the time of Mastercard's announcement, Wal-Mart Stores Inc. praised the decision.

Other merchants may like the move, too. "It will be well-received by merchants, since it simplifies the payments process and reduces friction, but it will take a while for systems to be adjusted and team members re-trained," says Thad Peterson, senior analyst at Aite Group LLC, a Boston-based firm. "For customers, I don't think it will dramatically increase spend. Instead they may just be saying 'It's about time.'"

—Kevin Woodward

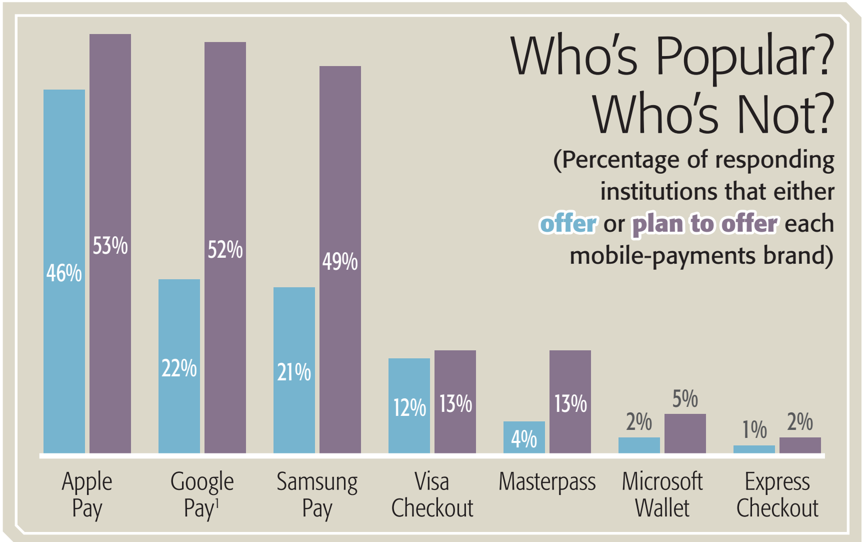
Security Fears Hobble Mobile Payments ...

If you ask consultants what's holding back mobile payments in the United States, you'll get answers ranging from lack of acceptance ubiquity to malfunctions at the point of sale to spotty rewards to consumers' perceptions that payment cards work just fine.

Now the nation's financial institutions have weighed in on the matter, and their answer is: their own and consumers' security fears.

Fifty-one percent of banks and credit unions cite security concerns as a "high" barrier to consumer adoption, according to a report released in January by the Federal Reserve Bank of Boston. Another 35% rate these concerns as a "medium" barrier, and only 14% call them a "low" barrier. No other factor scores as high in the survey, which consolidates results gathered in 2016 from 706 financial institutions across seven Fed districts. Some 450 of these institutions responded to the question about adoption barriers.

Another "high" barrier, cited by 44% of responding institutions, is "low merchant acceptance/lack of merchant interest." A further 44% rate this as a "medium" barrier.



1. Formerly Android Pay

Source: Boston Fed

Not surprisingly, the survey that forms the basis of the Boston Fed's report, entitled "2016 Mobile Banking and Payment Practices of U.S. Financial Institutions," found consumer adoption and usage rates lagging. Some 211 institutions said they offer mobile payments, and of these 144 track enrollment, while 131 track usage. Eighty-one percent of those that track the matter report an enrollment rate of less than 5% of the customer base. Just 1% say the rate ranges from 35% to 50%. For usage, the percentages are the same.

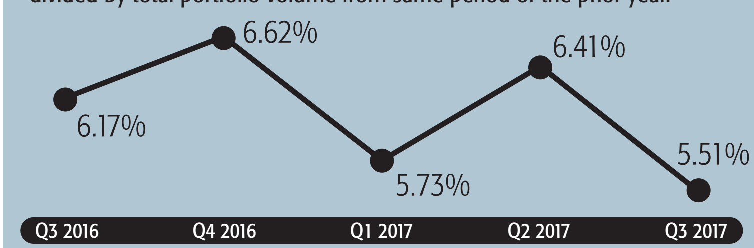
"Given some of the challenges related to security and merchant acceptance, customer enrollment is growing at a slow rate," says the report.

What's at the bottom of these challenges? Much has to do with a crucial difference between mobile payments and its close cousin, mobile banking. Banks and credit unions "directly manage and control access to their mobile-banking services, but mobile payments can be offered by third parties independent of the [financial institution] (e.g., merchant and wallet provider mobile apps) and involve

MONTHLY MERCHANT METRIC

Growth in Same-Store Sales Year Over Year

Annual volume change/growth of retained (non-attrited) 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 datawarehouse of over 3 million merchants in the U.S. market. The ability to understand this data is important as SMB merchants and the payments providers that serve them are key drivers of the economy.

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

multiple parties in the transaction process," the report says. "Therefore, there are more points of vulnerability and less standardization of mobile-payment functions and processes."

The most prevalent security concern for financial institutions is "inadequate customer security behavior," with 64% of 450 respondents rating it a "high" concern. Coming a close second, at 63%, is "card-not-present fraud."

As a result, the horizon for mass adoption of mobile payments continues to recede. Among all 706 responding institutions, 80% said it will take anywhere from three to five years for the service to achieve "industrywide consumer adoption" at the point of sale. For in-app and mobile Web usage, 75% cite the same time span.

For now, Apple Pay enjoys a wide lead among the 388 banks and credit unions that say they already offer or plan to offer mobile payments, with 46% currently offering Apple Inc.'s wallet, and another 53% saying they plan to (chart). For rival "Pays" Google Pay, from Alphabet Inc.'s Google unit, and Samsung Pay, from Samsung Electronics Co. Ltd., the corresponding percentages are 22%/52% and 21%/49%, respectively. Google Pay was formerly known as Android Pay.

Lagging well behind, however, are Visa Checkout, Mastercard Inc.'s Masterpass, Microsoft Wallet, and AmEx Express Checkout.

—John Stewart

... Opening a Door for Tech-Oriented Payment Cards

(Graphic: Dynamics)

The Wallet Card: A "win-win" business model for digital payments?

When major technology companies started launching mobile-payments services a few years ago, many observers figured digitized and tokenized card credentials would soon replace old-fashioned plastic. But now, the chronically sluggish adoption and usage rates these mobile wallets have registered are lending new life to plastic cards.

The twist is that the next generation of payment cards will be stuffed with technology associated with smart phones, including a display, push buttons, cellular connections, and messaging capability.

The first such cards could hit the market as early as this year. Dynamics Inc., a Pittsburgh-based developer, introduced its Wallet Card last month at the CES (formerly Consumer Electronics Show) in Las Vegas, with an assist from partners like Visa Inc.

The card is standard size and thickness for a credit or debit card yet features a cellular chip from Sprint, a self-charging battery, a display, and buttons the cardholder can use to toggle between card accounts. The card can be instantly issued at bank branches and is expected to have a useful life well beyond that of conventional cards.

Dynamics says it's in talks with international banks, including Emirates NBD, that could start issuing the Wallet Card within months. As for any U.S. issuers, there is "no specific" launch date right now, a company spokesperson says.

The card garnered headlines for Dynamics, a company that has largely labored in the shadows of the payments industry developing the capability to embed phone-like features in standard plastic cards. Now, an opportunity may have opened with the disappointing results of mobile payments.

"We have always asked ourselves, why is everyone trying to move payments to the phone?" says Jeff Mullen, founder and chief executive at Dynamics. The plastic card, he says, is a "workhorse" for payments, with untapped potential that the right on-card technology can unlock.

Clearly, mobile-payments services from the so-called Pays, powerhouse tech firms Apple Inc., Alphabet Inc., and Samsung Electronics Co. Ltd., have so far failed to wow consumers (see previous story).

By contrast, the plastic card is a familiar form factor, Mullen argues, constituting the "biggest device market in the world," with 20 billion issued. "The phone is great for communication, but until you see people put their car keys or house keys on their phone, they won't put their card keys on their phone," he says.

Still, the Wallet Card could face formidable challenges. Previous efforts at next-gen smart cards, including products from startups like Coin and Plastc that allowed consumers to load multiple cards, came to nothing.

Another hang-up could be the card's cost. Mullen won't give specifics, but

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says "it's not as high as you think." Issuers could charge cardholders for both the card and the cellular signal, but Mullen doubts they will. That's because the card offers them new messaging capability they can use to market lucrative services or combat fraud.

And its durability will eliminate multiple re-issues, he adds. At the same time, issuers can avoid the cost of card re-issuance in case an account is compromised by simply shutting down the account on the card and replacing it remotely

But on this point, at least, observers are skeptical. "These cards will still be much more expensive to issue than will traditional cards, and there will be upfront setup to manage the over-the-air communications with the cards," notes Rick Oglesby, principal at AZPayments Group, a Mesa, Ariz.-based consultancy.

"There's no proven consumer market for wallet cards so it will be highly speculative for issuers to invest in them," he adds. "The business case for issuers will still not be strong."

But while it may take a while, the Wallet Card could ultimately exert a strong appeal for issuers, say some experts. "The capability to immediately replace an account that has been compromised without issuing new plastic is a significant benefit," says Thad Peterson, a senior analyst at Aite Group, a Boston-based consultancy.

Dynamics has attracted more than $110 million in investment capital and has been working on related technology for years. As early as 2010, it produced a card for Citigroup Inc. that featured buttons cardholders could press to apply loyalty rewards for a purchase or use a credit line.

Now, Mullen figures his company has the device banks and credit unions are looking for. "The Pays don't have a win-win business model," he says. "We do."

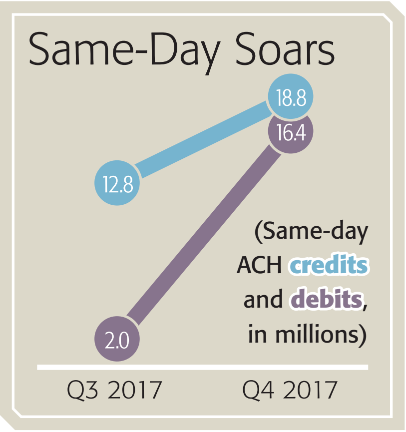
—John Stewart

Debits Already Account for Almost Half of Same-Day ACH Volume

Same-day processing for both credits and debits on the automated clearing house network finished its first full quarter on Dec. 31, and numbers released a couple of weeks later show a solid increase in volume and dollars. In particular, same-day debits, introduced Sept. 15, are growing fast and finished the final quarter accounting for nearly half of all same-day transactions.

All told, financial institutions handled 75.1 million same-day credits and debits in 2017, of which 18.3 million were debits, according to the numbers released by NACHA, the Herndon, Va.-based governing body for the ACH. Same-day dollars processed totaled $87.1 billion in value, with $72.5 billion stemming from credits and the balance from debits.

While that dollar volume is a "small fraction" of the total value processed on the ACH last year, it represents "an impressive start for a new ACH product," says Sarah Grotta, a research analyst at Mercator Advisory Group who follows the ACH.



Source: NACHA

For the fourth quarter, total same-day transactions came to 35.2 million, up 138% over the 14.8 million recorded in the third quarter. In particular, December chalked up a 50% jump over November, notching 15.2 million transactions.

NACHA did not report dollar value by quarter, but in terms of transactions, debit volume is increasing rapidly. Available for only 15 days in the third quarter, same-day debits totaled 2 million, or an average of 133,000 a day. In the fourth quarter, volume totaled 16.4 million, or 178,000 per day, a 34% increase in daily volume. Indeed, for the year's final quarter alone, same-day debits accounted for nearly 47% of total same-day traffic.

"We are ... pleasantly surprised by the initial adoption of same-day ACH debits," Michael Herd, senior vice president for ACH network administration at NACHA, says by email. "We didn't expect this amount of same-day ACH debit volume in the first quarter of availability. It is gratifying to see this level of industry adoption."

For same-day processing as a whole, "the steep increase from November to December is reflective of financial institutions' promotion of same-day ACH, greater awareness and adoption by users, and, most likely, an increase in the number of financial institutions launching same-day ACH origination," Grotta says.

Grotta adds that same-day processing appears to be smooth sailing so far for the nation's banks, nearly all of which link to the ACH network. "To date, I haven't heard of any major glitches or significant fraud concerns with same-day ACH," she says.

Herd echoes that assessment. "We haven't heard of any significant processing problems," he says. "We think that allowing the industry to gain experience for a year with same-day ACH credits has paid off."

Consumer bill payments accounted for the bulk of same-day debits in 2017, at 92% of transactions and 84% of dollars. Business-to-business payments made up the balance. On the credit side, payroll direct deposit was the largest application by transactions, with a 47% share, but same-day business-to-business payments accounted for the most dollars, with a 49% share.

Under NACHA's plan to speed processing of ACH transactions, same-day credits were introduced a full year earlier than debits. As the name implies, same-day processing requires clearing and settlement of transactions on the same day they are initiated, within certain processing windows. Ordinary ACH transactions do not clear and settle until the next day.

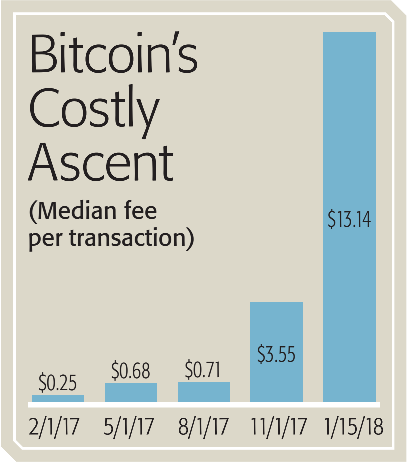
With credits, payers push payments from their accounts to those of their recipients. With debits, payees pull payments, with authorization, from payers' accounts. Same-day processing is required of receiving financial institutions, but is optional for originating institutions.

—John Stewart

Glitches, Volatility, And Sky-High Fees Bedevil Bitcoin Acceptance

While most payments executives have been fascinated by the spectacular year-long rise—and recent crash—in the value of Bitcoin, merchants that accept the cryptocurrency continue to struggle with a wide range of vexing issues.

Overstock.com, one of the first merchants to accept Bitcoin, last month had to fix a programming flaw that had the online retailer accepting Bitcoin Cash instead of Bitcoin for purchases, and then refunding canceled transactions in Bitcoin instead of Bitcoin Cash. The glitch was brought to light in a post on the security blog KrebsOnSecurity.



Source: Bitinforcharts.com

This was a serious issue because Bitcoin Cash, which debuted last summer as an offshoot of the Bitcoin blockchain, was worth only approximately one-tenth of Bitcoin's price. Bitcoin was trading just shy of $14,000 at the time, according to Coinmarketcap.com.

As he related in his blog post, the flaw allowed security researcher Brian Krebs to place an order that called for a certain fractional amount of Bitcoin and then pay for it with the same amount of Bitcoin Cash. He reaped an even bigger windfall, however, when he canceled the order and received his refund in Bitcoin.

Made aware of the issue, Overstock and its processor, Coinbase, have corrected a piece of code that was causing the problem, according to Krebs, who donated his proceeds after being told by Overstock to keep the windfall.

Around the same time, Microsoft Corp. restored Bitcoin acceptance at its online store after shutting down the cryptocurrency for a few days in response to issues surrounding the its volatility and transaction costs.

Rising transaction volumes have congested Bitcoin's blockchain, the decentralized ledger that tracks and records transactions, forcing users to pay higher fees to get their payments processed. This is a particularly acute problem for low-value purchases, since the median transaction fee was $18 at mid-month, according to bitinfocharts.com. The Microsoft site, which sells various digital products from the software giant, doesn't accept Bitcoin directly but allows users to fund their accounts with the digital currency.

Price volatility and slow transaction times are also a problem because they can require customers to make followup transactions to make up a deficiency caused by a drop in value. The followup transactions are subject to the same fees.

Unlike Microsoft, online-game seller Valve Corp. in December dropped Bitcoin acceptance permanently, citing the same issues ("Bitcoin Accepted Here?" January).

Moves like this have prompted exchanges dealing in Bitcoin to lay plans to add alternatives. Some of these alternatives, though, may exhibit similar volatility. Ether, second only to Bitcoin in market capitalization, saw its price jump nearly 12.5% in a 24-hour period at one point in January, to $1,348, according to Coinmarketcap. Over the same period, the value of the third-largest currency, Ripple, dove 17%, to $1.88.

While not as severe as the case with Bitcoin, some of these prominent currencies are also experiencing rising transaction costs. DT

—John Stewart

Brave New Payments World

Gideon Samid • *Gideon@BitMint.com*

Artificial intelligence (AI) is so unsettling that we look the other way as it encroaches on the fundamentals of what it is to be human.

Why do I say this? As AI is envisioned today, each of us humans will have his or her smart self, or "sself." This sself is an AI unit that will be constantly loaded with our personal data, including information regarding health, finances, profession, tastes, style, goals, concerns, proclivities, weaknesses, strengths—everything.

Now, the various sselves will socialize and use their learning capabilities to search for cohorts, or other sselves that benefit each other by association, which means sharing information or pooling resources. Sselves will form smart families ("sfamilies"), which may or may not correspond to the traditional bond of family. Families will bond into smart tribes ("stribes"), and then into smart communities ("scommunities").

All this bonding is self-serving. The sself will execute fast computational inference of all the ever-growing information at its disposal to best serve the goals identified by the human (the "dumb self'"). The self-serving sfamilies will identify shared objectives so that their members will benefit the most. And the same for the stribes and scommunities. It will amount to rational optimization of social power to serve the combined interests of the members of society.

This smart society ("ssociety") will revolutionize everything from politics to health care to ethics to globalization. But here we're focusing on its impact on payments.

What we buy may be categorized under the headings "life-maintenance" and "life-excitement." Routine maintenance items like bread, gas, and toilet paper are characterized by predictable consumption. The sselves will bond into negotiation blocks and contract for a price and delivery schedule for each member.

The contract will result in "tethered money" (see my book by that title), which will be transmitted on delivery. When the gas pump fills your car, your sself pays the gas station with pre-negotiated digital tokens. You just fill up and go. To accommodate groceries shipped to your address, tomorrow's houses will be equipped with a refrigerated outer box to hold items that must be kept cold. Bread, fruits, and vegetables will come directly from distribution centers that we humans will know nothing about.

Under life-excitement, stuff like a new car, an easy chair, or a new jacket will be viewable and touchable in dedicated display centers. We humans will go to these centers to kick the tires, hold the nice lamp, and try on the fashionable pants. Once we have decided on a purchase (estimated prices will be displayed), we will be prompted to indicate whether we wish to have it delivered to our address right away, tomorrow, next week, or "whenever."

The less demanding we are with delivery, the more negotiation and optimization power we provide to our sself and to the shopping community that this sself belongs to (perhaps an *ad hoc* scommunity), and hence the cheaper the price. And of course, forget about EMV or other old-school payment devices. It's all digital money, held, stored, managed and paid by your artificial sself to best serve your human goals and desires.

Give it a few years, and people will wonder how we ever managed to comparison-shop and pay using just this sluggish human brain that randomized Darwinian evolution has endowed us with. So much better to replace our irrational brain with sselves immunized against emotional response.

Everyone using a spreadsheet today pities prior generations that had to use calculators to handle mundane computations that a spreadsheet does so much more efficiently. Similarly, money matters are so conceptually easy: You wish to buy for less and to sell for more. It's the myriad details that need to be rationalized and optimized, but our brain is ill-suited to this repetitive arithmetic. For our sselves, however, it is easy as pie.

Historically, shopping centers were location-optimized to make it easy for customers to drive there. Department stores were built to allow customers a one-stop shopping place for all their needs. As these two imperatives vanish, so will the solutions. Credit cards were invented to solve the problem of trust between merchants and customers. But public ledgers and other cryptographic trust products offer a much more elegant solution.

Similarly, when clients ask me to help with EMV issues, I say, wait it out. Soon the need will be passé. ■

Beyond Technological Innovation

George Warfel • *GWarfel@haddonhillgroup.com*

When payment volumes and values are displayed as a single graphic, some interesting patterns emerge about how we use current payment methods. Are there implications for new and future payment methods?

▶ **Debit card** has the highest number of transactions but the lowest total value of those transactions. It has become the new pocket change (parking meters, vending machines).

▶ **Credit card** volume is trailing debit card volume. One might venture a guess that this is due to the historically high interest rates and cardholder fees being charged.

▶ **Checks** continue a slow decline in volume; and the value rank is following suit.

▶ **ACH debits,** which tend to be consumer-related payments, show low volume but high value.

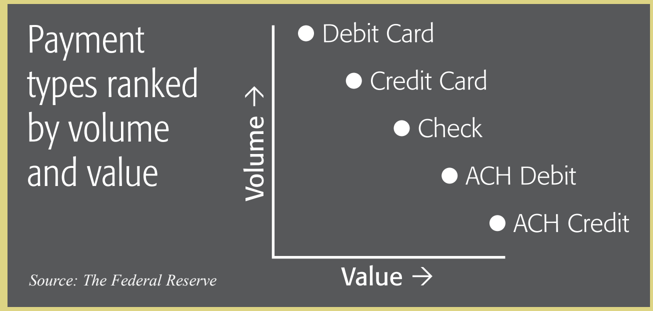
▶ **ACH credits,** which are often corporate and government transactions, have the lowest volume of any payment type while carrying the highest value due to big-ticket payments.

An observation perhaps remarkable only to graphics aficionados is the perfect inverse symmetry that shows up when the data is displayed in a single graphic icon rather than the usual bars and curves on a grid.

Given the cost to both merchant and bank of transporting, securely storing, and handling cash, one could predict that debit card use is pretty much here to stay, buttressed by the special-purpose debit cards distributed to government-benefit recipients, contest winners, gift recipients, etc. Debit card use will likely grow even more with new services such as Visa Direct. The use of debit cards as both the sender's and the receiver's storage medium for many of the new mobile-payment methods should also assure debit cards' continued position at the top of the volume chart.

Credit cards, on the other hand, may be slowly asphyxiating themselves, except for large purchases, as the combination of historically high interest rates and high cardholder fees seems locked into an ever-increasing spiral. At some point one has to think people would stop using them at all for small purchases.

What Mark Twain supposedly said about himself, "The reports of my death have been greatly exaggerated," could well be the motto for checks. Although check volume continues to decline slowly, we may begin to see evidence here of what has happened in other countries where small-business owners continue to use checks because they find them well-suited for the stapler method of accounting: attaching the image of the paid check to the invoice it is payment for. While mobile-capture and image-processing technology has reduced the cost to banks of processing checks, it has only made them more convenient for people to use.



Often, the more that new technology is applied to old payment methods, the more it keeps the old and supposedly inefficient means of making payments in play. The same path we have gone down with checks was traversed earlier as "wire" payments came to be wirelessly sent on high bandwidth, digital, global satellite networks, which added both greater speed and better security to an old way of paying by telegram.

In our own time, we have replaced the magnetic stripe with a chip without reducing the size of the cards or the terminals, when in reality the card now need not be any larger than the chip and the terminal no bigger than the PIN pad.

The reason that the old ways of making transactions don't go away when new ones are invented is simply human nature at work. In many countries (especially the United States), even when a newer technology is "mandated," little effort is made to retire the old method of making the same payment.

This message inherent in the pattern of the annual payments data raises a question we will tackle in an upcoming issue: Is fintech going to overthrow the historical pattern of new ways to pay being innovated without dramatically diminishing use of the old ones? Or is there something fundamentally, not just technologically, different this time? ■


TRANSACT ALUMNI
I'D RATHER BE PROCESSING
MY OTHER CAR IS A POS Machine
JOIN THE PAYMENTS ECOSYSTEM
INTERNET OF THINGS 2018
Facilitate This!
DEALMKR
APR
18
ETA
ISOs
I BRAKE FOR MOBILE PAY
FOLLOW ME TO TRANSACT
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No Shortcuts To Becoming a PayFac

Kevin Woodward

As the payment-facilitator model gains favor, understanding the process to become one has become more important than ever.

A few years ago, deciding on a payment model was a simple choice for a software vendor or event organizer: Find an independent sales organization to work with or become one. Then, along came the payment-facilitator model, first used by the likes of PayPal Holdings Inc. and Square Inc. to make it easy for smaller merchants to accept payments.

The payment-facilitator model enables entities to accept payments without going through the complicated process of setting up their own merchant account. Instead, the merchant signs up to accept payments using a master account provided by the payment facilitator.

Both Visa Inc. and Mastercard Inc. enable submerchants to have charge-volume amounts up to $1,000,000 annually before requiring them to establish their own, independent merchant account.

'A Good Fit'

The benefit for the submerchant is that it is a quicker and simpler way to begin accepting payments. For the payment facilitator, the benefit is the ability to service vast numbers of other organizations while maintaining control and having access to their payment data.

While the payment-facilitator model continues to serve small merchants well for general payment card acceptance, it has quickly become the darling of software developers. These companies want an expeditious, simple, and secure way to offer payment acceptance to their merchants.

It also has become highly favored among event-organizing companies. Rather than trying to arrange payment acceptance for participants in thousands of 5K runs and triathlons, the organizers turn to companies like Active Network LLC or SignUpGenius Inc., which already have this capability.

Part of the appeal of the payment-facilitator model for software developers is that it can sidestep a potentially cumbersome EMV integration.

The multitude of unique software products that traditionally offered a built-in payments function was complicated by the EMV standard, which required certification of each configuration. If the point-of-sale hardware changes, a recertification is necessary. If the software is updated, a recertification is necessary.

Another aspect that might be appealing is that payment facilitators often rely on online customer acquisition, which doesn't entail such elements as direct mail or using sales agents to recruit merchants. "Payment facilitators are much better at online acquisitions," says Todd Ablowitz, chief executive and founder of software company Infinicept and consulting firm Double Diamond Group.

The operational costs of onboarding merchants may be less expensive, in the end, for payment facilitators, too. Relying on a risk-based approach in this regard might prevent boarding a merchant that will only process $1,000 a year, he notes.

This in particular created a unique opportunity for payment facilitators to court independent software developers.

"Our research suggests there are more than 10,000 software companies that are a good fit for the payment facilitator model," Ablowitz says.

Double Diamond Group research forecasts that independent software vendors (ISVs) and software-as-a-service providers will reach $513 billion in gross payments volume by 2021, generating $4.4 billion in revenue.

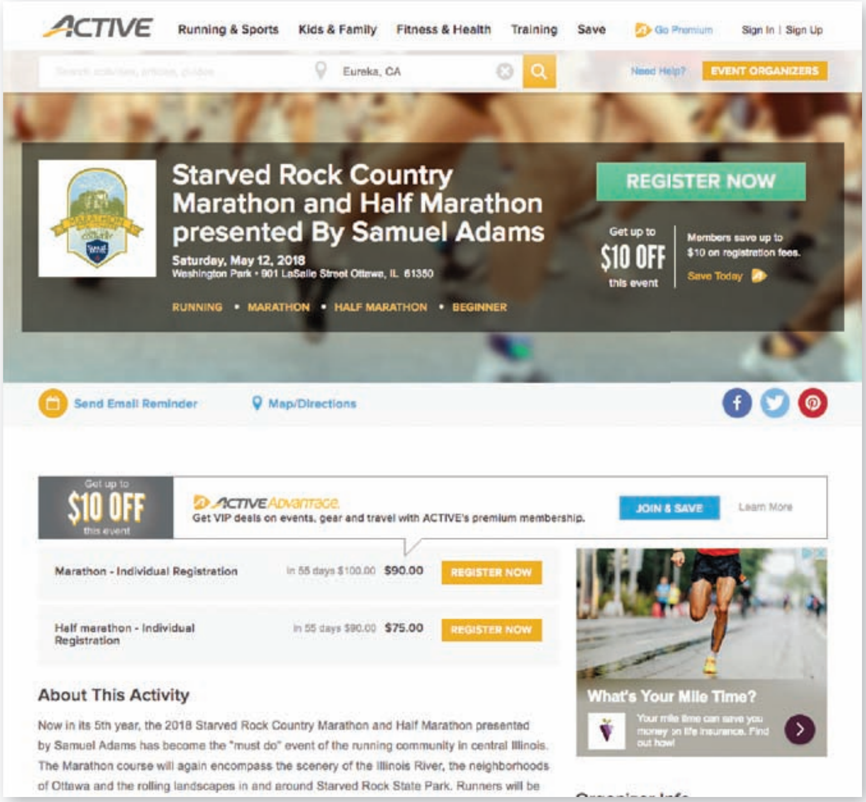
'Very Proprietary'

The potential growth in the model is vast. A 2016 presentation from Mastercard on its registration programs said there were 818 payment-facilitator registrations, with 158 of them in the United States. Visa counts 624 worldwide, but that tally does not include Europe.

Many organizations are willing to accept the challenge, especially because the revenue potential is greater than with some other payment models, says Holli Targan, an attorney at Jaffe Raitt Heuer & Weiss, a Southfield, Mich.-based law firm. Without a middleman they must pay to process their transactions, payment facilitators typically retain a larger revenue share. They also benefit from having more control over the payments element.

"There is a little less friction because it is the payment facilitator deciding as opposed to someone else," Targan says. "They're very proprietary about their customers. Frankly, they're tired of the bad service their payment processors have been giving their customers."

Becoming a payment facilitator, however, is not a super-simple task. The prospective payment facilitator will have to determine if its customer base is a good fit for the model. If so, other considerations must be addressed.



Active.com uses the payment-facilitator model to accept payments on behalf of thousands of organizers of events, such as marathons.

The first task is to find a sponsor, Targan says. Candidates can include such companies as First Data Inc., Total System Services Inc. (TSYS), or Worldpay Inc., the company newly formed from the Vantiv Inc. and Worldpay plc merger.

"The sponsor is required by the card brands to do a due diligence on [prospective payment facilitators]," Targan says. Requirements that must be met include demonstrating the company has good capitalization and showing that management has strong acquiring experience.

"They'll have to indicate to the sponsor they have the wherewithal to perform the obligations required to be a payment facilitator," she says.

They'll also have to comply with various regulations, not just state and federal ones, but also those established by the card brands.

"Once they become registered with the card brands, there are rules they have to comply with," Targan says. Examples include ensuring submerchants comply with card-brand rules, maintaining PCI compliance, and monitoring submerchants for fraud. Among federal regulations are the Bank Secrecy Act and anti-money laundering compliance programs.

They also must determine whether becoming a payment facilitator qualifies the company as a money transmitter, an entity subject to various state laws.

'More Than One Model Going'

The sponsor, too, will want to see a business plan, says Ablowitz. If the sponsor is going to underwrite a payment facilitator, it'll need to know how the business operates. Policies and procedures outlining the submerchant underwriting are necessary.

"That can be a thing that trips people up if they don't understand," Ablowitz says. His advice is to either hire staff that know underwriting or bring in a third party.

"From an expertise perspective, if they're looking for someone who knows how to do underwriting, they're hiring personnel," says Targan. "They're initiating a whole new division of their company that is now payments."

Once all this is ready, the prospective payment facilitator should hire a payments attorney, Ablowitz says, and get its technology ready to connect to the sponsor. That process may take between three and six months, Targan says. Payment facilitators also must pay registration and annual renewal fees of $5,000 each to Mastercard and Visa.

Other considerations include devising a plan for boarding existing merchants. Usually, the payment facilitator will assign an employee to manage this project, Ablowitz says. Typically, that entails checking the payments experience of existing merchants in the payment-facilitator model as well as their systems.

Migrating existing merchants to the new model often is not done wholesale, but in segments or by channel, Ablowitz says. "It wouldn't be unusual to have more than one model going," he says.

"One other thing a payment facilitator needs once they are ready to launch—even the smallest payment facilitator—is someone to manage the operation day-to-day," Ablowitz says. "You can't launch with no staff."

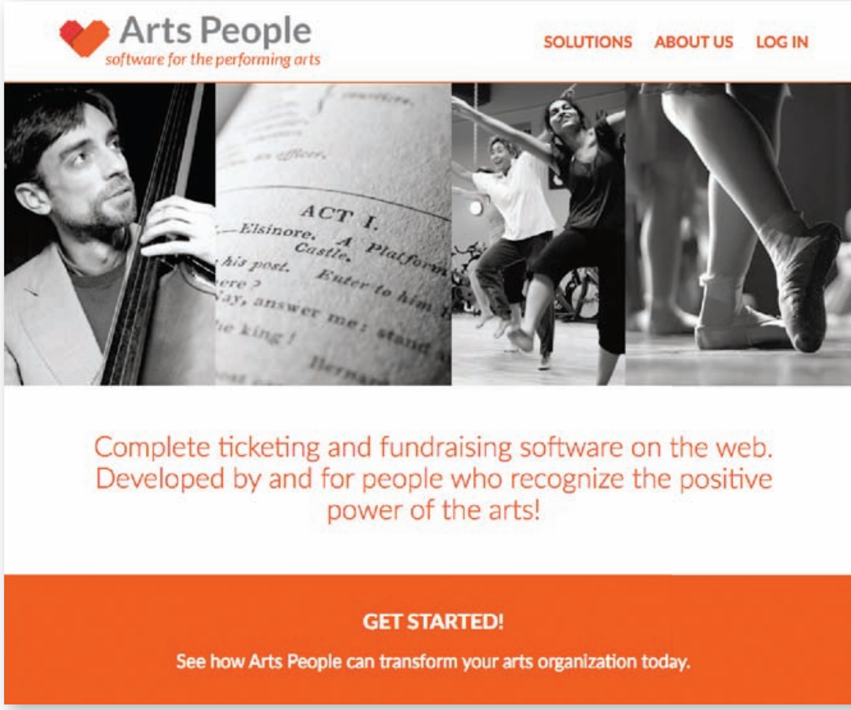
'A Challenge for New Players'

There are other sources to help companies become payment facilitators. The Electronic Transactions Association, a Washington, D.C.-based trade group for the acquiring industry, publishes the "Payment Facilitator Guidelines," a document that helps companies in incorporating risk and compliance practices associated with the model. Released in 2016, the guidelines are to be updated this year, says Amy Zirkle, ETA vice president of industry affairs.

"It's a challenge for new players," Zirkle says. "There are roles and responsibilities that payment facilitators have to agree to support and abide by."

For companies that have limited exposure to the payments industry, and specifically the acquiring aspect, the prospect of becoming a payment facilitator can be daunting.

"That's tied to the core of what's going on in traditional sales channels, in the ability to underwrite merchants, manage settlement for merchants, and provide customer service for merchants," Zirkle says.



Focusing on art events, Arts People offers ticketing, fundraising, and marketing functions among its services.

The payment-facilitator model has matured to the point the ETA formed a committee last year dedicated to it. "What we're really trying to do with that committee is create an environment where we can have proactive discussions on a variety of issues that relate to payment facilitators," Zirkle says.

'In the First Inning'

Most experts agree that the payment-facilitator model has a lot of growth ahead. "We're ending the first inning," Ablowitz says, in describing how far the model, which originally labeled providers as aggregators, has come. "The next wave is all these software companies are going to become their own payment facilitator."

Other organizations are trying to determine whether the model might be good for them. "We've had inquiries from traditional ISOs who are looking at it and trying to figure out if it's something they want to take advantage of," Targan says. "It's not just ISVs and value-added resellers."

An experienced payments provider may understand the challenges of becoming a payment facilitator, but not all companies, regardless of their size. "More of our inquiries are coming from software companies," Targan says, "who have a payments aspect to their software or want to have a payments aspect."

"They know their software, they know their services they can offer their software clients, but they don't necessarily know payments," she says. "They start peeling back the onion and realize it's much more complicated than anticipated." DT

'More of our inquiries are coming from software companies who have a payments aspect to their software or want to have a payments aspect.'

—Holli Targan, attorney, Jaffe Raitt Heuer & Weiss

PRIMETIME FOR AMAZON PAY

In the fall of 2009, a certain big company in Seattle launched a service that let consumers authenticate themselves for online purchases with a favorite phrase and a PIN. By the spring of 2012, the service was no more.

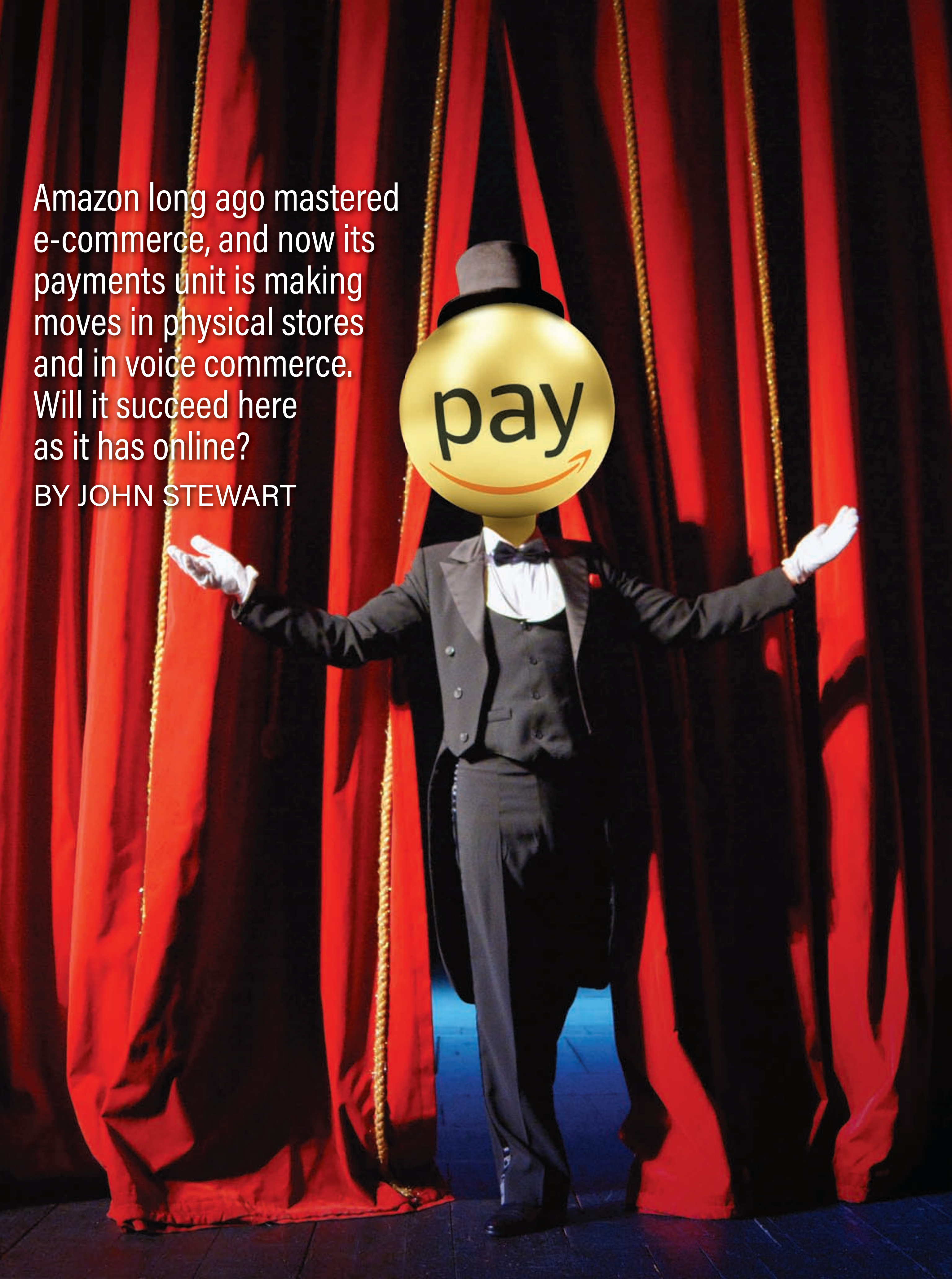
In the summer of 2014, that same company sought to join the burgeoning ranks of mobile-wallet providers with a wallet app of its own, just ahead of Apple Inc.'s launch of Apple Pay. As with Apple Pay, the Seattle company's new wallet worked on its proprietary line of smart phones. Just six months later, the app was discontinued.

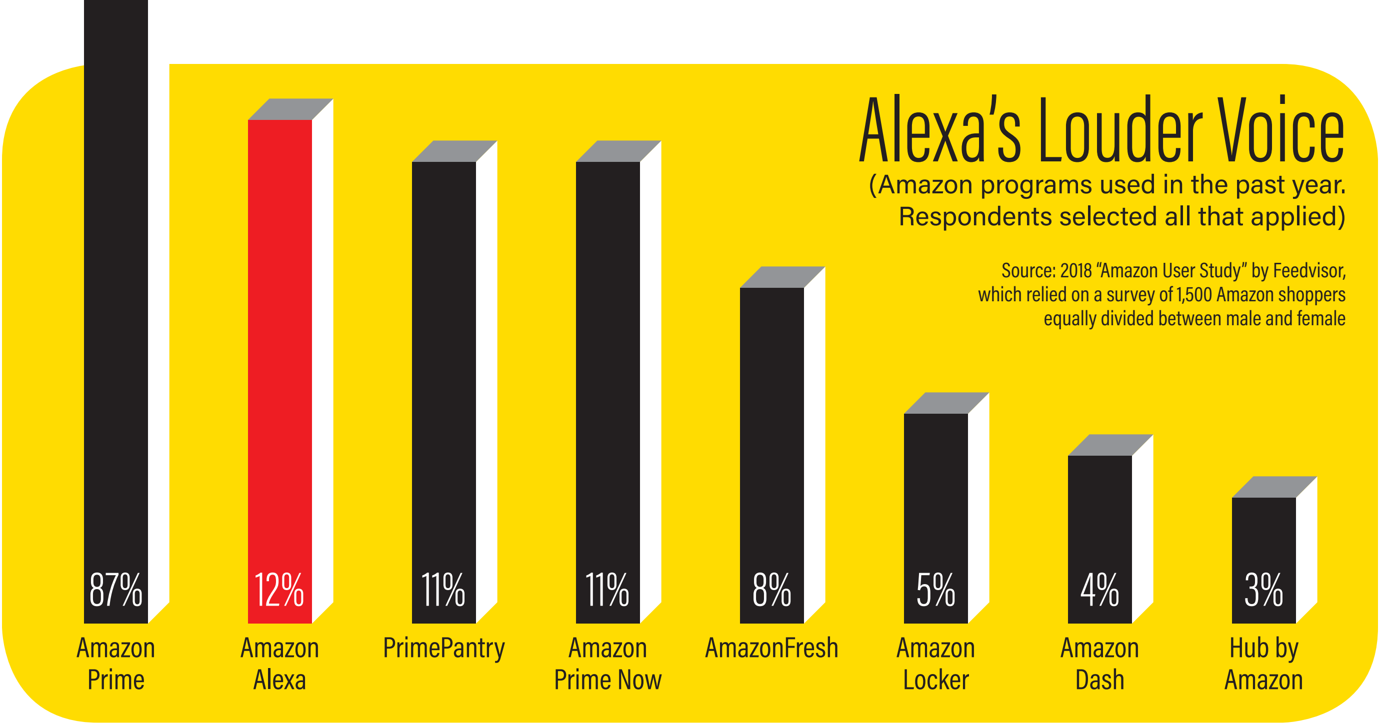
Also that summer of 2014, the company came out with a mobile point-of-sale product to compete with Square Inc. and a host of other vendors aspiring to equip small merchants with the ability to accept cards with a smart phone. That entry lasted until February 2016.

The failed products were, in order, PayPhrase, Amazon Wallet, and Local Register, and the company behind them was, of course, Amazon.com Inc., the colossus of e-commerce.

Amazon long ago mastered e-commerce, and now its payments unit is making moves in physical stores and in voice commerce. Will it succeed here as it has online?

BY JOHN STEWART





Observers accustomed to the seemingly unending story of success that is Amazon may be startled to hear that not all the retailer touches turns to gold. But Amazon has a way of learning from its mistakes, and these days that virtue may be nowhere more evident than in its payments business, which it takes very seriously, indeed.

So seriously, in fact, that consumers are already using Amazon Pay, the company's payments service for non-Amazon sites, for transactions in the real world.

Starting last summer, they could order ahead at TGI Fridays restaurants and a few other stores using a new service called Amazon Pay Places. And starting last fall, Amazon opened Amazon Pay, which claims at least 33 million users, to developers for purchases through its Alexa voice-commerce service. Participating merchants so far range from TGI Fridays to Atom Tickets, a digital-ticketing service for movie theaters.

"We see great potential here. There are tens of millions of Alexa-enabled devices out there, and the whole experience is built voice-first," says Patrick Gauthier, a former PayPal and Visa Inc. executive who is vice president for Amazon Pay, in an e-mail interview.

Just how far into the physical world might Amazon extend its payments capabilities? The online merchant already operates a handful of bookstores and Kindle popup stores. It's also created a testbed convenience store for employees to experiment with a concept called Amazon Go that does away entirely with the conventional checkout.

But the question really took on urgency last summer when the company shelled out $13.7 billion to buy the 470-store Whole Foods grocery chain. About any payment plans here, the company is keeping quiet. "That's not something I would speculate on," says Gauthier.

'GONE TO MARS'

With the possible exception of PayPal Holdings Inc., Amazon in its 23 years in business has done more than any other company to meld two crucial steps in payments: checking in (authenticating yourself) and checking out, so that they are practically one in the same process.

The idea is to capture user credentials once, and then store them for all subsequent transactions. Making this work in split seconds across a base of about 330 million active accounts is easier to describe than to pull off. But Amazon long ago became more of a tech shop than an e-commerce merchant.

"Amazon does technology better than anyone else I know. They've gone to Mars without stopping at the moon on the way," says Joe Kleinwaechter, an electrical engineer by training who is vice president of innovation and design for Worldpay Inc., a massive payments processor.

Tech prowess is key, but not everything. Of those 330 million active users, about 100 million are members of Prime, the company's top-shelf set of services like free two-day shipping. Prime members, who pay $99 a year for the privilege, shop more frequently, and spend more, than non-Prime customers (chart, page 26).

Not only that, but Amazon customers now go to the site ahead of other places to research products, in this sense out-Googling Google, says Marc Freed-Finnegan, who was product lead for the original Google Wallet and is now chief executive of San

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Francisco-based Index, which markets technology to speed up EMV transactions. "Increasingly, customers begin their shopping journey on Amazon," he notes.

So Amazon attracts consumers, makes it easy for them to order and pay, and ships merchandise for one- or two-day delivery, in some cases free. It does this for itself as well as third-party sellers on its site. How potent is that combination? Quite potent, if done right. "An active enrolled user is just as valuable as closing a sale," says Richard Crone, principal at Crone Consulting, a San Carlos, Calif.-based payments consultancy.

GREASING THE SKIDS

The key, of course, is the stored payment credential for each customer. That method enables the fabled single-click purchase that greases the skids not only for e-commerce but ultimately for mobile payments and voice commerce.

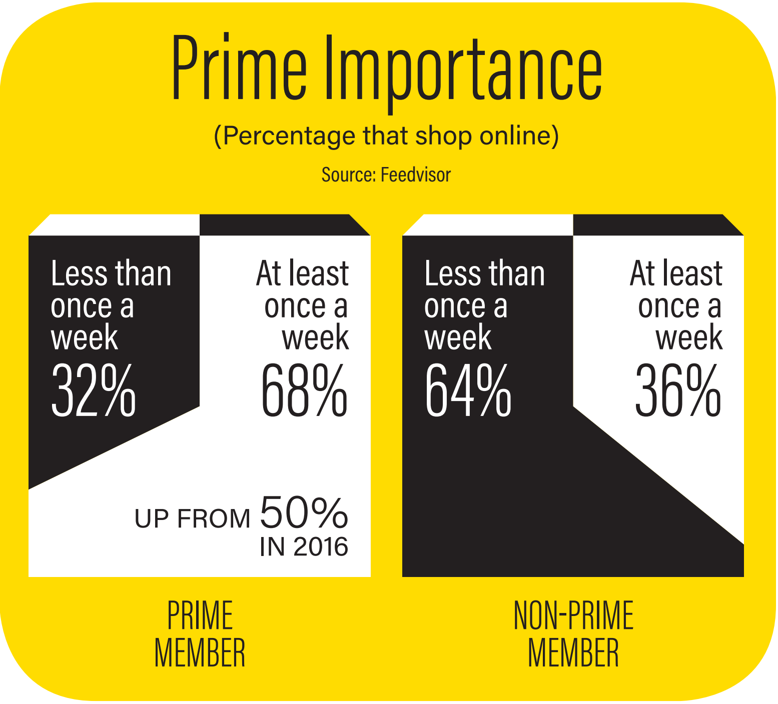
Amazon patented its 1-Click payment routine in 1999 and happily raked in licensing revenue from Apple Inc. and other online-store proprietors over the years. By the time the patent expired last year, the method had given rise to logical extensions like PayPal's 1-Touch.

The whole idea is to get rid of irritating online forms, which are bad enough on standard-size keyboards. For mobile transactions, they can be the kiss of death.

With Vacatia, an online vacation-booking service that uses Amazon Pay, single-click is crucial. "Two-thirds of our customers are mobile, which makes figuring out an easier checkout process incredibly important," says Mike Janes, chief marketing officer for the 5-year-old San Francisco-based company.

Having access to that back-end data is also important because most of Vacatia's visitors are first-time customers, given the company's startup status, Janes says. He won't specify his conversion rate with Amazon Pay, but says the method is the site's "most successful payment option." Vacatia also accepts credit cards, Apple Pay, and an online-financing option called Bread.

A bonus for Vacatia lies in a "huge overlap" of Prime members and family-vacation decisionmakers, Janes adds. "Amazon is exactly my demographic," he says.



GETTING PHYSICAL

Now Amazon is ready to move that sort of experience to the physical world. Last July, it announced Amazon Pay Places, which allows users to deploy Amazon Pay within the Amazon mobile app.

The "Amazon Pay in-store program," as Gauthier styles it, relies on the Clover point-of-sale system from the huge processor First Data Corp. Clover is a line of portable devices that process payments and work with a library featuring apps that automate a wide variety of business functions.

Right now, it's available at "select" TGI Fridays locations and some other eateries that use Clover, Amazon says, without being more specific. Users can order ahead using the Amazon Pay feature in the Amazon app and show up later to pick up their meal.

But you can bet physical-world payments won't stop there. Amazon is clearly relying on the popularity of its app to sell Amazon Pay to more merchant categories. When checked at mid-January, the Amazon app ranked first in downloads in the shopping category and 16th overall, according to ranking service App Annie.

"Given its wide distribution and use, we're looking to expand the ability to use Amazon Pay in the Amazon app beyond restaurants to other types of retail and goods," says Gauthier.

Just within the restaurant category, there is plenty of potential as well, particularly if Amazon can sell users on the idea of displacing specialized order-ahead apps. "With Amazon Pay in store, Amazon customers no longer need to download another app to enjoy the convenience of order-ahead experiences from a range of local restaurants from a familiar flow in the Amazon app," Gauthier notes.

At the same time, Amazon Pay transactions are increasingly mobile, Gauthier says, noting that almost one-third of payments came from a mobile device in 2016. “We expect that number to continue to increase,” he says. That should make it a bit easier to sell users, particularly those loyal Prime users, on tapping the app for physical-world shopping.

‘THE STEPPING STONE’

The big question mark here is the role Whole Foods will play in Amazon’s payments plans. Amazon is mum on this matter, but most observers see Amazon Pay moving into those 470 stores sooner rather than later.

Crone, for example, figures the fastest route into the stores would be via familiar barcode readers. Unlike near-field communication, barcodes are easy and familiar to most mobile users. “I’m sure Patrick [Gauthier] is thinking this is the path of least resistance,” he says.

But a more intriguing technology lies near Amazon’s Seattle headquarters in an experimental c-store open, for now, only to company employees. Here, sensors at the doors and on all the shelves follow customers throughout the store, tracking what they put in their baskets and what they put back on the shelf. The final total is charged to their account as they walk out.

The result is a physical store that does 1-Click one step better—it gets rid of checkout altogether. Amazon calls it Amazon Go.

> Amazon ‘can’t get the growth they want by just being an online retailer.’
>
> —Joe Kleinwaechter, vice president of innovation and design, Worldpay Inc.

The company won’t say when it will be introduced to the public, but both Crone and Worldpay’s Kleinwaechter figure it will be this year some time.

For his part, Kleinwaechter says Amazon Go’s complexity, involving multiple sensors and cameras tracking multiple customers at the same time, means Amazon will take the time it needs to get it working right—even if it has to take flack for it. “We will probably see some stores open in late Q1 or early Q2, but this is very tricky to do,” he says.

Getting it right, though, could have implications well beyond the experience of no checkout. It could, for example, yield a bonanza of data that Amazon could sell to food marketers and other interested parties, according to Crone. Knowing in real time what a customer is picking up, marketers could deliver offers to her phone for a related item while she is still in the aisle.

Once Amazon Go is proven, Amazon could offer it to third parties, following the model of Amazon Pay. “Amazon Pay is the stepping stone to Amazon Go,” says Crone.

A CHOICE AND AN ECHO

But when it comes to getting rid of checkouts and other sources of what the payments business calls “friction,” few technologies can top voice commands. Amazon’s Echo line of devices, introduced only a few years ago, features a form of artificial intelligence called Alexa, which speaks with a feminine voice, recognizes human speech, and performs tasks according to so-called skills.

In November, Amazon opened Alexa to outside developers to program commerce functions into their skills. The offering includes Amazon Pay “so that customers can easily pay for goods and services in your skill,” according to a Nov. 29 Amazon blog post.

With what Gauthier says is an installed base of “tens of millions” of Alexa-enabled devices, buying via Amazon Pay may get even easier. Voice, says Gauthier, is “the most natural and convenient user interface. We see great potential here.”

For now, the program is in “private beta” with TGI Fridays, Atom Tickets, and a few others, he says. Amazon is accepting applications to participate on its Web site.

‘WEAKEST FORM OF AUTHENTICATION’

Over the years, Amazon has proved to be as canny a technologist as a merchant. But for all its technical prowess, there remain problems it may not be able to overcome. One such issue is the competitive nature of retailing.

Most observers agree that while Amazon may sign up plenty of mid-size and smaller sellers for Amazon Pay, bigger retailers will remain unmoved, fearful of sharing even a scintilla of customer data with a resourceful rival. Also, some big chains, such as Walmart, Kohls, and CVS, have proprietary mobile wallets of their own. “I do not expect to see large merchants partnering with Amazon in physical stores,” says Index’s Freed-Finnegan.

Gauthier on voice commerce via Alexa: “We see great potential here.”

That means Amazon Pay’s penetration in the grocery segment, aside from smaller stores, could be limited to Whole Foods. “I can’t see any of the top 10 grocers putting Amazon Pay in their stores,” says Crone. “If I’m a smaller grocer, I’ll do whatever I need to do to stay in business.”

Another issue lies in the nature of voice commerce. Here, Amazon is pouring tons of development dollars into a capability Gauthier calls “natural” and “convenient” for consumers, but others have some doubts.

“I’m challenged by payment by voice. The voice is the weakest form of authentication,” insists Kleinwaechter, who is nonetheless a big fan of the Echo device, using it to control the lights in his home and to maintain his grocery list.

One way or another, though, Amazon is coming to the physical point of sale. The company won’t address its business motives, but observers see an obvious one. “They can’t get the growth they want by just being an online retailer,” says Kleinwaechter.

That motive has pushed much innovation over time at Amazon. Now the question will be whether ventures like Amazon Pay Places, Amazon Go, and Alexa for Amazon Pay will succeed—or wind up on that list with PayPhrase, Amazon Wallet, and Local Register. DT

PayPal Reimagines the Point of Sale

By Peter Lucas

A series of partnerships with the card networks and now individual banks have positioned the online-checkout kingpin to make the leap to a mainstream digital-payments platform.

Ever since PayPal Holdings Inc. was spun off from eBay Inc. in 2015, its chief executive, Dan Schulman, has not been shy about warning financial-technology providers to re-imagine how money can be moved and managed. His reasoning rests on the idea that the change that will take place in this business over the next few years will be staggering.

PayPal itself—which has long expressed its aspiration to move beyond its niche as a popular, alternative online-payment option and transition into a mainstream digital-payments company—has been busy positioning itself in preparation for the coming sea change.

PayPal's new strategy began taking shape in 2016 when it struck deals with Visa Inc. and later Mastercard Inc. to gain access to their respective tokenization engines. A similar agreement with Discover followed.

The deals were widely heralded as victories for the card networks because their terms required PayPal to drop a longstanding practice of promoting the low-cost automated clearing house network over higher-cost cards for account funding. Less noted at the time was how the deals would smooth PayPal's way into physical stores.

In-store purchases, after all, still exceed e-commerce sales by a wide margin. During the third quarter of 2017, e-commerce sales accounted for $115 billion, or less than 10%, of $1.2 trillion in retail sales, according to the U.S. Department of Commerce.

Access to Visa's and Mastercard's tokenization engines not only gained PayPal entrée to more than 5 million merchants globally that are equipped to accept mobile wallets at the point of sale. It also ensured PayPal transactions at those merchant locations will be secure, as actual card-account data will not be exposed during a transaction.

The belief was that PayPal could leverage the security angle to actively promote to consumers the use of PayPal for in-store purchases and create demand for in-store acceptance.

Instant Liquidity

The passage of time, however, has brought the benefits of the Visa and Mastercard deals into even sharper focus. While PayPal wants broader acceptance at the physical point of sale to help fuel long-term growth, it sees an even larger growth opportunity in becoming a platform provider for all digital channels.

It has been pursuing this broader initiative through a further set of agreements with financial institutions and merchants that supplement, and build on, the provisions of the original network deals. The idea is to deliver unique payment experiences to consumers through the PayPal wallet, regardless of whether they pay with a PayPal account or a bank card.

"Our aim is to become a scale-driven platform that interoperates with the card networks in the broader payments ecosystem to provide better user experiences, and maximize the users that come onto our platform," says Jim Magats, vice president of core product for San Jose, Calif.-based PayPal. "The first steps we have taken along these lines have been to improve our core user experience."

What are these new, improved experiences, in concrete terms? One of these allows PayPal users to set a credit or debit card within the PayPal wallet as their default payment mechanism. Others automatically update credit and debit cards in the wallet that have expired, were lost or stolen, or compromised by criminals. Still another enables users to move funds from their PayPal account to a debit card in real time.

"To become a scale-driven platform, we must have an environment that supports consumers who prefer to fund, and move money out of, PayPal accounts using Visa and Mastercard cards," says Magats.

PayPal at a Glance

(Third-quarter 2017 results, with change from 3Q 2016)

TOTAL PAYMENT VOLUME $114 billion	▲29%
VENMO PAYMENT VOLUME $9.4 billion	▲93%
PAYMENT TRANSACTIONS 1.9 billion	▲26%
ACTIVE CUSTOMER ACCOUNTS 218 million	▲14%

Source: Company reports

While PayPal will not provide specifics, Magats says automatic card updates have substantially reduced the number of customer-service inquiries, which in turn has increased operating efficiencies.

"About one-third of the cards in our wallets need to be updated annually," Magats says. "Updating creates churn, and we lose a portion of those customers every year. Automatic updates help alleviate the churn."

In addition, there has been a large number of withdrawals from PayPal accounts to debit cards. "Instant liquidity is an important feature to our customer base, because when we moved funds out of a PayPal account in the past through the ACH, it took one to three business days," Magats says. "For our users that are small-business owners that need immediate access to those funds, that was too long a wait."

PayPal declined to break out figures on the sums transferred between PayPal accounts and debit cards.

Cracking the Point of Sale

PayPal's next steps have been to enhance the way PayPal users manage cards in their wallets and pay for purchases.

Through a string of deals with such financial institutions as Citibank, JPMorgan Chase, Bank of America, and Wells Fargo, PayPal has gained a marketing foothold with a large swath of customers it normally would not reach. In exchange for being able to load their cards into PayPal's wallet, partner banks agree to market the wallet to their customer base.

But PayPal isn't stopping there. Its deal with Citibank, which was struck last year, will enable customers enrolled in the bank's ThankYou Rewards program to redeem those points at PayPal merchants online or in-app. The feature is expected to go live this year, PayPal says.

Such deals may provide the value-added hook that can accelerate consumer demand for merchant acceptance of mobile wallets, including PayPal's wallet, at the physical point of sale.

"An advantage of an open platform is that it lets others into the ecosystem that can expand the customer base," says Raymond Pucci, associate director for research services at Maynard, Mass.-based Mercator Advisory Group. "One of the reasons mobile wallets haven't gained traction in-store is because consumers don't see value in them. An open platform allows for competitive cooperation."

Could PayPal now strike promotional deals on its own with merchants to build in-store acceptance for its wallet? That remains to be seen. The concept is viable, however.

Pucci points to an example: Mastercard's promotion last year with Dunkin' Donuts to reward Dunkin' Donuts customers enrolled in the chain's DD Perks loyalty program with a $5 credit on their Perks card for reloading value onto it through the Masterpass mobile wallet. More than 7.5 million consumers have enrolled in the Dunkin' Donuts Perks program.

Starbucks ran a similar promotion last year. Visa rewarded customers buying a $10 Starbucks e-Gift card with a $10 bonus when paying with Visa Checkout.

"Promotional tie-ins with large merchants that reward customers for a PayPal transaction is a way PayPal

'We see our platform as a way to bring card issuers and merchants together to expose consumers to more contextual offers.'

— JIM MAGATS, VICE PRESIDENT OF CORE PRODUCT, PAYPAL

PayPal HQ: Plotting a course to the point of sale.

(Photo: PayPal)

can crack the point of sale in-store," says Pucci.

If PayPal opts to go that route, it will be at least a year or two before it does. "While we envision ourselves as a platform for offers and rewards, we don't see it happening until 2019 or beyond," Magats says.

Contextual Offers

In the meantime, PayPal's plans to focus on partnering with banks to promote its wallet to their customers. About 10 banks are now actively promoting the PayPal wallet.

"We are getting the benefits of our bank partners' marketing arms encouraging their customers to add their cards to a PayPal wallet or to create a new PayPal wallet with just the banks' cards," says Magats.

Getting a bank to also agree to promote rewards redemption through PayPal's wallet to its cardholders, *a la* Citibank, makes the PayPal wallet even more attractive to a bank's customers, he says.

"This adds another dimension to the PayPal wallet that can make consumers more inclined to use it," says Larry Berlin, a senior vice president with Chicago-based First Analysis Securities Corp. who follows PayPal.

Down the road, Magats foresees the day when rewards for PayPal wallets can be customized based on the card used. One potential scenario would be to peg the reward to the purchase. A PayPal wallet user purchasing an airline ticket, for example, could receive free flight insurance. Other rewards could be pegged to consumer purchasing behavior to encourage repeat purchases at a specific merchant.

"We see our platform as a way to bring card issuers and merchants together to expose consumers to more contextual offers," Magats says.

> 'This adds another dimension to the PayPal wallet that can make consumers more inclined to use it.'
>
> —LARRY BERLIN, SENIOR VICE PRESIDENT, FIRST ANALYSIS SECURITIES CORP.

PayPal can even use the data collected through its wallet to conduct attribution marketing to remind wallet users rewards are available for redemption at the time of purchase, Magats adds.

Earning Interchange

But what's the payoff for banks in having their customers load their cards into PayPal's wallet? It's the opportunity to capture transactions they might not otherwise get from PayPal users, especially at PayPal's 17 million merchants, observers say.

Many consumers, PayPal users included, will divide their purchases between different payment mechanisms based on the dollar amount, according to Magats.

For purchases of $70 or less, the favored purchasing method is a debit card or an ACH-based payment vehicle, he says, but for purchases of more than $70, consumers prefer to use a credit card.

"If our wallet only supports debit and ACH, then banks lose potential credit card transactions through our wallets," says Magats. "Supporting credit cards helps boost conversions through our wallet for credit card issuers."

The Venmo app: Wildly popular, but will it play well at physical stores?

(Photo: PayPal)

Another benefit for banks is the opportunity to earn interchange fees when consumers use their cards to fund a PayPal account. "PayPal is a merchant to us, even though it has its own merchant base," says Jennifer Roberts, head of digital products, including the Chase Pay wallet, for JPMorgan Chase. "We expect that our customers will use their Chase cards to fund their PayPal account."

In 2017, Chase struck a partnership with PayPal to allow Chase customers to load their cards in the PayPal wallet and make in-store transactions through the wallet using tokenized credentials. Chase has not revealed the timeline for bringing those features to market.

Venmo at the Cash Register

The wild card in all of PayPal's maneuvering is Venmo, the company's peer-to-peer payments service. To Venmo users, the service is more than just a way to pay, it's a social-payments experience. Schulman has publicly noted how Venmo users, who tend to be Millennials, not only attach emojis to their payments, they open the Venmo app to keep apprised of what their friends are doing.

That certainly gives Venmo powerful appeal, but the unanswered question is, can that appeal translate to consumer demand for in-store acceptance?

PayPal is already making a run at the merchant community with Venmo. Late last year, it announced that more than 2 million retailers are accepting Venmo online and through their mobile apps and that Venmo users can make online purchases at nearly all PayPal merchants.

Getting Venmo accepted at the point of sale is a way to monetize the service by charging merchant-acceptance fees, as Venmo does not charge for P2P payments. Merchants will pay the same fees to accept Venmo as they do for PayPal, starting at 2.9% plus 30 cents and declining with volume.

"Supporting Venmo at the point of sale is part of our platform," says Magats. "All the capabilities of our platform will be available to any merchant on our platform."

'Just Scratching the Surface'

By all accounts, the partnerships PayPal has struck have put the company, which this year celebrates its 20th anniversary, on a steady march toward establishing a significant presence at the physical point of sale. Whether that happens this year or next or the year after that, only PayPal's leadership knows for sure. What is certain is that PayPal these days is not shy about using partnerships to re-fashion how consumers pay, manage, and move money.

"That's how we progress," says Magats. "When we deliver the experiences customers want, we attract more customers, get more repeat usage, and have less churn. We are just scratching the surface." DT

> 'Supporting Venmo at the point of sale is part of our platform. All the capabilities of our platform will be available to any merchant on our platform.'

Puttin' on Payments

Jim Daly

Wearables, a hot sector within the booming Internet of Things, are being outfitted with new payments technology. Will wearables generate a tide or just a trickle of new electronic payment transactions?

The idea of enabling smart watches, fitness trackers, and other Internet-connected wearable devices to make contactless electronic payments is still young enough to be a novelty, but it's rapidly becoming a requirement for one of the hottest sectors within the exploding Internet of Things.

Business Insider, a New York City-based media and research firm, predicted last March that payment functionality would be included in 62% of wearable device shipments by 2020.

"That could be a catalyst for adoption, particularly in markets where users are already accustomed to paying contactlessly, because it's putting features in the users' hands," Business Insider said in a report.

Later in the year, Stamford, Conn.-based technology consulting and research firm Gartner Inc. predicted that 310.4 million wearable devices would be sold worldwide in 2017, up 16.7% from 265.9 million in 2016, and that sales would increase 12% to 347.5 million units this year (chart, page 34). Bluetooth headsets accounted for nearly half—150 million units—of 2017's wearables, Gartner estimated.

Wearables clearly are staking out valuable territory as the IoT universe of connected cars, household appliances, toys, all manner of other devices, and even clothing, expands.

Boston-based research firm Aite Group LLC forecasted in a May 2017 report that the total number of devices connected by the Internet of Things globally will hit 15.7 billion by 2021, up 127% from an estimated 6.93 billion in 2017.

Standing in the way of widespread adoption of payment-enabled wearables, however, is a less-than-slam-dunk use case, hefty price tags for many devices—Apple Inc.'s high-end Watch Edition Series 3 goes for $1,349—and lingering security issues that could turn off some consumers.

Randy Vanderhoof, executive director of the Princeton, N.J.-based Smart Technology Alliance trade group, says payments have become "table stakes" for wearables. If a device can't make payments, "it's viewed as not being as good."

"Consumers identify with payments, so it becomes an attractive feature to have," he says.

33 Million Watches

That strong identification is a major reason payments leaders such as Visa Inc. and Mastercard Inc., some big banks such as the United Kingdom's Barclays Bank PLC, and manufacturers of fitness trackers, smart watches, and other personal devices, such as Fitbit Inc. and Garmin Ltd., are vying to establish early leads in the payment-enabled wearables niche.

Visa, a long-time sponsor of the Olympic Games, has teamed up with Lotte Card, the financial arm of Korean retailer Lotte Department Store, to roll out three wearables for the 2018 Winter Olympic Games in PyeongChang, South Korea, which start Feb. 9.

They include gloves outfitted with near-field communication technology, commemorative stickers, and an Olympics pin, all of which are capable of making contactless payments through a tap at an NFC-enabled point-of-sale terminal.

The devices, which became available in November, will be sold online until March or when supplies run out. They are the successors to wearables Visa unveiled at the 2016 Olympics in Rio de Janeiro, including a payment-enabled ring.

The most famous wearable is probably Apple's Watch, a smart watch that the Cupertino, Calif.-based smart-phone and computer behemoth introduced in 2015. Watch, like Apple's iPhone, uses NFC technology so that wearers can make purchases through the Apple Pay mobile-payments service.

Apple keeps key statistics, such as Watch's unit sales and Apple Pay transactions, as closely guarded secrets, but research firm Asymco has estimated that up to 33 million Watches have been sold since their introduction.

'Security Exposure'

One big reason for payment companies' enthusiasm for wearables is the growth of NFC-enabled contactless payment infrastructure. Sweden-based technology research firm Berg Insight estimated in late 2016 that the installed base of NFC-ready POS terminals in the U.S. and Canada would hit 9.2 million by the end of that year, a 92% increase over the previous two years.

A big reason for that increase is the U.S. conversion to EMV chip card payments since 2015. Most of the new EMV terminals also can handle NFC transactions, although many merchants have yet to turn on that functionality.

Worldwide, Berg Insight predicted the installed base of 45 million NFC terminals in 2016 would grow to 86.9 million in 2020. It's upon that foundation that wearables payments are rising.

"This is essentially becoming a globally relevant capability," says Stephane Wyper, Mastercard's senior vice president of new commerce partnerships and commercialization.

A Wearables Forecast

(worldwide unit sales in millions)

	2016	2017	2018	2021
Bluetooth headset	128.5	150.0	168.0	206.0
Smartwatch	34.8	41.5	48.2	81.0
Head-mounted display	16.1	22.0	28.3	67.2
Wristband	35.0	44.1	48.8	63.9
Other fitness monitor	30.1	30.3	31.0	58.7
Sports watch	21.2	21.4	21.7	22.3
Body-worn camera	0.2	1.1	1.6	5.6
Total	**265.9**	**310.4**	**347.5**	**504.7**

Source: Gartner Inc., August 2017

Other technological developments are working in wearables' favor, too. With the IoT rapidly expanding, the cost of the device's embedded sensors, which collect and transmit data, is declining steadily, according to Aite.

Citing data from Goldman Sachs and Business Insider's BI Intelligence, Aite predicts that the average cost of an IoT sensor will have fallen from about $1.30 in 2004 to approximately 39 cents in 2020—a drop of 70%.

Furthermore, many payment-enabled wearables rely on the tokenization engines of Visa and Mastercard. These systems protect online and mobile-payment transactions by replacing primary account numbers with digital characters useless to hackers.

"Because of tokenization, which goes hand-in-hand with wearables, it's really taken down the security exposure [from] what it was before," says Vanderhoof of the Secure Technology Alliance.

'A Significant Gap'

The road for wearable payments is not exactly wide open, however. Despite protection during transactions because of tokenization, wearables still are not immune to payment fraud. The original provisioning of tokens into the wearable is a potential weak spot, Vanderhoof notes.

In addition, the sensors in IoT devices, including wearables, all have an Internet Protocol address, says Thad Peterson, a senior analyst at Aite. "A lot of them have default passwords on them," which translates into an "exponential" increase in risk, he says.

The larger risk at the moment, however, is not the theft of payment data, but other types of mischief such as digital denial of service (DDoS) attacks. A massive DDoS attack in October 2016 temporarily slowed down or disabled many popular Web

'It's the convenience factor. Nobody wants to carry these bulky wallets.'

—Avin Arumugam, senior vice president of the Internet of Things, Visa sites. Most fraudsters will find that hacking IoT devices in hopes of stealing payment card credentials is a waste of time, according to Peterson.

"There's probably a lot easier way to get a card; we all know you can go to the Dark Web and buy active live cards," he says. "The theoretical exposure [with the IoT] is there, but realistically ... there's a whole ecosystem already there and working just fine to get you that."

Still, IoT security issues can never be ignored. Beyond that, the case for wearable-generated payments has to be made to consumers. Are they better and faster than old-fashioned payments with a plastic card?

"Right now we still have a significant gap in terms of numbers of places where contactless and mobile are accepted," says Vanderhoof. "The muscle memory of the vast majority of consumers is, insert their card and leave."

The Garmin Forerunner 645 Music smart watch at left is provisioned with a Mastercard card.

Adds Peterson: "It has to make things easier and less complicated."

'Sweaty Money'

But wearables manufacturers and payments companies eager to help them are seeing mostly green lights. The payments use case for wearables is pretty straightforward, according to Avin Arumugam, Visa's senior vice president of the Internet of Things.

"Right now it's the convenience factor," he says. "Nobody wants to carry these bulky wallets." And when you're working out, "cash is harder to carry," creating the risk of what he calls "sweaty money."

So, if you're in the gym or running on a lakeshore path, what better way to avoid sweaty money but still be able to buy some Gatorade or other refreshment than by putting on a Fitbit Ionic, the first smart watch from Fitbit, or a Garmin Forerunner Music 645? Those devices not only store music, but they also come with the Fitbit Pay and Garmin Pay apps, respectively.

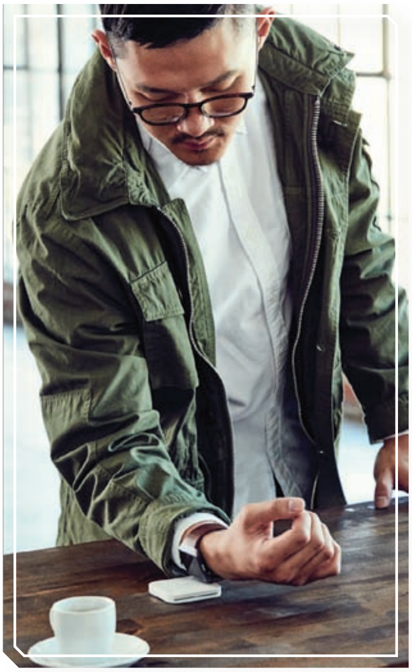
Both Visa and Mastercard announced last August that Garmin and Fitbit were using their tokenization systems to protect payment transactions on their newest wearables.

"We saw an opportunity to integrate payments into those," says Mastercard's Wyper. He adds that wearables are "sort of the first generation of IoT commercial devices. You'll find that wearables is complementary to a much broader effort we're doing around the IoT space."

Neither Visa nor Mastercard will say how much purchase volume they're generating from wearables so far. The manufacturers, meanwhile, have quite a way to go before their payment services become ubiquitous.

Garmin's Web site shows that only 10 U.S. general-purpose card issuers enable their cards for use with Garmin Pay. Some of the participating financial institutions are big, however, including Bank of America Corp., Capital One Financial Corp., and U.S. Bancorp's U.S. Bank.

As of mid-January, Fitbit Pay's roster of U.S. issuer partners was just a shade higher at 11. Besides the three aforementioned banks, they also include American Express Co. and Wells Fargo & Co. Fitbit gained an entrée into contactless payments in May 2016 when it acquired Coin's wearable-payment assets.



A Fitbit customer making a contactless purchase using Fitbit Pay.

Fitbit users add their credit or debit cards via the Fitbit Pay app. To use the service, consumers enter a card number and billing address, and verify their identity through a one-time password or through a card issuer's call center. The issuer verifies enrollment and, upon approval, the consumer's card appears in the Fitbit Pay app. Card data is tokenized within the app.

"We know health and wellness is a top priority for our card members, so we are excited to be part of Fitbit's first payment-enabled device," Matt Sueoka, AmEx's vice president of digital partnerships, told *Digital Transactions News* last summer by email. "This gives American Express card members a convenient checkout experience while they are on the go."

Neither San Francisco-based Fitbit nor Garmin, which has its U.S. headquarters in Olathe, Kan., responded to *Digital Transactions'* requests for comment.

> 'Until the wearable use cases achieve critical mass, it will be a very small percentage of IoT volume.'

No More Than a Blip

By no means do either of those two companies have a duopoly on the payment-enabled wearables action. Other contenders include watchmaker Movado Group Inc., which last March announced it was working with Alphabet Inc.'s Google unit on the launch of Movado Connect, a line of NFC-enabled watches powered by Google's Android Wear 2.0 platform, according to Business Insider. These watches don't come cheap—prices range from $595 to $995.

Over in the United Kingdom, Barclays, the country's second-largest bank by assets, in 2015 unveiled a set of wearables. The lineup currently includes a wristband, watch, sticker, and other products that include the bank's NFC-based bPay service. The wearables can be used for purchases of up to £30 ($41.38). Users don't need to have a Barclays payment card for funding; any Visa or Mastercard card registered to a U.K. address will do.

While it can be exciting to watch the rollouts of intriguing new wearables, the lack of a compelling payments use case for most consumers, the lofty pricing of many products, and a lack of participating issuers in manufacturers' payment systems so far have prevented wearables from registering more than a blip on the payments-volume screen.

"Until the wearable use cases achieve critical mass, it will be a very small percentage of IoT volume," says Peterson. "The price has to come down, and the value has to come up, has to be proven." DT

—With additional reporting by Kevin Woodward

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Clients look to us for ways to transfer money safely, securely, and cost-effectively, and cryptocurrency allows us to move money in all of these ways.

Why We're Offering Cryptocurrency Solutions to Merchants

Solutions are coming for slow speeds and high fees, says Eric Brown, who argues that even now the advantages for merchants are too good to pass up.

Eric Brown is founder and chief executive of Aliant Payment Systems Inc., Fort Lauderdale, Fla. Reach him at eric@aliantpayments.com.

Unless you spent last year living under a rock, you know that cryptocurrency is a sizzling-hot topic right now. Bitcoin's price and daily transaction count reached new heights in 2017, with the number of people with Coinbase accounts going from 5.5 million in January to 13.3 million at the end of November, according to data from the Altana Digital Currency Fund.

Still, if you're like most people, you probably don't recognize how cryptocurrency is changing payments. For the first time ever, transactions and power are being taken away from traditional financial institutions. An increasing distrust of banks has created a climate that is ideal for the rise of alternative payment options like Bitcoin and other digital currencies, which are secure and put users in control.

Cryptocurrency is also a highly accessible means of payment. All a person needs to create an account and acquire cryptocurrency is access to a smart phone or the Internet. This levels the playing field for the approximately 2 billion people worldwide who lack a bank account but do have Internet access or a smart phone.

I personally realized that cryptocurrency and blockchain technology were at the forefront of our industry when my company, Aliant Payment Systems, was working on a large merchant account and the subject of cryptocurrency repeatedly came up. It hit me that we're in the alternative-payment space, and we work with high-risk and e-commerce accounts, so why shouldn't our merchants accept Bitcoin as an alternative payment? These clients look to us for ways to transfer money safely, securely, and cost effectively, and cryptocurrency allows us to move money in all of these ways.

At that time, there was only one company processing for merchants: Atlanta-based BitPay. We partnered with BitPay in September and became one of the first third-party acquirers to offer merchants the ability to accept payments in Bitcoin.

Benefits

Merchants are turning to cryptocurrency payments to enjoy a multitude of benefits that traditional payment methods don't offer, including:

▶ **The ability to transfer funds quickly and inexpensively.** No more domestic and international transfer fees and traditional bank-wait times;

▶ **Simplified payments.** Merchants can receive payments from anywhere in the world, from any computer or mobile device, with no foreign-exchange fees or currency conversions;

▶ **No more chargeback fraud and identity theft.** With Aliant's cryptocurrency-processing platform, once the transaction hits the blockchain, there's no reversing it or stopping it, and no charging it back. There are no rules in place that allow a transaction to be reversed by a consumer—a huge win for merchants;

The Rise of Chargebacks

Did you know that the typical business will only hear from around 4 percent of their unsatisfied customers? That leaves the remaining 96 percent with the potential to file a chargeback against a merchant's business, negatively impacting their bottom line.

The ability to maintain positive cash flow is one of the most important traits of successful small and midsized businesses. Unfortunately, chargebacks are one of the biggest obstacles merchants face when trying to grow their businesses. In fact, according to www.chargebacks911.com chargebacks are rising at a clip of 20 percent per annum, with merchants ultimately missing out on a whopping $118 billion in revenue due to unwarranted chargebacks each year.

Of course, there are legitimate reasons why a customer might issue a chargeback claim against a merchant (such as an item not being delivered). That said, so-called "friendly fraud" chargebacks have increased 41 percent over the last two years and are expected to cost merchants upwards of $25 billion a year by the year 2020 alone.

Historically, customers have issued friendly fraud chargebacks against merchants for a wide array of reasons, including: the item was not as described or was defective, the original transaction was not authorized, or a recurring transaction was not cancelled as requested. While 49 percent of friendly fraud chargebacks resulted from a simple misunderstanding (like the cardholders not even knowing they were filing a chargeback), 40 percent of consumers who commit friendly fraud will do so again within 60 days.

So, as you can see, by abusing the chargeback process to secure a refund, friendly fraudsters can do significant damage to a merchant's small or midsized business. That's why it's imperative that merchants have a payments partner they can trust to help them fight back against unwarranted chargebacks.

CHARGEBACK REDUCTION POWERED BY NORTH AMERICAN BANCARD

At North American Bancard, we've been leading the charge to protect merchants against unwarranted chargebacks for years. "We understand how imperative maintaining proper cash flow is to the hardworking small and midsized business owners we partner with," said Terri Harwood, Chief Operating Officer of North American Bancard. "We also know the challenges those business owners face in the form of unwarranted chargebacks. That's why we've always been so proactive about giving merchants the tools they need to more effectively manage and resolve chargebacks and other disputes."

The most exciting new development in NAB's ongoing mission to fight back against unwarranted chargebacks is the unveiling of Payments Hub, the transaction leader's brand new, online merchant portal. "The Hub" features a handy disputes tab, and an easy-to-use interface that allows merchants to quickly and easily view all their current chargeback and retrieval requests, whether they are "closed," "under review," or have "action required." Merchants can even add comments and supporting documents to help them dispute unwarranted chargebacks. "By simplifying and streamlining the dispute management process for our merchants via our safe and secure online merchant portal, we have significantly reduced the time our merchants need to spend dealing with chargebacks," Bom Lee, vice president of sales for NAB, said. "This allows them to spend more time dealing with the day-to-day tasks of running their businesses."

In addition to dispute management, Payments Hub also enables merchants to access statements and reports, set up customized alerts, accept online payments via a virtual terminal, order supplies, and so much more.

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

▶ **A competitive edge.** Merchants can embrace the rising demand for alternative payment methods by being among the first to accept cryptocurrency payments. Merchants also gain a competitive edge when catering to a millennial clientele that's accustomed to digital wallets, Apple Pay, and person-to-person payments. According to Blockchain Capital, 30% of millennials would rather own $1,000 worth of Bitcoin than $1,000 of government bonds or stocks.

▶ **A great option for high risk, e-commerce, and merchants with big-ticket items.** In other words, those that are looking for secure transactions, no chargebacks, and lower costs, and no limitations on transaction size.

Major Growth

Some of the larger merchants accepting Bitcoin payments today are Lord & Taylor, Expedia, TigerDirect, Virgin Galactic, NewEgg, and Dish Network. One notable merchant that accepts a variety of cryptocurrency payments is Overstock. In August 2017, the online retail giant partnered with blockchain startup ShapeShift to accept more than 60 cryptocurrencies as payment at its online stores.

BitPay reported major growth in 2017, with a 328% increase in their payment dollar volume year-over-year from 2016. The company's merchants received a total of over $110 million in Bitcoin payments per month, with precious metals broker JM Bullion gaining nearly $4 million in Bitcoin sales in the month of June 2017 alone.

Their competitive nature will lead more large retailers to offer alternative payments, bringing us closer to mass adoption. While more merchants are signing up for cryptocurrency solutions, processing volume remains low overall. But as consumers become more comfortable making cryptocurrency transactions on Web sites they trust, it's only a matter of time before they use digital currency in other environments, and processing volume will increase.

Expected Challenges

Our biggest challenge with cryptocurrency payments today is that they need to be faster. The closest thing I've seen to a solution is the Lightning Network, a system of smart contracts built on top of the base Bitcoin blockchain that allows for fast, cheap payments directly between two parties. Lightning introduces coins that are set up for faster transactions with smaller-ticket items. These coins are basically the debit card version of digital currency, and I expect to see more coins come out that serve specific purposes like this.

Transaction fees as high as $28 are threatening Bitcoin's value for small payments, so I can't wait for a company to offer higher volume and discounted mining. The high fees are a growing pain, like the high cost of minutes in the early cell-phone days, but I expect that some major players will get involved, and fees will come down.

Another challenge will be bringing cryptocurrency payments to the retail counter. A colleague of mine had an interesting experience in Europe recently. He saw someone bring a printed-out quick-response (QR) code to a retail counter. The wheels started turning in our heads: as long as a customer has a smart phone, a terminal could issue a QR code on the screen, from which the customer can scan the code to open their wallet. They then approve the transaction, and money is transferred. My team is currently in development to provide a solution using the Poynt terminal, which we like because it's high-speed, has Internet access, and is developer-friendly. DT

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