DIGITAL TRANSACTIONS
Trends in the Electronic Exchange of Value

FRAUD IN AN INSTANT

The fraud that threatens real-time payments is quicker—and demands quicker action.

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HOW WILL FEDNOW UNFOLD?

FEDNOW IS SET for commercial launch next month, but if you're wondering how the Federal Reserve's shiny new real-time payments service is going to be used and what it will cost, just look at how early participants are putting it to work now.

As *Digital Transactions* learned this spring, the nation's banking regulator, along with some of those early users, have already seen some clear patterns in the real-time payments service. That became clear during a panel discussion at ETA Transact, a payments conference in Atlanta organized by the Electronic Transactions Association.

Business-to-consumer payments and payroll are two of the most popular applications so far, said panel participant Tim Boike, vice president for industry relations at the Federal Reserve Bank of Chicago. But that's not all. Boike also pointed to "a lot more activity" in areas such as bill payments, disbursements, and account-to-account transfers.

Add to that cross-border payments, which are attracting "a ton of interest," panelist Stephen Aschettino, partner and head of U.S. fintech at London-based law firm Norton Rose Fulbright, told the audience. Payroll funding through earned-wage access is also a popular application, he added.

But FedNow isn't the only game in town. It has rivals that have been operating for some time, among them The Clearing House Payments Co. and, lest we forget, the card networks. It turns out Visa Inc.'s Visa Direct network is attracting usage in areas the giant card network never considered, including merchant settlement, said panelist Ky Tran-Trong, vice president and associate general counsel for global regulatory affairs at Visa.

Just how and where FedNow will get a workout is of interest because the Federal Reserve first proposed a national real-time payments network in 2019 and has spent the past four years developing it.

Indeed, Boike was careful to outline how the Fed system may differ in crucial ways from its competitors. With FedNow, "We're talking about instant settlement within master accounts at the Federal Reserve," he said. He added the service has "direct connections to many of the financial institutions in the United States." Also, FedNow will be a credit-push platform. "No debit allowed," Boike pointed out.

Boike confirmed FedNow will charge a flat penny per transaction to the requestor, paid by the party that requests the instant transfer (senders pay 4.5 cents). Transactions will be capped at $500,000.

But pricing is far from users' only concern. There's also the crucial matter of fraud (see our cover story on page 20 for more detail). Tran-Trong issued a warning: "There needs to be new fraud tools on top of these payments."

John Stewart, Editor | john@digitaltransactions.net

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PUBLISHER Robert A. Jenisch

EDITOR-IN-CHIEF John Stewart

SENIOR EDITOR, DIGITAL
Kevin Woodward

CORRESPONDENTS
Jim Daly, Peter Lucas

ART DIRECTOR/PRODUCTION EDITOR
Elizabeth Novak

DIRECTOR OF ADVERTISING
Robert A. Jenisch, 877-658-0418
bob@digitaltransactions.net

ADVERTISING SALES REPRESENTATIVES
Robert Mitchell, 877-658-0418, x7
bmitchell@digitaltransactions.net
Rob Akert, 877-658-0418, x6
rakert@digitaltransactions.net

Digital Transactions, Digital Transactions News, and DigitalTransactions.net are publications of Boland Hill Media LLC, 800 Roosevelt Road, Suite B212, Glen Ellyn, IL 60137

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

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WALL STREET'S EVIL EYE FOR PAYPAL

PayPal Holdings Inc. has been known for some time as a major alternative for checkout online, but now the company is making it plain it's putting considerable resources behind checkouts where its services function entirely in the background.

So-called unbranded checkout, led by the company's Braintree processing platform along with a relatively new service called PayPal Complete Payments (PCP), is expected to help drive e-commerce volume for PayPal at a time when consumers are turning increasingly to online buying.

"Unbranded is a strategic imperative for us," Dan Schulman, PayPal's chief executive, told equity analysts during an earnings call last month. The service "is growing faster than the market and we are taking share," he added, though he did not cite numbers.

Trouble is, PayPal makes less money on unbranded checkout than it does when payments occur on its branded buttons. Wall Street reacted to the move by shaving more than $10 off PayPal's share price. By mid-May, the stock was still trading in the low $60s.

Launched late in 2021, PCP is aimed at small businesses and enables them to accept cards and digital wallets as well as a range of Venmo and PayPal services. In April, the service added the ability to accept Apple Pay, a move PayPal had foreshadowed in its November earnings call.

THE SCHULMAN YEARS

	2015	2019	2022
Active Accounts	181m	305m	435m
Payment Volume	$288b	$712b	$1.36t
Net Revenue	$9.2b	$17.8	$27.5b

Source: PayPal

Now Schulman, who said in February he would retire by year's end, is counting on big results, and soon. "Unbranded services will become a clear market leader," driving margin growth for PayPal, he said during the May earnings call. "We put a lot of investment in unbranded checkout and it's taking off."

So much so that PayPal has improved its outlook for e-commerce growth, which the company entered the year thinking would be flat. "It's a much-improved outlook" now, Schulman added.

Perhaps conscious that Wall Street was watching, Schulman added that traditional branded checkout remains PayPal's "highest priority." But then he quickly looped back to the virtues of his topic *du jour*. "We want to drive unbranded," he asserted, in case nobody had been paying attention. "It helps with our data collection, and no question it will be a source of margin expansion."

Schulman reassured everyone listening that PayPal is stealing market share in the buy now, pay later market, though he did not cite figures. The company was early to market with a service supporting BNPL, a checkout option whose installment-payment feature gained appeal with consumers during the pandemic.

The PayPal app, meanwhile, is now being used by 55% of PayPal's consumer base, Schulman added. The app was thoroughly redesigned in 2021as a so-called super app, taking on features such as discounts and rewards through PayPal's Honey service.

Schulman, 65, took over as CEO in 2015 in the wake of the payments company's separation from former owner eBay Inc. Now, a search committee appointed by PayPal's board is looking for his successor. An announcement should come by the end of the year, Schulman said, matching the timing of his departure.

—John Stewart

THE ACH AND DEBIT TOP THE GROWTH CHARTS, SAYS THE FED

Payments analysts looking for where the growth is can find it in the automated clearing house network and in debit cards. With respect to transaction volume, no U.S. payment system grew faster over the three years from 2018 to 2021 than the ACH, which posted a compound annual growth rate of 8.3% to reach 36.2 billion transactions in 2021.

Debit card payments of all kinds—including general-purpose and private-label prepaid cards and cards used in electronic-benefit transfer programs—clocked a 7% rate of growth over the same three-year period, totaling 106 billion payments in 2021. Though still a relatively small number, transactions on EBT cards grew fully 22.2%.

That's according to the latest release of the Federal Reserve's Triennial Payments Study, which appeared this spring (see the accompanying chart for the total for all non-cash payments across the 2015, 2018, and 2021 studies). The massive statistical effort, which the Fed has undertaken since 2001, includes estimates of checks written (a negative 8.3% three-year CAGR) and of ATM withdrawals (down 10.1%) as well as cards and ACH.

It's the first such Fed study to include a full two-year period in

NON-CASH PAYMENTS TAKE OFF

	NUMBER (BIL)	VALUE (TRIL)	AVERAGE
2015	143.6	$86.78	$604
2018	173.7	$98.00	$564
2021	204.5	$128.5	$628

Source: Federal Reserve Payments Study

which consumers and businesses struggled to contend with a pandemic that temporarily restricted in-store shopping, forced conversions to contactless payments, and drove the payments industry to depend increasingly on e-commerce.

For cards, the fastest three-year growth was posted by general-purpose prepaid cards, at 14.1% to reach 8.9 billion transactions. Private-label prepaid, on the other hand, posted a negative 2.5% growth rate to finish with 5.1 billion transactions in 2021. Non-prepaid debit hit a healthy 6.5% CAGR to reach 87.8 billion payments. Overall, debit cards of all kinds posted 106 billion transactions in 2021.

General-purpose credit cards hit 47.8 billion transactions, growing at a three-year CAGR of 5.3% through 2021. Private-label credit cards, however, continued a long-term swoon, dropping 4.9% over the three-year period to 3.3 billion transactions in 2021. The average ticket on credit cards of all kinds was $96 in 2021, up from $89 in 2018.

With the rise in digital-payment methods, ATM cash withdrawals are slumping "substantially," according to a Fed release about its study. The total number of withdrawals in 2021 came to 3.7 billion, down from 5.1 billion in 2018, according to Fed estimates included in the study. That number had held steady more or less in the previous three-year window, 2015-2018.

—John Stewart

MONTHLY MERCHANT METRIC

March '23 (Trailing-3 Months) Account Attrition and Growth

This is sourced from The Strawhecker Group's merchant datawarehouse of over 3M 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 $5M in annual card volume.**

Beginning	100.0%
Account Attrition	-21.2%
New Accounts Added	16.3%
Ending	95.1%

Metric Definitions: (Only use definitions related to an individual month's release)

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

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

FISERV GIVES TEXT TO PAY A BIG BOOST

Fiserv Inc. this spring partnered with conversational-commerce platform provider Authvia to enable independent software vendors to offer a text-to-pay solution through Fiserv's CardPointe gateway.

The offering, which was developed in response to the growing use by businesses of tools to communicate with consumers via text and chat, allows firms to bill, invoice, and accept payments from consumers via text and chat. When a new communication channel emerges, often a new payments channel emerges as well, Fiserv says by email.

Independent software vendors—the entities that weave payments programming into business software—will be able to connect their processing services with Fiserv's CardPointe gateway through Authvia's platform. As a result, ISVs will be able to integrate text-based payments into their software without developing their own solution, according to Fiserv.

To enable a text-to-pay transaction, merchants send a payment request via text messaging or prompt the customer at checkout to pay via text.

One advantage of enabling payment via text messaging is the 98% open rate for text messages, which positions the technology as a way for merchants to offer a convenient mobile-payment option for consumers, according to Fiserv. Another advantage is that transactions happen in a single message thread. No logins or passwords are required to initiate a transaction.

"As consumer demand fuels the software-led payments evolution and ISVs focus on building for the future, Fiserv is expanding its digital-payments capabilities into conversational commerce," Jon Halpern, head of ISV for Fiserv, says in a statement. "Authvia provides a robust solution that aligns with our ISV payment engine, with industry-pacing technology and real experts helping to guide integration."

A relatively new payment option, text-to-pay has been gaining momentum in recent years. Early this spring, mobile-management platform provider Passport Labs Inc. launched a text-to-pay solution for parking in Atlanta, Decatur, Ga., New Orleans, and Gretna, La. The company, which is partnering with parking-facility management-services provider SP Plus Corp., will enable consumers to pay for parking by text using SP Plus's Parking.com solution.

A big advantage of using text-to-pay for parking is that consumers do not need to download a separate app, according to Passport, which plans to launch the solution in Annapolis, Md., Beaufort, S.C., and Harrisburg, Pa., in the coming months.

Text-to-pay has also found its way into the world of buy now, pay later solutions. In 2021, BNPL provider Opy USA Inc. partnered with Everyware Worldwide Inc., a contactless-payments and customer-engagement provider, to enable buy now, pay later by text.

—*Peter Lucas*

A NEW LANGUAGE FOR MONEY

BY
GIDEON
SAMID
gideon@bitmint.com

THE ALPHABET OF money used to be the various coins that were put together to make a financial statement. Or similarly, the various denominations of bank notes that were bound to express a given sum. And then we invented computers, and a new language for money came forth. Money was written as a number representing value, associated with meta-data embodying a pointer to its owner and expressing various attributes, such as US$, €, or Yuan, debit, credit. That is how money is written today.

Which is about to change.

The problem with today's language is that money has no identity, only a value. By contrast, every banknote carries a unique serial number distinguishing it from other banknotes of the same value but of different identity. Identity is critical for something called tethering (see my book, *Tethered Money*). This is a process of tying a sum of money to terms of use. Identity-less money cannot be tethered. A written number, say, $10, has no identity. As money migrated to cyberspace, it lost its identity. And we had better restore it, using a new language.

A lump of matter (coin or banknote) carries an identity through an intrinsic multitude of properties, like weight, size, shape, color, fabric, and so on. Now, suppose we take a value, say $10, and express it as a string of 1,000 bits, where the identities of these bits are determined by a source of randomness. We call this action "minting." We thereby bit-mint a $10 coin. To mint another $10 coin, we repeat the process, using again a source of randomness to specify the identities of 1,000 bits.

The nature of randomness is such that the second $10 coin will be different from the first. And even if we mint a gazillion $10 coins, there is no feasible chance for the identities of the respective bits to be the same. For perspective: The number of sand grains in all the beaches on earth is a tiny fraction of the number of different strings of 1,000 bits.

Bitminting is a process in which money is written such that it expresses value, $10 in our case. This money also has an identity, expressed in the particular string of 1,000 bits in which the $10 is written. Bitminted coins can also be tethered. And, of course, they can be identified.

Randomness, then, restores money to its pre-cyber era expression, with identity and value fused and inseparable. This act—upgrading money from a number (value) to a value plus identity—is the fundamental change cyber money brings. Before this new, bit-minted money language, the only way to authenticate a cyber-payment was to identify both the payor and the payee, so payment privacy vanished. Our payment history tells the government more than we wish to expose.

Because this new money will have an identity, we can check if it is tethered to an owner, or to terms. Because money will have an identity, we can suspend its status when it's involved in criminal activity. Because money will have an identity, we can deposit it in an Internet-of-Things device and let our car pay parking fees. Because money will have an identity, we can split it into small measures and fire those bits as fast as electrons flow, thereby purchasing split-second services. Because money will have an identity, we can make cyber payments offline, when the Internet is down.

We have only begun to imagine what this new language of money will lead us to. Payments is the lifeblood of society. We're just acquiring healthier arteries. DT

GET THE FUNDAMENTALS RIGHT

BY BEN JACKSON
bjackson@ipa.org

THE LESSON INNOVATORS need to learn from recent industry turbulence is that fundamentals still matter.

The collapse of Silicon Valley Bank, the consent order against Cross River Bank, and other recent events show that companies and regulators must focus on business basics.

It is tempting to say SVB's failure is evidence that social media and digital banking mean we are in a new age. But it really shows that factors like good analysis, having the right people, and paying attention to market changes make the difference between success and failure.

At the risk of over-simplifying a complex situation, SVB failed because bad risk management led to a liquidity crisis. According to the Federal Reserve's report, the bank expected interest rates to fall and structured its portfolio accordingly. As rates kept rising, they had to raise capital. But once depositors got worried about its condition, the run on the bank began.

Of course, social media made it easier to share concerns, and digital banking made it easier to open accounts elsewhere. But there would have been no news to spread if the bank had managed its portfolio better. Also, even with digital banking, there were plenty of stories about depositors lining up at branches to get their money.

But it is not just bank failures that show the importance of fundamentals. Recent enforcement actions show what can happen when banks forget the basics in their excitement over new possibilities.

In March, the Federal Deposit Insurance Corp. issued a consent order against Cross River Bank requiring it to improve its third-party oversight and risk assessments and forbidding it to add any third-party relationships without approval. It also requires Cross River to monitor its external partners for Fair Lending Act compliance.

With so many banks acting as issuers, it is not surprising that other banks have been critiqued for their third-party management. In 2022, The Office of the Comptroller of the Currency called on Blue Ridge Bank to improve its oversight of partners, among other things.

But managing third-party risk is nothing new. The OCC put out guidance in 2013 on how to do it, and then updated that guidance in 2022.

Another business basic that shows up in all three of these instances is having the right people. SVB was critiqued for not having a chief risk officer for much of the time. And the consent orders mentioned above underscore the importance of having experienced directors and staff to manage risk.

At the same time, the industry is not the only one that needs to remember its basics. To their credit, both the Federal Reserve and the California Department of Financial Protection and Innovation released reports that said they could have done a better job in supervising SVB. They said they should have required faster remediation of risks and better coordination between the multiple regulators watching the bank.

At the same time, banks and payments companies cannot ignore how advances in technology will bring new challenges. The regulators have begun calling out these risks. For example, a recent joint statement by four agencies, including the Consumer Financial Protection Bureau and the U.S. Equal Employment Opportunity Commission, says they will monitor artificial intelligence and other systems to ensure that discrimination laws are not violated. The CFPB also released a statement last year charging that lenders hide behind algorithms to evade consumer-protection laws.

As payments companies integrate new technology and create innovations, they need to put those innovations into a context of sound business models, risk management, third-party oversight, and compliance. New technology does not make these factors obsolete. DT

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WHY NICHE MARKETS ARE RIPE FOR CASHING OUT CASH

There are still plenty of cash-heavy merchant markets that are looking to launch—and expand—digital payments.

BY **PETER LUCAS**

AS DEEPLY EMBEDDED as digital payment are at the point of sale, there are still merchant segments that are heavy on cash and light on digital-payment technology. These markets—including vending machines, micro-markets, and laundromats—are beckoning to payments providers.

At the same time, many payments providers pursuing these venues are pushing into emerging markets that accept only digital payments, such as electric vehicle charging stations.

But the pathway for tapping into these markets is by no means unimpeded for payment providers.

For one thing, it can be tricky to make the economics work. In vending, for example, it can cost more to process a transaction than the cost of the product sold.

There are also infrastructure issues, as is the case with the electric-vehicle charging stations, where a lack of standards initially hindered interoperability between station operators' apps. As a result, vehicle owners had to load multiple apps to power up away from home.

A 'RED OCEAN'

Such barriers to entry, however, have not deterred payment providers specializing in these niche markets from carving out their share of the pie.

Of the markets now targeted for the addition or expansion of digital-payments options, vending arguably has one of the highest penetration rates for digital-payment acceptance.

In 2022, 67% of all vending sales were cashless, according to Cantaloupe Inc., which specializes in payment technology for vending machines and self-service marketplaces. Of the cashless transactions at vending machines, 53.9% were made using contactless cards.

"Consumer preference and the convenience of being able to pay digitally are what's driving the move away from cash in this market," says Cantaloupe chief executive

Ravi Venkatesan. "Vending operators, too, are realizing the advantages of digital payments as the cost of handling cash and shrinkage continues to be a problem."

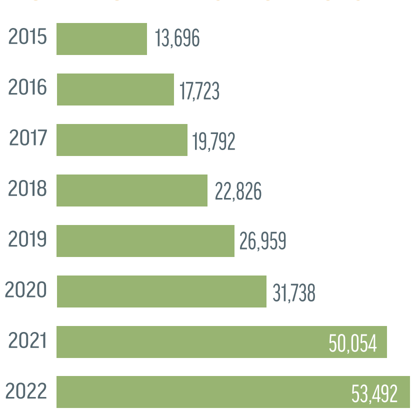
Indeed, the rise in cash-handling costs has mirrored the rise in the cost of labor over the past couple of years, growing 10% to 15% during that period, according to Venkatesan.

Another factor in the business case for digital payments at vending machines is a higher average ticket. In 2022, the average cashless purchase at a vending machine was $2.11, compared to $1.36 for cash purchases, a 55% increase in consumer spend, according to Cantaloupe.

"Digital payment acceptance also makes it easier for vending operators to raise prices, especially in inflationary times, because consumers won't be limited by the amount of cash in their pocket," Venkatesan says.

That means higher overall sales for vending machine operators. Nayax Ltd., a fintech that also provides cashless-payment solutions for vending machines and unattended retail, says its clients can see as much as a 50% increase in sales after installing cashless payment. More specifically, vending-machine operators see an average increase of 30% to 40% in overall sales.

U.S. EV CHARGING STATIONS HAVE QUADRUPLED SINCE 2015



Source: Alternative Fuels Data Center and Transportation Energy Data Book

Overall, there are between 3.5 million and 4.5 million vending machines in North America, according to Cantaloupe. Total sales this year at vending machines are projected to grow 10% to 12%, with the average ticket for cashless transactions increasing to $2.40, compared to $1.52 for cash transactions.

And there are growth opportunities. Nayax says less than 20% of unattended devices accept cashless payments. And the unattended-retail market is estimated to grow to $133.3 billion by 2025, up from $44.4 billion in 2020, while vending is projected to become a $56.3 billion market in 2025, according to Nayax. In addition, the number of unattended retail devices has the potential to reach 54 million in 2025, up from 44 million in 2020.

"Given current market trends, we see a huge potential for growth in cashless payments overall," says a spokesperson for Nayax. "Processing digital payments for vending machines is a competitive market—a red ocean, if you will. We're seeing more consumers adapt to new payment methods such as contactless and digitalized methods."

IMMEDIATE PAYMENT

Aside from vending, digital payments are taking root in amusement parks, arcades, golf-ball dispensers at driving ranges, and even in massage chairs at airports. "In amusement parks we found that when people pay for gaming digitally, they spend $5 on average, compared to 95 cents when using cash," says Venkatesan.

While Cantaloupe sees tremendous growth in vending, unattended retail, and electric-vehicle charging, there are only a handful of competitors in these markets. The reason is that most payment providers can't make the economics work given the small ticket sizes.

"We handle more than [a] billion transactions, most of which are in the $2 range," says Venkatesan. "Not every company that wants to compete in this space can make the economics work. We have invested in building an infrastructure that can handle small and large tickets efficiently and fought with payment networks for a more efficient cost of acceptance for transactions."

EV charging stations are a relatively new market, but the opportunity here has grown as the sales of electric vehicles increase and more automakers add electric vehicles to their lineup.

As more electric vehicle charging stations are built and made available at hotels, malls, and in parking lots—station operators have been forced to make their respective apps interoperable with one another to enable payment from more customers. As a result, consumers no longer have to download an app for each charging-station brand.

"This helps maximize utilization rates," says Joseph Levy, chief technology officer for Driivz Ltd., a provider of white-label charging-management software. "Roaming is no longer a barrier." As of the end of last year, there were almost 54,000 charging stations in the U.S., according to Alternative Fuels Data Center (chart, page tk).

On the payments side, Driivz's software allows charging-station operators to offer a variety of payment options, including subscriptions, memberships, and pay-at-station. In addition, station operators can offer consumer incentives, such as an additional $10 credit when purchasing a subscription, to engender customer loyalty.

The software also supports dynamic pricing, such as changing prices during peak and non-peak hours for electricity usage. Driivz connects to multiple payment gateways to enable payment.

"We have helped move charging-station companies away from an end of month billing model to immediate payment," Levy says. "Our software even enables charging companies to book reservations for a fee."

For example, a consumer booking a reservation may be charged $5, with a $3 fee charged to the payment method used to book the time slot if the consumer fails to show for her appointment.

Payments aside, Driivz also provides operators with a couponing program. The idea grew out of the fact that EV charging can be a lengthy process. Rather than have customers mill around with nothing to do, the charging station can send a coupon to a customer's app that can be used in an adjacent convenience store. If the charging station is located at a mall, coupons can be generated for stores within the mall.

"As the industry evolves and EV becomes more central, digital payments and apps, too, will be key as these payment flows are almost entirely digital—often, even reloadable or prepaid balances that the consumer can use," says Scott Mackay, vice president of Carat Connected Commerce for Fiserv Inc. "And in the future, digital payments and apps will create a canvas to further introduce loyalty, embedded financial tools, and other solutions."

MINIMIZING APPS

Parking, which has been steadily gravitating toward digital payments for more than a decade, is another market ripe with opportunity for the expansion of digital payments. One such opportunity lies in text-to-pay, which enables merchants to accept payments through mobile text messages.

A relatively new payment option, text-to-pay has been gaining momentum in recent years. One company applying it to parking is mobile-management platform provider Passport Labs Inc., which recently launched a text-to-pay solution for parking in Atlanta, Decatur, Ga., New Orleans, and Gretna, La.

The company, which is partnering with parking-facility management-services provider SP Plus Corp., will enable consumers to pay for parking by text using SP Plus's Parking.com solution.

One factor driving the adoption of text-to-pay is that consumers want to minimize the number of apps they need to load on to their phone to enable payments.

"In the context of parking, this situation is an opportunity for a municipality to provide its constituents with various options, ultimately increasing compliance. Also, technology improvements, particularly in mobile Web experiences, have made it easier to use digital payment methods," says Sarah Ratcliffe, senior vice president for Product Management at Passport.

"As people get more comfortable using these improved technologies," she continues, "it has led to some pushback against mandatory app downloads and the favoring of other options like text-to-pay or QR codes."

Fiserv has also jumped into the text-to-pay fray by partnering with conversational-commerce platform provider Authvia to enable independent software vendors to offer a text-to-pay solution through Fiserv's CardPointe gateway.

The solution was developed in response to the growing use by businesses of tools to communicate with consumers via text and chat. It enables businesses to use text and chat to bill, invoice, and accept payments from consumers.

"Demand for text payments is driven by the growth of digital payments and the growth of texts [and] messaging as a channel for business-to-consumer communications," says Mackay. "When a new communication channel emerges, new payments are likely to follow. These emerging payments can be beneficial for merchants as another way to modernize the payments experience, providing optionality and convenience to consumers."

As the availability of digital payments in niche markets increases, so too do the opportunities for merchants to deepen their relationships with consumers. "Through these enhanced commerce experiences, brands are unifying what were previously viewed as transactional customer experiences with the goal of building deeper and more loyal relationships with their customers," Mackay says. DT

FRAUD IN AN INSTANT

The fraud that threatens real-time payments is quicker—and demands quicker action.

BY KEVIN WOODWARD

Today's world of instant gratification is about to take another big leap forward in July when a second real-time payments network debuts with the launch of FedNow, the Federal Reserve's instant-payment network.

Announced as a concept in 2019, two years after The Clearing House Payments Co. LLC launched its Real Time Payments service, FedNow will begin with a set of approximately 120 participants. Another group, characterized as fast followers, will come onboard later. The pool of potential FedNow financial institutions, directly or indirectly, is more than 10,000. The TCH network has more than 300 active participants.

Financial institutions, service providers, and processors are keenly anticipating another opportunity to expand services and cultivate deeper relationships with their clients. But criminals, too, are aware of real-time payments and the fraud opportunities they can present.

And while the United States often is a leader in electronic payments, when it comes to real-time payments, it decidedly is not. India launched its faster payments service in 2016, and Singapore did so in 2014. And the United Kingdom has had a faster-payments system since at least 2008. The experiences of these systems and others could aid the U.S. faster payments environment, just as the nearly six years of experience at the TCH RTP network can.

'First Line of Defense'

And when it comes to fraud, experience will matter—a lot.

"There is often a lag between instant payments coming online and fraud attacks in a new market," says Shahar Ronen, product manager of payment risk at Plaid Inc., an open-banking specialist. "Fraudsters will take the time to understand the new market structure and identify points of weakness. It may seem initially that fraud is less of an issue than expected, but it is generally only a matter of time."

The Federal Reserve is well aware of the potential for criminal activity involving FedNow. That's why it set transaction limits at the network level—the cap is $100,000 but can be as much as $500,000 on request—and will enable participants to set lower limits. Financial institutions may also maintain negative lists that specify suspicious accounts their organizations can't send to or receive from.

In its literature about instant-payment fraud, the Fed says participating financial institutions are the "first line of defense." Any transactions they detect as fraud must be reported to the FedNow service to help with mitigation efforts.

Other risk-management measures include the ability to select the level of participation, to ask for more information from the originating entity, and to use of digital signatures when exchanging messages. Encryption and tokenization applications will be used, too.

Enlisting participating organizations as the "first line of defense" implies a level of education to be alert for fraud, criminal behavior, and other indicators. Educating participants, many observers agree, will be a priority in countering real-time payments fraud.

"It's important to educate users on the risks and the opportunities of real-time payments," says

Ross Hamilton, chief information security officer at Episode Six, an Austin, Texas-based payments-technology company. "Guidance is needed on how to recognize and avoid common scams and should be tailored depending on whether the use is a regular consumer or has a merchant account."

Education is a top priority, says Rodrigo Figueroa, chief operating officer at Chargeback Gurus, a McKinney, Texas-based chargeback-mitigation firm.

"Once users understand the potential of such an infrastructure and how to use it, they will be much better positioned to make choices that reduce their exposure to harm," he says. "It is imperative that education comes with content to promote secure behavior, especially when it comes to scams, which tend to increase with the introduction of real-time payments."

Also aiding in spotting and stopping fraud is simple familiarity with faster payments. That could come at a financial institution that already works with TCH and its RTP service, or at an entity that offers the Zelle a peer-to-peer payments platform from Early Warning Services LLC. Or it could come from executives who have personally used a faster-payment service.

'Payments Are Final'

Fraud on the TCH RTP network remains low, says Lee Kyriacou, vice president of RTP product management for TCH. "The RTP network is a credit-push system where the payer instructs the bank (or non-bank provider) to make a payment rather than the payee having funds debited from the payer's account," Kyriacou says in a response sent to *Digital Transactions*.

"Credit-push systems are generally considered to be safer by design because making a payment does not require the payer to authorize a third party to pull money from its account," he continues. As a result, he adds, such systems have "much lower fraud rates."

Across the RTP network, TCH has focused on mitigating fraud concerns by employing a mix of technology and consumer education on security best practices, Kyriacou says.

"We've found that fraud prevention requires ongoing consumer education of payers about account security best practices, such as using complex passwords, two-factor authentication, and putting in friction before a payment is made, e.g., pop-up notices like 'Only make payments to those you trust' or 'Payments are final'" he says.

Another consideration in countering fraud in an instant-payments environment is the pace of transactions and their irrevocable nature.

"Moving to real time means everything needs to be more exacting," says Adam Gamble, product director for financial crime, treasury, and risk at Temenos, a Switzerland-based financial-services platform. That means, in terms of the process, checking for sanctions and for fraud, he says. In Europe, for example, demand is up for real-time anti-money laundering checks, Gamble says.

'Detecting the Signals'

The concept of instant payments is more exacting than that of other payment types. While a successful instant payment can be satisfying to the payer, payee, and financial institution, when it's interrupted there can be fallout, Gamble says.

Gamble: "Everything needs to be more exacting."

"The more consumers rely on that experience, the brand becomes more important," he says. "The bank's job is to elevate everything. It is challenging. It does open a new financial-crime vector."

Initial FedNow use cases are more business-oriented, but even a bank or credit union's client will need to educate its staff about how real-time payments work if they are new to them. Criminals may use phishing or social engineering to manipulate employees into authorizing a push payment.

"With higher transaction speed, victims have less chance to revert a fraudulent transaction if they find out later that they were scammed," says Bence Jendruszak, chief operating officer of Seon, a London-based online fraud-prevention provider. "Customers need to be aware of the risks and have to be vigilant. Awareness communications and education of customers are even more important and have to be done by financial institutions."

While algorithms and rules can be operated along a rules-based system, accounting for the human element in a payment transaction is less rigid.

"It is a commonplace in information security that humans are the weakest link," Jendruszak says. "Many fraudulent transactions [using] stolen credit card information start with a phishing email or SMS. Financial institutions should strive to inform users about this kind of attack to keep them more or less safe."

The fraudulent-transaction reporting requirement built into FedNow also speaks to the role of collaboration in thwarting real-time payments fraud.

"There will not be a single solution to solving instant payments fraud," Plaid's Ronen says. "Collaboration between financial institutions, payment processors, technology providers, and regulatory bodies is essential.

"Money will be moving in real time, we—as a collective—need to be learning and detecting the signals in real-time," Ronen adds. "As we've seen through cross-industry collaboration in the U.K., Brazil, India, and several other markets with successful instant-payment systems, [authorized push-payment] fraud requires a range of technical, policy and regulatory, and coordination tools. If we do not do it holistically, we open ourselves up to vulnerabilities which impact the adoption of the new infrastructure and capabilities."

'The Eye Opener'

Instant payments will require instant fraud decisions, not too unlike what many involved in payments are accustomed to with card payments, e-commerce transactions, and peer-to-peer payments. What's unique about real-time payments, especially with FedNow, is that, once authorized, the transaction is done and irrevocable, placing more emphasis on ensuring the validity of the transaction components.

"We know that every best effort has been made to secure information and prevent fraud at the source," says John Buzzard, lead analyst for fraud and security at Javelin Strategy & Research, a Pleasanton, Calif.-based financial consultancy. "The rest of the heavy lifting is on the financial institutions to solve for and it's not unreasonable."

"The eye opener for financial institutions," he continues, "should be the addition of specialized analysts who are in charge of the fraud-response and -mitigation process. This won't be something that you can just add to someone's daily job duties without suffering some major growth and fraud-loss pains."

Figueroa: With real-time payments, education is a top priority.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Jimenez: Banks will need a faster fraud-decisioning process. It won't be easy.

Real-time payments can alter the fraud-decision process, says Parag Rohan Jain, vice president and general manager of real-time payments at Brookfield, Wis.-based Fiserv Inc. "The rate of fraud detection is highly correlated with the speed of the payment," Jain says. "You need the ability to detect fraud before a [request for payment] is sent across the rails."

A request for payment is a tool for a person or organization to request an instant payment from another person or organization, according to the Fed. "Fraud detection needs to be in advance of executing a send instruction," Jain says.

'A Sustainable Balance'

As FedNow's commercial debut nears and it joins the TCH RTP network in providing a financial institution-focused instant payments environment, it will face some familiar fraud threats that it is prepared for. But, especially if FedNow is a catalyst for widespread real-time payments adoption, it could foster a new security norm, one based on consumer and business education, collaboration, and speed.

For financial institutions, that will mean a faster fraud-decisioning process, says Jorge Jimenez, president of Juniper Payments LLC, a Wichita, Kan.-based payments and banking services provider. Juniper is part of PSCU, a credit union service organization. That won't be easy to do.

"Financial institutions need to enforce time-efficient fraud-prevention measures while improving false positive rates and ensuring a seamless user experience," Jimenez says. "To achieve this, sophisticated fraud-prevention measures similar to those currently in place for cards are necessary, such as two-factor authentication and real-time monitoring."

This means manual tasks are not feasible in detecting real-time payments fraud. "Specialized systems with low response time and high transaction-processing capabilities with the support of highly customizable, complex detection and evaluation rulesets are essential to combat fraud at this speed," says Seon's Jendruszak.

While balancing fraud measures against legitimate transactions, real-time payments providers can adopt a multi-layered approach that combines prevention, detection, and response, suggests PJ Gupta, chief executive at San Mateo, Calif.-based Checkbook, a payments provider.

Risk-based transaction monitoring and transaction limits can help with prevention. Real-time monitoring and transaction data analysis to detect anomalies and suspicious activity are another element. "In the event fraud is detected, it is important to respond quickly to minimize losses and prevent further damage," Gupta says.

Contending with the possibility of real-time payments fraud doesn't necessarily mean a wholesale overhaul of an organization's approach to prevention, but it does require a unique review of how such crime differs from other fraud.

There may be an assumption in some places that real-time payments are similar to card transactions, Figueroa says. That idea "could not be further from the truth," he adds. "For this reason, real-time detection models need to be super-calibrated and updated constantly to ensure a sustainable balance between usability and risk." DT

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FASTER PAYMENTS MEAN REAL SUPPLY CHAIN GAINS

Real-time payments can bring much more flexibility—and potential profit—to businesses of all sizes. Following Covid's chaos, that's good news.

BY **ABHISHEK VEERAGHANTA**

Abhishek Veeraghanta is the chief executive of Pidgin.

SUPPLY-CHAIN CHAOS has forced many companies to adopt new strategies to keep goods moving and meet demands for fast funds. The financial-services industry is no exception to the growing demand for payments innovation. The need for immediacy in payments continues to directly impact supply-chain productivity and cash flow.

But beyond boosting productivity in the supply chain, real-time bank transfers are the future of payments, with more than 85% of businesses hoping to convert to real-time transfers this year. Faster payments further positively change the supply chain and financial-service providers in a few ways.

Businesses want to bridge the gap between the supply-chain crisis and their payments technology. With transactions that take up to three or four business days to complete, the lack of immediacy hurts both cash flow and supply-chain productivity.

For example, many manufacturing firms put production on hold until they can guarantee invoice settlement to offset their workers' wages and other variable costs. And downstream transportation providers have challenges with increased costs, shifting labor availability, and inconsistent delivery schedules.

When supply-chain issues and other economic disturbances arise, the ability to settle and clear payments in real time can provide stakeholders with immediate access to funds. These organizations benefit from greater flexibility when managing funds, and making timely payments becomes much more manageable. As a result, faster payments can lead to a more efficient supply chain, driving economic growth.

CONNECTING DATA

To provide a simple overview, with real-time payments a company can immediately pay its supplier once an invoice is received. This ensures production begins sooner and ultimately minimize delays in the delivery of goods or services.

Instant payments can also help give companies a competitive advantage when working with other business partners. Partners can prioritize which orders to fulfill based on which company offers the best payment terms or can pay the fastest. If a company can pay an invoice instantly, it can get the supplies it needs sooner rather than later.

Beyond helping boost supply-chain efficiency, the ability to settle and clear payments in real time offers greater cash-flow visibility, which can make for better money management. Concerning cash-flow management, businesses of all sizes want immediate access to funds, and many would be willing to pay more for faster payment availability once they're initiated.

One of the benefits of real-time payments is the ability to connect information about the payment to the transaction itself. This helps keep all parties updated on the payment details, ensuring everyone is informed about when a payment has been received and what it's for. With this additional payment information, businesses can optimize their working capital.

Consider a health-care clinic, for example. The clinic must send bills to insurers and patients, process the payments, and reconcile the payment data associated with those transactions. The company must have a clear view of its payment data to make optimal business decisions about insurers, patients, and the health-care providers employed at the clinic.

For merchants, real-time payments not only make it easier to manage cash flows but can also make it easier to track inventory and forecast future sales. This helps businesses manage their inventory and staffing needs and can even help determine when and where to invest in new technology or equipment to drive growth and boost profitability.

FLEXIBLE ENOUGH?

As we approach the upcoming launch of the FedNow service, financial-

Veeraghanta: "Those that invest in faster payments will position their organizations for success, despite inflation, supply-chain disruptions, and more."

services providers nationwide must consider how they plan to address the growing business demand for faster, more efficient payment processes.

And as more businesses look to adopt instant payments, financial institutions should also consider their faster-payment strategies and the implications for their institution's product offerings, existing technology and core-banking systems, back-office workflows, and customer-facing applications.

As new use cases for faster payments are identified, and businesses' needs and expectations shift, financial institutions should expand their focus and ask themselves whether or not their underlying technology is flexible enough to adapt to evolving customer and regulatory needs.

For instance, many financial institutions often operate a half-dozen or more platforms to process payments based on the payment type, such as automated clearing house, wire, and more. Back-end systems are even more complex for financial institutions acquired or merged with other institutions.

These systems are typically siloed, making capturing or properly using data and analytics difficult, if it's even possible. However, good transaction data can help a financial institution understand how its business customers transact and which new payment options might be most helpful.

FINANCIALLY RESILIENT

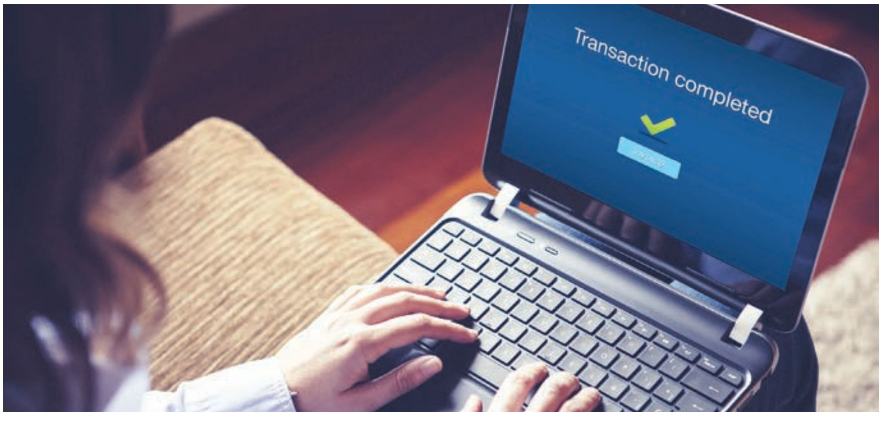
More than one-third of businesses want to improve the speed and effectiveness of making and receiving payments, according to the latest edition of the American Express Global Business Spend Indicator (GBSI). Clearly, businesses understand the value of faster, more efficient payment processing.

Faster payments create a unique competitive advantage for businesses of all sizes, including reduced costs, improved supply-chain efficiencies, and better money management. Instant payments have the potential to fuel economic growth on a large scale, boosting bottom lines for businesses across the country.

And for financial institutions, real-time payments open up opportunities for new revenue streams and ensure liquidity through the efficiency gains offered.

Those that invest in faster payments now will reap the benefits sooner rather than later and position their organizations for success, despite inflation, supply-chain disruptions, and more.

With faster payments, navigating these economic hurdles is much easier and ensures businesses, including the financial institutions that provide those services, are financially resilient and optimized for growth. DT



WHEN PAYMENTS GO TO COLLEGE

Bringing digital technology to campuses can engender loyalty for a lifetime.

BY LAURA NEWELL-MCLAUGHLIN

Laura Newell-McLaughlin is executive vice president, payments, at Transact Campus.

MOST BUSINESSES ARE facing the new normal of lean operating staff and growing overhead, but colleges and universities have an added hurdle. They must anticipate constantly changing needs and expectations for a tech-savvy and digital-native student market while navigating the limitations of legacy systems, as well as reduced staffing and support services.

In particular, the challenge on college campuses is the delivery of leading-edge solutions in an environment of increased budget pressure. These solutions meet the next generation where they live—on the latest mobile devices—with easy-to-use, reliable, state-of-the-art solutions.

The latest fintech solutions are doing just that. It's a win-win-win for businesses, colleges, and students. Colleges are modernizing to meet their operational challenges and students are loving life on campus because it's digital, just the way they expect it to be.

IN THE HOUSE

College is big business. How big? The National Center for Education Statistics lists over 3,000 two- and four-year colleges that together generate nearly $700 billion in revenue. Fintech providers know college is a big opportunity to fundamentally transform the foundations of college-campus operations. They also recognize the importance of helping institutions meet the expectations of the digitally native Gen Z through efficient mobile payments, e-commerce transactions, and daily applications, such as credentials that create one connected experience.

The company I work for, Transact Campus, facilitates more than $45 billion in payments annually, and has enabled more than $120 million in mobile-credential transactions and $200 million in mobile-ordering financial transactions in less than three years.

Gen Z is in the house, and they are shrewd consumers, eager to engage with socially conscious brands. Savvy fintech providers that successfully penetrate this captive college audience are focused on mobile-centric platforms to connect campuses. They have identified three key elements of service:

- for client institutions, a payments system that streamlines tuition, housing, dining, and fees for both foreign and domestic students;
- for students and staff, a credentials system that provides easy access to campus facilities and resources using a mobile interface;
- for partner brands, built-in interfaces with apps and services to build loyalty with a flexible and nimble e-commerce platform that can include campus outlets, retail partners and off-campus shopping and services.

On college campuses, maximizing 21st-century tech requires system integration that eases the workload for in-house IT departments while benefiting administrators by integrating student information with convenience and safety features such as remote issuance and building lockdown.

Leading fintech providers are bringing campus technology into an integrated platform that includes edtech solutions such as Jenzabar or Anthology, secure payment services from providers including ApplePay, GooglePay, TransferMate, and 529 plan Service Providers, and partners that can provide cloud solutions and security, as Microsoft does, and SaaS, as Ellucian does.

As staff bandwidth on college campuses is increasingly stretched, sometimes beyond capacity, streamlining campus connections using advanced fintech eases transaction friction, which can also reduce staffing needs at many points of contact.

A large audience of new users is refreshed every year as students arrive on campus. And the latest innovations in mobile ordering, digital wallets, payments, and mobile ID can deliver a relevant branded experience and an introduction to financial tools to that continuous stream of new users.

Many young people will have their first interactions with these brands in their college years. A platform that is compatible with their devices and wearables offers a unique opportunity for partners such as GrubHub, Starbucks, Panera, and others to promote fresh products and services to a discerning college audience. It's also a chance to develop loyalty and engagement early in a student's purchasing life.

MODERNIZING CAMPUSES

To illustrate how fintech meets NextGen and can transform higher education, Santa Clara University worked with Transact to implement its full product suite to include Mobile Credential, Mobile Ordering, and Integrated Payments.

The university, founded in 1851 and located in the heart of Silicon Valley, blends high-tech innovation with a social consciousness grounded in the Jesuit educational tradition.

Mobile Credential offers numerous benefits for both the university and its students, from decreasing its carbon footprint by eliminating plastic student ID cards and getting rid of the need to retool locks, to quicker, easier transactions that provide shorter wait times and fewer lines.

Mobile ordering offers just as many upsides and saves students time. The easy-to-use app gives them the flexibility to order, pay for, and pick up food, books, and other necessities at convenient times in their busy schedules.

With Integrated Payments, Santa Clara University students and family members now have the option to use a single, no-fee online platform for payments. The user-friendly account dashboard can provide online access to manage payments, receive bills, view statements and tax forms, and receive account notifications.

Students and parents are also able to see account information in real time, which eliminates confusion related to payment due dates, balances, and more. At the same time, the ability to accept a variety of tenders, from credit cards, ACH, and campus cards to 529 plans, International Funds Transfer (IFT), and ApplePay, has reduced the effort and time it takes to process thousands of paper checks.

Fintech plays a vital role in modernizing campuses and can also drive e-commerce to build brand loyalty with each new generation early on in their buying lives through mobile electronic payments done seamlessly on an integrated connected campus platform. DT

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