

Trends in the Electronic Exchange of Value

BEHIND WASHINGTON'S TOUGHER STANCE ON PAYMENTS

In some cases, its approach has been opaque, which is creating concerns that could stifle innovation.

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Squaring Apple's Tap to Pay Gaming Is No Gamble An E-Commerce Slowdown? Sunnier Days for Crypto

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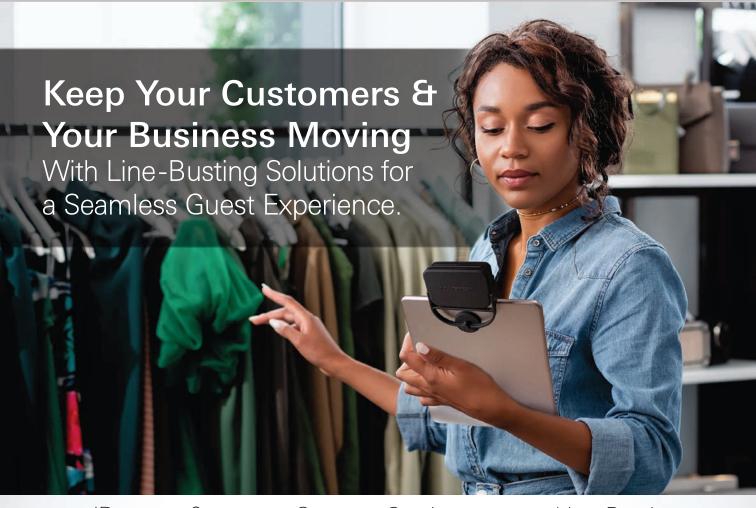
The key is to act before you're attacked. That requires identifying vulnerabilities and shoring up systems.

Cover Illustration: Elizabeth Novak, 123rf.com

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the gimlet eye THE CRYPTO ROUT

BREATHES THERE A SOUL out there who yet harbors ambitions for Bitcoin to become a store of value, unit of account, and medium of exchange? If so, please step forward and identify yourself—and ignore the snickering.

We aren't yet ready to abandon the hope entirely that digital currencies can function as real money—that is, perform the classic, tripartite role spelled out in the paragraph above.

As we've mentioned in this space a number of times over the years, cryptocurrency can't function in the role of "real" money—rather than in that of an investment vehicle—until it gets past the appalling volatility that has characterized it for years. In case any optimists out there had harbored hopes that crypto was solving this problem—much as adolescents mature and get past the foolishness of youth—cold, hard reality roared down the track this year like a freight train, smashing these hopes and once again consigning crypto to the margins of finance.

The biggest cryptocoin by market value, Bitcoin, peaked eight weary months ago, at more than \$67,500, and since then the ride has been all downhill. It was trading around \$20,500 at mid-June, according to Coinmarketcap. The story is much the same with Ethereum, the number-two coin. It fell over the same span of time from a high of \$4,600 to \$1,200.

We recite these facts, not to lament some sad new trend, but simply to underscore a longstanding problem that goes unsolved. Nor is volatility leaving the so-called stablecoins unmolested. Tether, the biggest of these by market value, and the third-largest of all digital currencies, shocked the financial world in May when it broke its peg to the dollar. A month later, it was still trading at 99.89 cents.

Amid the slaughter, the big crypto exchange Coinbase rocked the financial world last month when it said it would shed 18% of its workforce, or nearly 900 people. It was hard not to see the move as a direct consequence of sliding crypto values, though chief executive Brian Armstrong linked the move to recession fears. Among its many functions, Coinbase offers custom checkout and invoicing services to merchants.

This crypto winter, however, may offer an opportunity for stablecoins. Despite Tether's problems, Circle Internet Financial LLC's USD Coin has maintained its dollar peg and now ranks fifth on Coinmarketcap's hit parade, at a valuation of \$5.65 billon at mid-June.

We recite these facts not to dispense entirely with the notion of crypto serving as digital money for real-world purchases. We feel that jury is still out. Our purpose is merely to say, enthusiasts may need to be patient—very patient.

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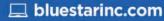




SOLUTIONS









trends & tactics

SQUARE, APPLE, AND 'SOFTPOS'

Square intrigued the payments industry a decade ago when it emerged to provide small sellers with a simple dongle they could attach to a mobile phone to accept card payments. Now Square says it's moving to the next step.

The company announced in June that later this year it will adopt Apple Inc.'s new Tap to Pay technology, which lets merchants take card payments directly on Apple's iPhone.

Square's move represents a major step forward for Apple's technology. Apple earlier had signed up other major payments players, including Stripe Inc. and Adyen NV, to deploy Tap to Pay, which is particularly aimed at small sellers.

San Francisco-based Square, officially part of Block Inc., has been steadily increasing its share of processing volume with larger merchants. Square reported in May that it processed \$39.5 billion in merchant sales in the first quarter, but merchants doing \$125,000 or less

in annual volume still accounted for 35% of that total (chart).

Adopting Apple's technology is "like a homecoming for Square," says Don Apgar, director of the merchant services and acquiring practice at Mercator Advisory Group. "Their original value proposition was the innovative card reader that plugged into the audio jack of a smart phone."

Information was not available concerning the proportion of Square merchants that have iPhones, which run on Apple's iOS operating system. A spokesperson for Block refused to comment beyond Square's news release. Apgar estimates the total in the U.S. market overall comes to about 40% of the small-merchant base, with the other 60% using Android devices.

But Apple's links to major processors like Square and Stripe could help shift the market, Apgar says. "This is part of Apple's play, it creates another reason to own an iOS device vs. Android," he notes.

SQUARE'S SMALL SELLERS

(Dollar volume in billions and proportion of total merchant volume)

Q12020	\$11.3	46%
Q12021	\$11.6	39%
Q12022	\$13.8	35%

Note: Refers to merchants doing less than \$125,000 in annual volume. Source: Block

Certainly, the move to adopt Tap to Pay could be a canny one for Block, whose Square merchant-acquiring operation was seen by some experts as vulnerable to Apple's technology, as well as to a similar system from Santa Clara, Calif.-based MagicCube Inc., which develops for Android devices. Collectively, this technology has come to be referred to as "SoftPOS."

"One of the biggest drivers of merchant interest in SoftPOS is the elimination of hardware and leasing costs, which have historically been one of the biggest barriers of entry for [small merchants] and micro merchants, and one of the fundamental problems Square initially set to solve with their original dongles that put them on the map," notes Alex Ferguson, a senior research analyst at The Strawhecker Group, an Omaha-based consulting firm.

Now, with the insertion of Apple's technology into the Square merchant base, SoftPOS technology may be poised for faster adoption, says Ferguson, who argues the technology has been slow to catch on up to now. "Apple's inclusion is certainly an altering variable in the SoftPOS adoption equation, especially as iOS is a much more utilized platform in the U.S.," he says. "This, paired

with Square and Stripe's atypical inclusion into Apple's previously insular development of the feature, could be enough to shift the trend of the past couple of years."

Tap to Pay is the result of two years of development at Cupertino, Calif.-based Apple, which in 2020 acquired a small Canadian company called Mobeewave that had built the technology. But Apple's rivals in this market aren't conceding any ground in the wake of Square's announcement.

"There's a move from hardware to software. It's going to be seismic," says Sam Shawki, MagicCube's founder and chief executive.

—John Stewart

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TRENDS & TACTICS DIGITAL TRANSACTIONS | JULY 2022 A

APPLE JUMPS WITH BOTH FEET INTO THE BNPL FRAY

Apple Inc.'s sneak peek at its iOS16 operating system last month included the news that the new version will include Apple's widely expected entry in the hot buy now, pay later market.

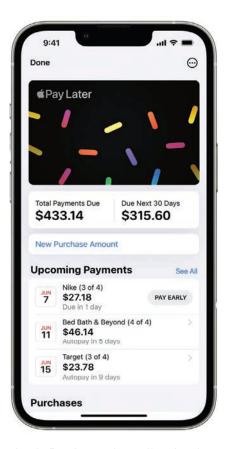
Available in the U.S. market, Apple Pay Later will be accepted at all places that take Apple Pay online or in-app when the new OS debuts in September, the computing giant said during a presentation of the widely anticipated operating system upgrade. Users can make installment payments via the built-in Apple Wallet.

Apple thus joins a crowded field of BNPL providers that includes formidable rivals such as Affirm Inc. and Afterpay, now part of Block Inc., as well as a slew of smaller players that have emerged in recent years.

"We may be at a point where the market is saturated, to the point [Apple] can make existing users happy but where it will be very challenging to draw in new ones," says Sheridan Trent, a senior research analyst at The Strawhecker Group, an Omaha, Neb.-based payments consultancy.

Apple's entry also comes at a time when some observers predict rampant inflation, rising interest rates, and squeezed incomes are already pinching consumer budgets, posing a risk of rising defaults.

As with most BNPL propositions, Apple Pay Later lets users divide a purchase into four equal payments over six weeks, with the first installment due at the time of the transaction. No interest applies as long as consumers meet the terms. There are also no fees, Apple says.



Apple Pay Later: Appealing for the existing base of Apple users, but will it draw in new users?

Observers say the success of Apple Pay Later in a saturated market will largely depend on Apple's ability to offer a slick process. "Seamlessness is going to be very critical," says Trent. "If it flows easily, [Apple] can be a real contender in this space."

But the difficulty for Apple, Trent adds, goes beyond pleasing current Apple enthusiasts. "The challenge will be drawing in new users," she says. "If [Apple Pay Later] is well-built, if it's done right, for the existing base it'll be just another tool they use, another loyalty generator."

Another challenge could lie in the intimate link between Apple Pay and Apple Pay Later. "A majority of [Apple Pay Later] transactions are going to come from Apple Pay," Trent predicts. That's an inherent advantage for Apple. But, she adds, "a lot of people don't necessarily set up Apple Pay."

All in all, Trent says, "we kind of knew this was coming" from Apple. But, for all the slickness of Apple's technology, she adds, the company's latest venture is "a little bit complicated."

-John Stewart

Available in the U.S. market, Apple Pay Later will be accepted at all places that take Apple Pay online or in-app when the new OS debuts in September.



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BANK AND CREDIT CARD APPS: MORE USAGE, LESS SATISFACTION

The financial stresses brought on by inflation and other after-effects of the pandemic are starting to damage consumer satisfaction with payments apps, according to the results of a series of J.D. Power surveys. Indeed, consumer satisfaction seems to be dropping even as app usage is increasing, the research firm says.

"Based on their experiences with other consumer apps and Web sites that anticipate their needs and offer a highly personalized customer experience, bank and credit card customers are expecting more from their digital solutions," says Jennifer White, a senior consultant for banking and payment intelligence at Troy, Mich.-based J.D. Power, in a statement. "The tough economic climate has amped up the urgency of those expectations."

The latest set of surveys, which queried more than 16,000 bank customers and credit card users from February through April, showed declining satisfaction scores over the past year for national banks' apps, Web sites, credit card apps, and credit card sites. Scores for the Web sites and apps of regional banks also dropped. National bank apps recorded the steepest drop, at 17 points.

Consumers' financial condition appears to play a major role in their diminishing confidence in card apps and sites. The proportion of consumers who see themselves as "financially healthy" fell from 53% to 43% over the course of less than a year, J.D. Power says.

Those who see themselves as "financially vulnerable," on the other

hand, registered at 32%, up from 25%. Those in this category register retail-banking satisfaction scores that are, on average,113 points lower than the scores given by "financially healthy" customers.

Partly as a result, consumers are registering lower scores for digital channels. This is particularly true among users of banks' Web sites and apps, J.D. Power says. Among customers who use a bank's branch, 73% say they "have a personal relationship with that bank," while far fewer—53%—of users of the bank's digital channels say so.

Among national banks' mobile apps, the top-scoring product belongs to Capital One, which registered at 868 points out of a possible 1,000 on J.D. Power's scale (chart), with Chase coming in second (855) and Wells Fargo third (846). These were the only banks to score above the industry average for this category (843).

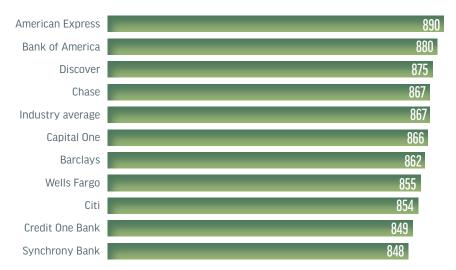
Among credit card mobile apps, the top scorer is Discover, with 876 points, edging out Capital One (875) and besting Bank of America (868). The industry average in this category is 862.

The scores reflect the results of four studies measuring consumer satisfaction with bank mobile apps, credit card mobile apps, online banking, and online credit card sites. The survey covers satisfaction with navigation, speed, visual appeal, and content.

—John Stewart

MOST SATISFYING CREDIT CARD APPS

(Top 10 apps on a 1,000-point scale)



Source: J.D. Power

CANADA'S INTERAC HITS 1 BILLION PAYMENTS

High usage rates and increasing adoption by small businesses are the primary factors credited by Interac, Canada's national debit and account-to-account payment network, for achieving a record 1 billion transactions in the 12-month period ended April 30, a 16% increase from the same period a year earlier.

A recent survey by Interac reveals 88% of eligible Canadians have used the network's eTransfer service to move \$338 billion (Canadian) over the past 12 months, and more than \$625 billion since the Covid-19 pandemic began. Among these users, 49% say they increased their use of eTransfer between April 2021 and April 2022.

Younger generations, including Gen Z adults and Millennials, are the heaviest users of the service, with 56% saying they use the service to split costs with family and friends at least once a month.

"As young Canadians are [again] taking part in shared experiences, 73% of millennials prefer to pay their share as soon as possible to avoid an awkward conversation later, and 69% believe that using Interac e-Transfer is the simplest way to split the cost of experiences with others," Anurag Kar, assistant vice president for Interac Corp., says by email.

On the commercial side, transactions involving small businesses grew by 38% during the 12-month period ended April 30. For the month of April, 19% of all e-Transfer transactions involved a business, com-

pared to 17.9% a year earlier, and accounted for 33% of dollar volume, the network says. In addition, a recent Interac survey reveals 47% of Interac e-Transfer users have used the service to pay a small business.

"Small-business use is a key part of the Interac e-Transfer growth story," says Kar. "Entrepreneurs turned to the service to accept payments from customers or remit payments to suppliers as part of the digital pivot that characterized the early stages of the pandemic."

In addition to offering eTransfer as a payment option, small businesses are also using the service to pay their employees. "Many business owners find they appreciate the ease and convenience [of Interac eTransfer for] payroll without checks, sales without cash, and bookkeeping without paper invoices," says Kar.

The growth in small business use of eTransfer for payroll and other outgoing payments comes less than a year after the network launched Interac eTransfer for Business in August 2021. Interac eTransfer for Business provides immediate electronic confirmation of payments received by suppliers, which in turn reduces manual reconciliation processes.

Businesses, which can send up to \$25,000 per transaction, also have the option of sending funds directly to account numbers they have on record, in addition to an email address or mobile number. Enabling small businesses to pay vendors in real time electronically is seen as a way to reduce their reliance on checks to pay suppliers. As of 2019, Canadian businesses wrote 389 million commercial checks representing an average value of \$9,000 each.

"With higher limits of up to \$25,000, Interac e-Transfer for Business transactions have the potential to displace upwards of 200 million of these cheques," Kar says.

"These real-time, data-rich payments can help streamline accounting processes and accelerate paperless office strategies, while offering bulk payment options, which facilitate a number of payments at once," Kar adds. "At Interac, we're actually using Interac e-Transfer bulk payments to process payroll for contract workers to simplify that process."

One segment of small business where the network is seeing strong adoption of Interac eTransfer for Business is among companies using the service to pay suppliers that have traditionally been paid only by check, Kar says.

"When we launched Interac e-Transfer for Business, our research showed 83% of business leaders were calling for new commercial payment products as part of their post-pandemic digital transformation," says Kar. "Early on, we realized that with a few enhancements, Interac e-Transfer would be just as attractive to businesses [as consumers]."

—Peter Lucas

HERE'S THE FIRST CBDC TO USE FACIAL RECOGNITION

Central bank digital currencies are still a relatively new payment method around the world, but now they're starting to address the issue of user authentication, and at least one is doing it with facialrecognition technology.

PopID Inc. last month announced holders of the Bahamian Sand Dollar, one of the first CBDCs to emerge for general use, will use PopID's PopPay platform to authenticate themselves.

The new service relies on the Sun-Cash digital wallet, which users can link to PopPay. This will allow users to spend Sand Dollars at merchants accepting SunCash, proving their identity with a facial scan. SunCash is said to have more than 55,000 active wallet holders, or about one-seventh of the population of the Bahamas. More than 1,000 merchants accept the wallet.

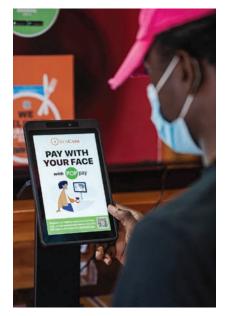
PopID's technology allows merchants to verify customers' identity with a facial scan. The technology links digital currencies as well as any

other payment method, including cards or direct bank transfers, to the user's unique facial characteristics.

Now, the Sand Dollar in the Bahamas is one of the first CBDCs to rely on facial recognition technology.

"We applaud SunCash for its deployment of this solution that allows Bahamians to transact in Sand Dollars using only their face," said John Rolle, governor of the central Bank of The Bahamas, in a statement. "Such security features are important to increasing personal comfort around the use of digital payments and advancing the Central Bank's goal of increasing financial inclusion among all segments of our society."

A total of 91 nations have at least investigated CBDCs, while nine have launched one, according to the Atlantic Council. Another 15 are testing one in a pilot. Central bank digital currencies are digital versions of national currencies. They are issued and backed by a nation's banking authority.



No Fuss, No Muss: PopPay's verification for Sand Dollar transactions

One of the putative benefits of the currency is said to be financial inclusion, particularly for countries where cash is predominant. "With governments around the world increasingly implementing CBDCs to replace physical cash, PopPay serves the critical policy objective of ensuring that all people can transact with the currency," said John Miller, chief executive of Los Angeles-based PopID, in a statement. Miller is also chairman of PopID's holding company, Cali Group.

Facial-recognition technology is gaining increasing interest among payments companies generally. Google Inc. has announced users of the new version of the Google Wallet could use facial recognition as a verification option to initiate a payment from a digitized card. Other options are a PIN or a fingerprint.

-John Stewart

MONTHLY MERCHANT METRIC Total Gross Processing Revenue % Metric Definitions: (Only use definitions 01'21 2.368% related to an individual month's release Total Gross Processing Revenue % - Sum 02'21 2.399% of total discount, total transaction fee 03'21 2.433% revenue and total other fee revenue divided by total volume. Q4'21 2.450% Note: This is sourced from The Strawhecker 01'22 2.471% Group's merchant datawarehouse of over 3M merchants in the U.S. market.The ability to understand this data is Payments Experts. Powerful Data important as SMB merchants and the payments providers that serve THE STRAWHECKER GROUP them are key drivers of the economy.

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

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Security notes trends & tactics CBDCS: HIT THE PAUSE KEY

CENTRAL BANKS AROUND the world are gripped by an uncharacteristic frenzy. Almost every central bank is at least setting up "commissions" to look into the alluring—yet jarring—prospect of redefining their national currencies. A few countries simply embraced Bitcoin, straight. The second-biggest economy in the world, China, is actively experimenting with a digital yuan. President Biden has issued a directive to explore cryptocurrency, and the European Union is dead serious about the prospect of crypto.

This effort at currency redefinition is a big deal. Liquidity, stability, and employment are all at stake. And unintended consequences lay in wait.

From society's point of view, money is a means to (i) ensure social justice, and (ii) give society's talented members the resources they need to translate their talent into societal benefits. As we witness an unfolding process of transforming national currencies into independent cyber entities we must ensure that these two societal missions are well served.

Central banks need to think, plan, and simulate circumstances where everything is paid for with CBDCs—central bank digital currencies—and then instruct the technology so as to satisfy the planned requirements.

CBDCs will be the first form of money that can benefit from the power of cryptography. Cryptography



offers security that no physical vault could rival, and privacy that no heavy curtain can match. And, most remarkably, perhaps, cryptography offers a payor the means to ensure that the money he pays will be used according to the terms agreed upon in the payment contract.

In other words, CBDCs will be tethered money (read more in my book: "Tethered Money"), money linked to well-defined terms. Money will be moved strictly according to the agreed upon computer instructions. Payment devices don't curry favor; they simply execute transactions.

To work at full power, CBDCs will need a dedicated financial language, universalization, and standardization. The tethered content will be written into the transactable coin, as well as into the accounting ledgers tracking that coin. All that must be part of the future CBDC, and it must be carefully designed. If we rush to define CBDCs, as, say, a payment scheme running on Ethereum, then we will botch this historic opportunity.

Alas, we must note that CBDCs will impact society in two ways: by its very nature and by its payment practice. While the nature of cyber

money is now slowly evolving, payment efficiency is a well-understood attribute. Central banks may distinguish the nature of this future money from the practice of moving it about. The latter can be experimented with through the notion of stablecoins. The idea is to issue digital claim checks for the national currency as is, and keep these claim checks with instant redemption ability.

Digital claim checks represent obligations against cash. Hence, they don't impact liquidity (CBDCs proper will). They can be introduced through commercial issuers that are well regulated by the central bank. Stablecoins like BitMint*LeVeL can be tethered, can safeguard privacy, and can render phones into wallets, vaults, and de-facto banks. They fit into an Internet of Things regimen, and easily cross national borders. Once payment in digital form is perfected, the road for full-fledged CBDCs will loom.

A radical transformation similar to what is about to happen has occurred only twice in the 5,000-year history of money. The first instance was the brilliant idea of minting precious metal coins at a fixed standard weight. The second was the replacement of metal with paper. Each of those transformations catapulted society to new heights. We expect nothing less this time around, so we'd better get it right!

TRENDS & TACTICS DIGITAL TRANSACTIONS | JULY 2022

payments 3.0

CFPB TO FINTECHS: NO SPECIAL FAVORS

A SERIES OF RECENT actions by the Consumer Financial Protection Bureau gives the fintech industry some clues for navigating the new regulatory environment.

The upshot is that the Bureau has been putting the pieces in place for a new approach to regulating any company that provides a financial product to consumers. Another takeaway: financial-services companies are now on their own when it comes to compliance and innovation, and they had better be ready to justify their existence.

Here's a look at the details and some of the possible implications of the Bureau's actions.

In late May, the Bureau announced that it replaced its Office of Innovation with an Office of Competition and Innovation. The change ends the Compliance Assistance Sandbox (which helps companies launch new products) and replaces it with a "broader initiative by the CFPB to analyze obstacles to open markets, better understand how big players are squeezing out smaller players, host incubation events, and, in general, make it easier for people to switch financial providers."

This comes on the heels of an interpretive rule released by the Bureau earlier in May that encourages states to enforce federal consumer-protection laws and says CFPB actions do not end state actions. Both follow the April announcement that



the Bureau will use its enforcement authority with nonbank financialservices companies.

All of this adds up to a situation where the Bureau is saying, in effect, that it, along with the states, will be watching companies, but will not offer innovators any help navigating the regulatory rapids. Instead, it plans to find ways to make it easier for customers to switch providers. Another way to put it: The Bureau's expectation is that fintechs and financial-services providers justify their existence by clearly explaining their benefits to their customers.

This is not necessarily a bad thing. While forward-thinking management teams recognize that customers are another stakeholder group, everyone in the industry will need to realize that the extended sphere of stakeholders includes investors, customers, employees, business partners, and, yes, regulators. Companies that can clearly explain the benefits of their products and how they work will do better than those that cannot.

The Bureau has not entirely abandoned the notion of benefits from financial services. In the announcement of its new office of competition, it says it wants to help small

companies gain access to data held by large banks and examine how big tech might have an upper hand in launching new products.

Of course, the danger in all of this is that the Bureau, instead of the market, could end up picking winners and losers. While this would be a blow to competition, it has bigger implications because small players and large companies do not exist independently of one another. Innovation happens when different players in the value chain combine to bring a new product to market.

While individual companies need to make this case, the payments industry as a whole also needs to play a part in educating regulators, legislators, and the general public about how the industry benefits consumers and how companies collaborate to make products work.

Thinking competitively is an important part of any company's success, but so is thinking cooperatively. Of course, antitrust rules must be followed, but the industry needs to be able speak with a unified voice so it can develop consensus opinions by sharing experiences with the effects of regulations.

By coming together, the industry can avoid having concerns dismissed as isolated incidents that affect only one company. And by sharing experiences and expertise, the industry can propose solutions that work for all stakeholders.



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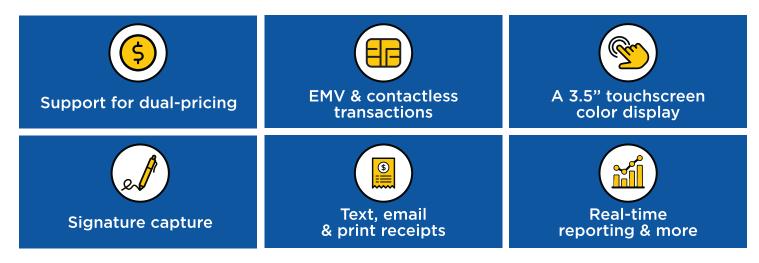






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GAMING IS NO GAMBLE

A report on the state of U.S. gaming indicates steady progress made possible by market discipline and some help from some familiar payment methods.

BY KAMRAN HEDJRI

Kamran Hediri is chief executive at PXP Financial.

THE U.S. GAMING industry continues to grow exponentially, making it a highly exciting place to be for those within it. Changes in regulation have allowed more states to create a safe and responsible framework for both gaming operators and players, resulting in phenomenal growth over the last few years.

According to the American Gaming Association, the United States saw an uptick in gaming in 2021, with some states, like New Jersey, hitting over \$1 billion in revenue per quarter throughout 2021.

When trying to understand the current state of gaming in the U.S., the best place to start is to look at the gaming industry in each state and see how it has grown per quarter since PXP's services went live.

INCREASING MATURITY

Looking at the overall data, each state matured over time with noticeable trends. The majority of states began by following a specific pattern, starting with 'Low Penetration' (little to no operations taking place yet) initially and maturing to a 'High Competition' status (lots of competitors, making for slower growth) state over time.

For example, West Virginia, Pennsylvania, and New Jersey each saw a consistent increase in maturity every quarter, moving up through the different stages every year.

From our analysis of the patterns, this increase in maturity has come from the new experience customers have had as regulations ease up and allow for more freedom in the gaming industry. This, combined with changes in payment solutions, new platforms, and improved User Interface (UI) and User Experience (UX), has made gaming more accessible and easier to play for the end user, with any new regulations and technology that might initially cause friction being discarded after a few weeks or months.

Based on the patterns we have seen, we have been able to group each state into different stages of maturity:



- Go Live / Low Penetration for states that have only recently opened up to gaming
- Market Capture for states where gaming operators have been heavily marketing and promoting their offerings.
- Growth Stage for states where linear, organic, growth has been achieved.
- Maturity Stage/High Competition— the most mature category, where high competition across the state has lead to slow-to-no-growth.

When looking at the data for conversion rates, we can see a direct cor-

relation to market maturity, which was expected. As the market penetration of each state grew per quarter, so did the percentage of successful conversions, with different rates per state.

From our analysis, there are several factors that cause this. For example, issuing banks in states where gaming was previously forbidden now need to modify their policies to accommodate these new transactions, and this is happening at different rates.

There may also be both technical and functional issues in the transaction-value chain that gaming platforms and payment providers need to overcome. These include initial teething issues, issuing banks whitelisting, error handling, messaging on cashier for declines, fallback options (or lack thereof), and specific preferences in each state.

CONVERSIONS AND CHARGEBACKS

As these states mature and operators become more knowledgeable, we begin to see conversion rates increase. New Jersey and West Virginia, two states that have been operating in the gaming industry for the longest time, have consistent and high conversion rates, whereas Mississippi and the District of Columbia, two states that are still in their "market capture"



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stage, have some of the lowest conversion rates in the country.

The changes we will need to see in these states to improve conversion rates are banks approving gaming transactions more consistently, gaming operators promoting more convenient payment options to their players, risk rules that have been optimized according to the markets, and an understanding from players around their preferred payment option. All of these will eventually help operators achieve better conversion rates.

When analyzing the average transaction values across the U.S., the majority of states average between \$80 and \$160 per transaction. There are several underlying factors we have identified for this variety, primarily socio-economic factors, cultural affinity to gaming, the minimum transaction-value set-up with gaming operators, and the amount of promotion these operators put forth. All of these contribute in some way to the amount of money players deposit.

On the whole, chargeback rates are low, and in new states this may



Hedjri: "With state maturity comes more consistent conversion rates and the number of payment methods available increases."

appear significantly so. That's because chargebacks can often be reported long after the original transaction, with some issuing banks allowing up to six months for chargebacks to be reported. Over time, the indicators for chargeback rates will become more accurate, which will ensure a better view of the rates in the gaming industry.

According to current data, chargeback rates are low when compared to gaming operators in Europe, even when including some of the longest-running states like New Jersey and West Virginia, which have rates of around 0.2%. There are multiple factors at play for this, such as stricter regulations in the industry, limitations on spend to promote responsible gaming, fraud checks, and better Know Your Customer (KYC) checks.

PREFERRED PAYMENT

The last piece of significant data to cover from the U.S. gaming industry are the preferences around payment methods. Across all 17 states, 14 total payment methods were recorded, with 10 states utilizing at least 13 of them and New Jersey being the only state to accept all 14 (with that additional method being American Express).

Unsurprisingly, Visa was the dominant payment method in every state. The next three highest payment methods (Mastercard, PayWithMyBank, and PayPal) fluctuated in use rate per state. Across all the states, the biggest takeaway is that the more mature the states are, the more payment methods have been made available.

Overall, from this data we can see that the gaming market penetration in the U.S. rose each quarter throughout 2021 and is expected to continue rising throughout 2022 as each state matures. With state maturity comes more consistent conversion rates and the number of payment methods available increases.

For states in the 'low-penetration' group, market penetration increases rapidly, but as higher maturity is reached, growth slows down and stabilizes. Eventually, each state reaches a higher level of maturity—though this could take years—and we expect we will continue to see this trend in every state going forward, as regulations change and allow for more freedom in this exciting industry. ①





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e-commerce

A LOOK BEYOND THE NUMBERS

After two years of stupendous growth, e-commerce is slowing. But is that the whole story?

BY KEVIN WOODWARD

THE NUMBERS DON'T lie, but they don't tell the whole story, either, about what's changing for U.S. e-commerce sales.

Consider this. E-commerce sales as a fraction of total retail sales came to 10.2% in the first quarter of 2019, according to U.S. Census Bureau data. A year later, that figure increased to 11.8%—a reasonable rate of growth, since the effects of the Covid pandemic hadn't yet surfaced. By the first quarter of 2021, 14.9% of retail sales were e-commerce purchases.

Now, in the first quarter of 2022, though still significant, the figure decreased to 14.3%.

The numbers alone make it look like e-commerce's hot streak is cooling off, but none of this is cause for concern. It's solely a reflection of the shifting variables of the economy as pandemic restrictions lift, more consumers opt for in-store shopping, and the number of consumers favoring online shopping becomes saturated.

To understand this trend more fully, it helps to look back to e-commerce growth forecasts in 2019. In a mid-year report looking at e-commerce sales from 2017 through 2023, Insider Intelligence, a New York City-based research firm, predicted U.S. e-commerce sales would grow to \$858.9 billion by 2022. With the pandemic impact, that figure was topped in 2021 as e-commerce sales totaled \$870 billion. Now, U.S. consumers are expected to spend more than \$1 trillion online in 2022, predicts Adobe Inc.

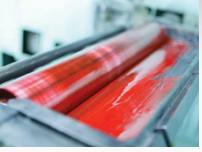
The unexpected growth in e-commerce the past couple of years created an outsize year-over-year comparison. The growth rates were so large, says Zak Stambor, senior analyst, retail and e-commerce at Insider Intelligence, that the ensuing quarters faced a difficult year-over-year comparison.

'BLIPS, NOT TRENDS'

Understanding this nuance, even when e-commerce sales are growing at a slower pace, is critical, he says. "Those strong year-over-year comparisons are why the numbers don't look great, but they are ahead of where we thought we would be at this time," Stambor says.











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Payments consultant Patricia Hewitt suggests the same effect. "Thinking about what we might traditionally think of as e-commerce, meaning online buying, I see its growth curve still going up, but more slowly than in the past couple of years," says Hewitt, principal at PG Research & Advisory Services LLC. "The cost of gas may well drive more consumers to e-buy in order to avoid a trip to the store, however, as we found out post-pandemic, these are more blips than trends."

These blips may have already appeared. In a May research note, Stambor noted that retail sales yielded a mixed bag of results in the first quarter. "Many retailers last year generated strong sales and healthy profit margins despite rising supplychain costs," his note says. "That's no longer the case. The Q1 [2022] earnings season has been a mixed bag as retailers face no shortage of challenges, including inflationary pressures, supply-chain challenges, global unrest, a tight labor market, and a shift in consumer behavior patterns. But several retailers have successfully navigated that difficult terrain."

'BIFURCATED OUTLOOK'

Another factor that may have an impact on e-commerce sales is the growth rate in brick-and-mortar sales. "The other part that is important is we've seen a full year in which [the] brick-and-mortar growth rate has outpaced e-commerce," Stambor says.

Witness Mastercard Inc.'s May SpendingPulse report, which found in-store sales were up 10% and e-commerce sales down 1.8% in April compared to April 2020. It was a similar story in March. In-store sales were up 11.2% year-over-year and e-commerce was down 3.3%.

This in-store momentum largely reflects the fact that consumers are returning to normal lives, Stambor says. "In the case of luxury, that means returning to high-touch experiences you don't get online," he says. So consumers are returning to the grocery store rather than having the goods delivered or picked up curbside. Another big difference in 2022 is that more individuals are vaccinated and more have returned to in-office work.

Another big factor this year is inflation, Stambor says. As housing, fuel, and grocery costs increase, consumers who were able to retain their jobs, or switch jobs, and who enjoy higher wages may be able to absorb these costs better than others.

It's a complicated outlook, he says. "We kind of have a bifurcated outlook going forward," he says, adding that individuals who are fairly affluent have been faring well. "Their savings rates, while lower than a year ago or two, are likely up from it was prepandemic," Stambor says. "They're still spending money even if they are pulling back a bit."

Lower-income consumers, however, are being hit harder by inflation, and that may cause them trade down when shopping, he says. "They're making all sorts of decisions based largely on where they're at in terms of savings and their ability to spend on discretionary purposes."

Hewitt suggests strict definitions of online shopping may need to evolve to reflect how consumers, especially younger ones, incorporated mobile devices into their consumer behavior.

"Are we talking about strictly online sales or all-in virtual sales, which





Source: U.S. Census Bureau

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could be payment in app?" she asks. "We're beginning to see the emergence of a generation that prefers paying by phone regardless of the channel." A February report from Statista forecasts mobile retail e-commerce sales will total \$431.4 billion this year, but by 2025 could grow to \$710.4 billion.

'GENERATIONAL SHIFT'

The convergence of mobile and traditional e-commerce with pointof-sale systems may generate a hybrid payments market, Hewitt says. "Now that many merchants have fully enabled NFC, and larger merchants are aggressively pushing their own in-app payments via Quick Response codes, we'll see more virtual payments at the POS," she says.

"But this is a generational shift and will take time," she adds, "perhaps 10 years or more to fully transform the market. In the meantime, pureplay e-commerce will decline in favor of these virtual payments."

However the payments aspect of

e-commerce may evolve, Stambor sees no reason to believe that U.S. e-commerce sales are maxed out. A February forecast for 2022 from Insider Intelligence predicts a 14.1% growth rate for retail e-commerce, he says.

And, in 2023, the growth rate is predicted to be 13.8%. That said, Stambor adds, the growth rate exceeds the inflation rate (8.6% in mid-June). That, he says, is as it should be. "We're expecting larger growth than that," he says.

AMAZON, SHOPIFY, AND THE 'SAWBLADE' SALES PATTERN

The wave that lifted sales through e-commerce marketplaces during the initial stages of the Covid-19 pandemic is losing energy, according to data from Extensiv, a provider of omnichannel fulfillment solutions.

Growth in average orders per merchant through Shopify Inc. decreased 12% through May compared to 2021, while other marketplaces-including eBay, Etsy, GoogleShopping, Wayfair, Walmart, Yahoo, and Zoholnventory have decreased 27% year-to-date, according to Extensiv's Market Insights index, which tracks orders through e-commerce platforms. Amazon is the lone marketplace to see its order volume rise. The e-commerce giant's volume is up 10% year-to-date.

A provider of omnichannel fulfillment solutions, Extensiv, formerly 3PL Central, launched the index in May in conjunction with a rebranding campaign for the company name. The index is compiled using data from 65 million e-commerce orders into which Extensiv has visibility.

While Extensiv has not surveyed merchants about the ebb and flow of their e-commerce sales, the company says it suspects the drop in average orders per merchant is due to a combination of more in-person shopping and more consumers responding to recent market volatility and rising inflation.

"There are also supply-chain disruptions. Some merchants don't have inventory to ship right now," Extensiv chief marketing officer Rachel Trindade says by email. "This is hitting all the big marketplaces. We know UPS is down 8% in Q1 shipments."

Overall, the trend line for e-commerce volume through marketplaces looks like a saw blade, with weekly volumes rising and falling on a yearover-year basis. During a three-week period beginning the last week of April 2022 (weeks 18-20 of 2022), per-merchant order volume for Shopify Inc.,

for example, was down 6% during the first week, up 17% the second week, and down 10% the third week.

By comparison with 2020, however, Shopify's volume was trending downward in 2021. During week 18 of 2021, the marketplace's per-merchant volume was down 43%, and down 49% and 30% for weeks 19 and 20 of 2021. compared to the same period in 2020.

In comparison to other marketplaces, Amazon's per-merchant volume remained flat during week 18 and rose 12% and 22% during weeks 19 and 20 of 2022. The change is a welcome one. Amazon's volume in 2021 was down 70%, 73% and 66%, respectively, compared to those same weeks in 2020.

One explanation why Amazon is faring better than other marketplaces is that the strength of its brand helps shield it from volatility, according to Trindade. "Historically we've seen Amazon expand market share in e-commerce each year," she says. "Amazon's increased market share is a normal dynamic. This increase may be in part because merchants are still expanding through Amazon."

Given the up-and-down shifts in sales volumes merchants selling through marketplaces are seeing, Trindade says brands and marketplaces need to stay nimble and pay attention to their own businesses as well as monitor macro trends. "Q1 earnings for Shopify, Amazon, and UPS showed the volatility, and even Amazon let go of some warehouse space last week," she says.

Nevertheless, Trindade remains optimistic that the sawtooth trend line will eventually reverse itself. "E-commerce has experienced double-digit growth every year for the past few years. We expect a rebound, we just don't know when that will be," she says.

-Peter Lucas



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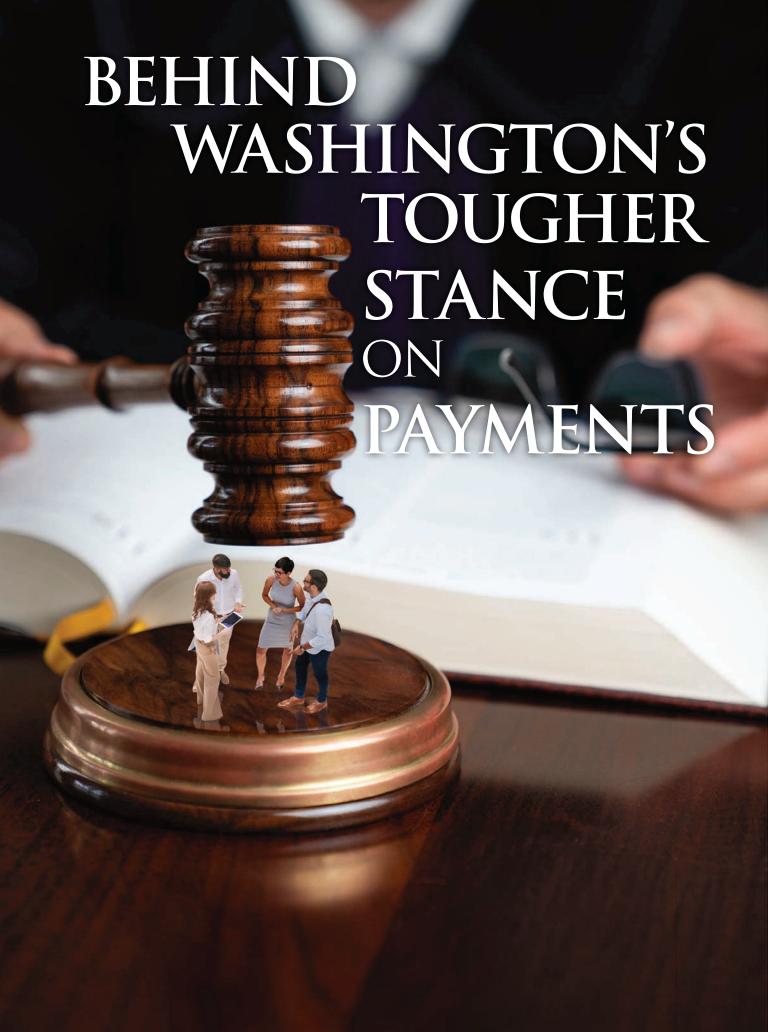


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After years of a relatively light touch, federal regulators are turning the Klieg lights on the payment industry. In some cases, their approach has been opaque, which is creating concerns that could stifle innovation.

By Peter Lucas

here's an old adage inside the Beltway that says, "People Are Policy." Since entering the Oval Office in 2021, President Joe Biden has been quite vocal about making consumer protections a priority for his administration.

Since then, various federal regulatory agencies such as the Federal Trade Commission, the Consumer Financial Protection Bureau, and the Federal Reserve System, along with the U.S. House Committee on Financial Services Task Force on Financial Technology, have taken the president's cue and started looking more closely at the payments industry.

A key driver behind this increased scrutiny is that the payments industry is innovating faster than regulators can keep up. Typically, government watchdogs need months, sometimes years, to gather information on new payment products and how they are used by consumers before they can evaluate the risks around them, and the potential harm those risks can cause consumers.

But make no mistake: Washington is racing to catch up. In the 18 months since Biden took office, signs of the administration's regulatory activism are all over the payments landscape.

The Brightest Spotlight

At the FTC, which is entrusted with overseeing antitrust enforcement, Chairperson Lina Khan has taken aim at big tech companies, many of which have payments divisions. In 2021, the agency released a report examining acquisitions by Google, a unit of Alphabet Inc., Apple Inc., Facebook Inc., Amazon.com Inc., and Microsoft Corp. that did not require reporting to antitrust authorities at the FTC and the Department of Justice under the Hart-Scott-Rodino Act, and whether those acquisitions stymied competition.

The Federal Reserve has opened a discussion with the payments industry about launching a central bank digital currency ("Should CBDCs Be the Next Big Thing?" February) in the United States. The Fed is seeking to learn about the pros and cons of such a move and whether consumers would have confidence in a digital form of legal tender.

On Capitol Hill, the House of Representatives' Task Force on Financial Technology has turned its attention to mobile banking, buy now, pay later, and other payments concerns.

Jackson: The payments industry "wants stability when it comes to regulation."

But the regulatory body that has trained the brightest spotlight on payments is the CFPB. Launched in 2011 to address failures in consumer protection, the agency has grown far more active with the advent of a Democratic administration, issuing a flurry of memos and requests for information to companies across the payments landscape.

Most recently, the CFPB in May created the Office of Competition and Innovation as part of what it describes as "a new approach to help spur innovation in financial services by promoting competition and identifying stumbling blocks for new market entrants."

The CFPB in October ordered the big tech firms Google, Apple Inc., Meta Platforms Inc. (Facebook), Amazon.com, Block Inc. (formerly Square Inc.), and PayPal Holdings Inc. to turn over information about their payment products, plans, and practices. The order stems from regulators' concerns about whether consumer data is being gathered in compliance with data-privacy and -protection laws and how that data is being used.

Then, in December, the CFPB opened an inquiry into buy now, pay later loans (page 36), requesting information from five leading BNPL lenders: Affirm Inc., Afterpay Ltd., Klarna AB, PayPal Holdings Inc., and Zip Co.

The requested data relates to the potential for overspending by consumers who rely too heavily on BNPL loans, the potential for these loans to fall outside consumer-protection rules that apply to other lending products, and BNPL lenders' use of consumer-payment histories, data collection, and data monetization, and the risk BNPL may

pose to consumers. The five BNPL lenders had until March 1 to respond.

The inquiry into BNPL was spurred by a letter from Democratic members of the Senate's Committee on Banking, Housing, and Urban Affairs to CFPB Director Robit Chopra, urging a review the BNPL industry.

Treading Lightly

So what does this flurry of regulatory activism mean for the payments industry? Many industry observers attribute the recent interest in the payments business on the part of regulators to a felt obligation to carry out the Biden administration's objectives for consumer protection. Another motivator is a felt need to catch up with payment-industry innovations to ensure proper industry regulation.

"The payments industry is innovating faster than the regulators can keep up," says Nicole Meisner, attorney, partner, and co-chairman of the Electronic Payments Group at Jaffe, Raitt, Heuer & Weiss, P.C., a Southfield, Mich.-based law firm.

"In my view," she continues, "the reason for increased regulatory interest is twofold: First, new objectives of the current administration. Second, the natural response to new and emerging products now that a track record exists revealing what the products do, how they are utilized by consumers, and the potential risks and consumer harm they present."

While the payments industry is no stranger to regulation, concerns are emerging in some circles that regulators' increased activism will create uncertainty in the market. Enough of



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this could cause payments companies to tread more lightly to avoid incurring expensive litigation or enforcement actions. It could also stymie innovation.

As it stands now, the CFPB's requests for information from Big Tech and BNPL lenders—including a demand for data from Block Inc. regarding how it handles complaints and disputes related to its Cash App wallet—have left many in the payment industry confused about what the agency's true intentions are. The CFPB has yet to tip its hand about how it intends to respond to the information it gathers.

"To date, the CFPB has focused rulemaking by issuing memos, orders, and requests for information, but has not issued many formal rulemakings. This approach creates some degree of uncertainty because it is difficult to discern the broader effects of what the requests actually mean," says Scott Talbott, senior vice president, government relations for the Electronic Transactions Association.

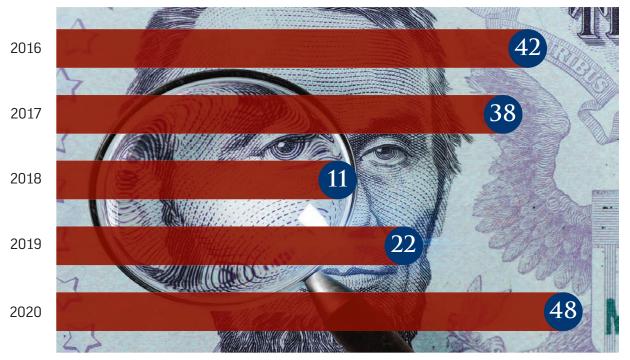
In some respects, the CFPB's requests for information are a way for the agency to "regulate from the podium" without issuing a new rule or mandate, industry observers say. That tactic can be effective, because it is likely to prompt some payments companies to tighten consumer protection policies to avoid being targeted by the CFPB.

"This approach can affect industry behavior quickly without implementing new regulation, which take time to develop and can be challenged legally," Talbott says. "You can't challenge a memo in court."

From the industry's standpoint, another downside to regulators hinting at or speaking out about tightening regulation is that this can have a cooling effect on startups and other new entrants, according to Jeff Tassey, chairman of the Electronic Payments Coalition.

Growing More Active

(CFPB enforcement actions)



Note: 2021 data not available. Source: The agency

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Despite the new activism by regulators—and a resulting uncertainty about the new regulatory climate—Tassey is confident the payments industry has the resilience to continue developing innovative new products.

"We have seen a steady drumbeat of new payment services continue to emerge despite the activism on the regulatory front," Tassey says. "Banks are already highly regulated and wellsuited to provide many of these new products, and many are in fact doing so or exploring the best ways to do so."

"The main takeaway," he adds, "is that the payments industry continues to be highly competitive with new services that cater to consumer demands for payment options."

Activist Cloth

In accordance with the adage that holds that people are policy, it is important to understand the people entrusted to set and enforce the rules to understand their intentions, industry observers say.

A former law professor and FTC staffer, Lina Khan has long argued that antitrust law needs to be reformed in the wake of big tech's rise, and has even advocated for the breakup of some big tech companies, such as Facebook and Google. She was appointed by President Biden to shake up the FTC.

Khan's stewardship of the FTC also comes at a time when politicians on both sides of the aisle, small businesses, and others are pushing regulators to clamp down on big tech. Khan has indicated the FTC's interest in big tech is centered more on consumer data protection and privacy than on anything else.

But one area where its examination touches on payments lies in whether Apple and Google are steering consumers away from competing thirdparty apps in their app stores. Among the products in these stores are Apple's and Google's respective mobile-wallet apps.

"At this stage, it's all preliminary, but will Apple and Google be told they are keeping consumers away from third-party apps [in favor of their own] in their app stores?" asks Ben Jackson, chief operating officer at the Innovative Payments Association. "The bipartisan interest in big tech makes it an issue to watch." (Jackson writes the monthly Payments 3.0 column for Digital Transactions.)

When it comes to payments, the feeling among industry observers is that the FTC will focus on larger, more complex issues, such as antitrust. "The FTC tends to go after larger cases, so we might see them take action on big-tech antitrust issues, but I expect that they will continue to defer the lead to the CFPB on financial services," says Vanni Parmeggiani, director, open banking and real-time payments, at GoCardless, a specialist in accountto-account transfers.

"Also," he adds, "based on leading indicators, the CFPB has been more vocal on payments issues, and Biden has been giving them mandates directly."

Like Khan, CFPB director Chopra is cut from activist cloth. He is described by some paymentindustry experts as a regulator who believes deeply in his mission and takes it personally, and who in some respects is a political animal.

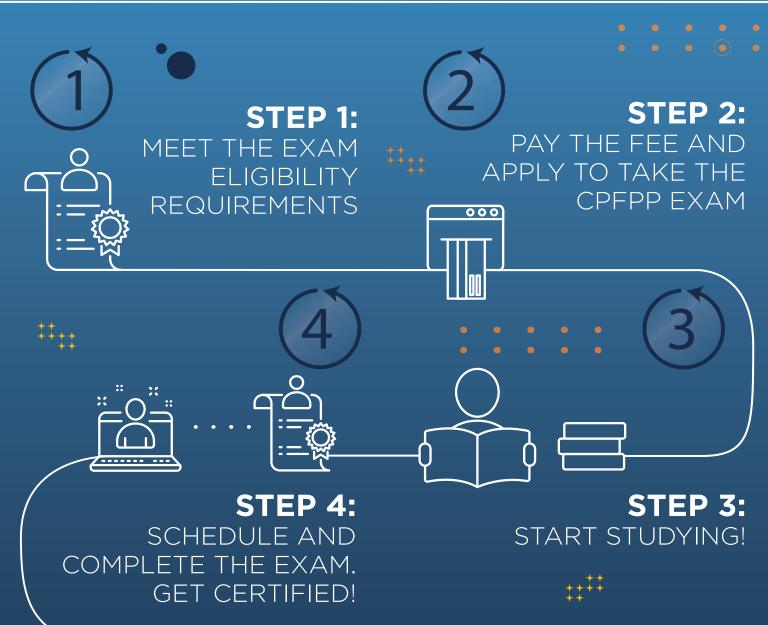
"Chopra is a longstanding regulatory activist that takes an aggressive view of regulation," says Eric Grover, principal at Intrepid Ventures, a Minden, Nev.-based consultancy. "The sense is

Grover: "The CFPB will become more aggressive and look to expand its powers."



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that, under his leadership, the CFPB will become more aggressive and look to expand its powers."

When it comes to Congress, payments experts agree that it's unlikely Congress will intercede, given the partisan divide and that mid-term elections are less than five months away. "Congress does not seem to have a lot of appetite for this at the moment, and I do not think it is at the top of the legislative agenda," Parmeggiani says.

*Whipsaw Action

Looking ahead, the best bets for where regulators will focus their attention within payments are BNPL, data privacy and usage, and fraud protection.

"With the explosion in popularity of buy now, pay later programs, this will be top-of-mind for many regulators. The CFBP has already submitted inquiries to five of the big BNPL providers indicating several areas of concern including consumer accumulation of debt, regulatory avoidance, and data harvesting," says attorney Meisner.

"Data privacy and usage is also a topic [where] we will likely see an uptick in regulatory efforts," she continues. "Data privacy in the context of a data breach or unauthorized access is one key



aspect, but data usage more generally, such as behavioral targeting and data monetization, are also top concerns."

It is also possible there will be an uptick in regulatory efforts at the state, Meisner adds.

One point payment experts continually bring up is that while overly broad regulation can stymie innovation, targeted regulation can benefit the payment industry by leveling the playing field to ensure competition among players of all sizes. The CFPB's Office of Competition and Innovation, for example, could lead a push to make open banking more ubiquitous in the United States, says the IPA's Jackson.

Having regulations that ensure fair competition could be a huge benefit to merchants, argue some observers. "Merchants see payments dominated by Visa and Mastercard and we feel that kind of domination blocks innovation," says Doug Kantor, general counsel foe the National Association of Convenience Stores.

"The Justice Department's lawsuit to block Visa's acquisition of Plaid opened a lot of regulators' eyes about [Visa's] reach into payments and raised questions about whether past acquisitions [by the card networks] should have been allowed," Kantor says.

If nothing else, the payments industry prefers to have a regulatory environment where regulators understand that payments are complex and where dialog between regulators and the industry is open and regular.

"The industry wants stability when it comes to regulation," says Jackson. "When regulators move between a relatively hands-off approach to a tougher stance it creates whipsaw action that can be quite problematic, because compliance by itself is hard enough. You can't solve every issue in payments with one rule."

This nuance is why it's necessary for the payments industry to help regulators understand the problem they are attempting to fix and the steps payment companies are taking to protect consumers, Jackson argues. "Because those things are not always self-evident to regulators," he says. \(\mathbf{Q}\)

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strategies DIMADV DOAD

The buy now, pay later trend is one of the hottest in payments. But rising rates, higher inflation, and stiffer rivalry could cool things off.

BY JOHN STEWART

FEW TRENDS IN payments have been as explosive as instant credit online or at the point of sale, with no interest if the installments are made on time. Indeed, buy now, pay later—an old idea in shiny new trappings—lifted off the launch pad when Covid hit and soon soared beyond the stratosphere. Good news for companies like Affirm Inc., Block Inc., Klarna AB, and PayPal Holdings Inc., right?

Not so fast.

The party isn't over yet, but experts are pointing to recent trends that could put a damper on the proceedings sooner than most are expecting. Intense competition, rising inflation, and a notably higher cost of funds are likely to challenge all but the most prepared providers, they say.

The latest bad omen emerged last month when the Federal Reserve hiked its benchmark federal funds rate by three-quarters of a percentage point—the biggest increase in 28 years. "BNPL became popular during Covid when money was free. It's not free any more," says Marwan Forzley, chief executive of the payments company Veem Inc., which is trialing a BNPL product for business-to-business transactions.

Some sources put the number of BNPL providers operating globally at 108, and counting. And now players must reckon with the likes of Apple Inc., which launched its Apple Pay Later service last month (box, page 40). "Apple's BNPL is going to upend the market," predicts Ron Shevlin, chief research officer at Cornerstone Advisors.

Watch for consolidation, some say, as weaker players get swallowed up. "It'll happen very soon," predicts Brian Shniderman, U.S. chief executive for OPY USA Inc., a unit of Australia-based BNPL player OpenPay Pty. Ltd., which is leading a charge into big-ticket markets like homeimprovement and health care.

A LIMITING FACTOR

Already, companies have had to make painful adjustments. Sweden-based Klarna, long a stalwart in this business with a major U.S. presence, shocked





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800.352.6003 www.Round2P0S.com the payments industry this spring when it said it lost \$748 million last year. In May it announced it would lay off 10% of its 6.500 employees as part of a cost-chopping campaign.

Shares of at least some of the publicly held providers have been diving as investors reckon with adverse trends. Affirm's stock plunged from \$168 to \$16 in the seven months from November to June, despite a generally strong record of attracting merchants and coaxing more transactions out of each user (chart, page 40).

Investors are factoring in headwinds other than more-expensive money, an Affirm spokesman insists. "Most of our funding is off-balance sheet and we generally have multiyear bilateral agreements with our wholesale loan buyers," he says.

U.S. PURCHASE VOLUME USING BNPL (In billions) \$100*

What are some of those adverse trends? For one thing, Open Pay's Shniderman argues too many players have targeted small-ticket transactions that can't support the cost of the infrastructure needed to process them.

These may be the tickets that work best with the six-week, pay-in-four-installments, zero-interest plan BNPL is best known for, but there's a limiting factor. "You have to have massive scale if you're financing T-shirts and tennis shoes," Shniderman says.

With inflation driving average tickets higher in these stores, this proposition becomes even harder to support, he argues, as defaults climb. "People are going to see a doubling or more in their loss rates," he predicts.

Inflation in May stood at 8.6%, according to the Bureau of Labor Statistics, its highest rate since 1981, before at least half of today's consumers—and payments executives—were born. "People haven't seen this before," says Veem's Forzley.

'A LONGER-TERM VIEW'

Instead, Shniderman argues, the way forward is to concentrate on such things as big-ticket surgeries or a new roof for the house—at fixed rates over longer terms. "Consumers are more than ever going to demand fixed-rate products. If I can lock in a rate, and know it's not going to get worse, I can go ahead and get that surgery," he says.

Smaller tickets also lend themselves to fraud attacks, since the it's hard for stores to justify the cost of full-scale fraud reviews, argues Shmuli Goldberg, chief marketing officer for Identiq Protocol Ltd. Fraud attempts on BNPL transactions last

THE POPULARITY CONTEST

(The top 5 BNPL services, by percentage of respondents who say they have used them)

PayPal	55%
Afterpay	36%
Klarna	30%
Affirm	27%
Zip	8%

Note: Respondents could choose multiple services

Source: LendingTree survey of 665 users in March 2022

year grew 66% in the U.S. market, he says.

But by its nature the BNPL process must be fast and easy for the consumer, ruling out conventional fraud checks. "BNPL works because it's a very lightweight process—a couple of clicks and you can get that short-term loan," Goldberg says.

But merchants eschew tougher fraud checks because they can discourage transactions. To solve the problem, Identiq has built an information-sharing utility that verifies a user's identity without exposing data and without Identiq serving as a middleman. "We rely on the consensus of the crowd, which can give an answer in under two seconds," Goldberg says.

Now, on top of fraud, inflation, rising rates, and the sorrows of low tickets, BNPL players must contend with Apple, a master marketer selling high-end products to a devoted customer base. No one will be so rash as to predict who will survive, and who will end up on the sidelines or

Source: Cornerstone Advisors

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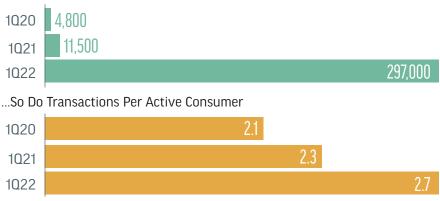
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*Defined as having conducted at least one transaction in the 12 months through the end of the period Source: The company part of a larger entity. But many are those who foresee upheaval.

The answer to all of this is patience, say observers like Cornerstone's Shevlin. The firms that will succeed, he predicts, are those that specialize in a vertical market, such as home improvement, and that use BNPL as a steppingstone to a high- profit credit card or line of credit. "Losses are increasing, and stocks are taking a beating, but you have to take a longer-term view," he advises.

APPLE SELF-FUNDS BECAUSE...IT'S APPLE

When Apple Inc. last month announced Apple Pay Later, its buy now, pay later program, the computing giant added an unexpected twist: The new product will not rely for financing on Goldman Sachs, Apple's long-time partner for Apple Pay.

Instead, Apple is setting up its own unit, to be called Apple Financing LLC. The credit can be used anywhere, but as Apple's product line consists of high-end computers, mobile devices, and other big-ticket gear, some observers are wondering about the risk the company may be taking on.

"There's no question Apple has a lot of cash on hand," observes Brian Riley, director of the credit advisory service at Marlborough, Mass.-based consultancy Mercator Advisory Group. "But a \$1,200 phone will rack up a loan of \$600 a month on pay in four. It will be a test of customers' ability to repay."

Pay in four is the typical BNPL model in which users get immediate access to their merchandise and then repay the loan in four installments over a six-week period, usually at no interest.

Estimates vary regarding the typical, or average, loan on BNPL. Data from the computing company Salesforce pegs it at \$149. But some observers argue it's higher. "It's probably around \$200," says Sheridan Trent, a senior research analyst at The Strawhecker Group, an Omaha, Neb.-based payments consultancy.

She figures Apple will user various tactics to control risk with Apple Pay Later purchases, including transaction limits. "I'm assuming they're going to put a cap on the amount you can borrow," she says. Apple did not respond to a request for comment. Like other

BNPL services, Apple Pay Later will split the four payments over six weeks.

The company's ultimate strategy in introducing a BNPL option and financing it through its own subsidiary remains unclear, but there are hints. The option offers greater control over the product in ways that could offset the risk of defaults for Apple, which has said it wants closer control of consumer data flowing from BNPL transactions.

But there are tradeoffs. "On the one hand, the decision to reduce the role of Goldman Sachs in order to preserve the privacy of consumers is laudable. But the choice could also be risky given significant losses reported by Klarna, Zip, and Affirm this year from consumers' missed payments," Trent notes, referring to rival BNPL providers.

She agrees it's likely Apple will want to extend credit more generally than for Apple products once it gets the new subsidiary established. That move would likely be facilitated by Apple's existing link to Goldman and its connection to the Mastercard network.

But the move could also bring Apple into direct competition with established BNPL providers, leading to more loans at higher levels and bringing on higher risk.

"There are still a number of unknowns here," says Trent. "Whether Apple [for example] will start offering longer-term financing options as some buy now, pay later firms currently do."

But to begin with, it remains uncertain how Apple's current customer base will receive the new service, she says, "as some buy now pay later companies are viewed with suspicion by consumers."



etwork

IT'S TOO SOON TO COUNT OUT CRYPTO

Bitcoin and other cryptocurrencies have had a rough time in 2022. but a trend toward mainstream adoption is gaining momentum.

BY TOM PAGELER

Tom Pageler is chief executive of Prime Trust LLC. Las Vegas.

EQUITIES ACROSS THE board, including Bitcoin, are massively down from their 2021 highs. Tech stocks, bonds, commodities—nothing seems safe from the current sentiment. But what does that mean for the longterm and short-term value and use of Bitcoin and other cryptocurrencies?

Like other equities in the space, there is little recourse until stability returns and investors, retail and otherwise, feel safe to reenter the markets. From my perspective, here's what to look out for in the second half of 2022.

1. Critical Mass Will Help Overcome a Reluctant Market

The volatility of cryptocurrency is played out daily in the news and on

social media. Wild fluctuations, new coins and decentralized finance (DeFi) protocols, and the evolution of things like non-fungible tokens (NFTs), all amass clicks and views from every corner of the Internet. Yet, all of these stories lack explanation and put off many crypto-curious investors. With the fear of losing everything, it's easy to understand why we see more hesitancy from investors.

Reaching mass adoption requires more than salacious news stories and promotion on social media. Increased participation depends on education and accessibility, which can only be achieved through faster, user-friendly applications, increased regulation, and a diversified ecosystem.

The market must also find a diverse set of investors, not just those looking to get a quick return or dabble in emerging technologies. Reaching critical mass serves to increase liquidity and build out a robust market infrastructure.

2. Smarter Technology Will Improve the User Experience

In 2021, Bitcoin's cumulative annual transfer volume surged 463% to reach \$13.1 trillion. Ostensibly, that number is impressive. However, the BTC network processes roughly 10 transactions per second while Visa and Mastercard process several thousand transactions per second. That's a problem.

But hopefully not for long.



Developers are working on Layer 2 protocols that will make smaller BTC payments faster and cheaper. And there are other blockchains and technologies on the horizon that could lower costs and improve speed. For example, the oft-delayed Ethereum 2.0 promises to drastically increase efficiency and throughput gains for the network.

Because of efforts like this, we expect to see new market segments emerge. According to a Cointelegraph report, we've already seen a 200% increase in alternative trading systems, a 120% increase in registered wealth-tech platforms, a 54% increase in infrastructure firms like block-



The BTC network processes roughly 10 transactions per second while Visa and Mastercard process several thousand transactions per second.

That's a problem.

chain-development platforms, and a 47% increase in crypto on-ramps and neobanks.

Throughout 2022, we also expect to see an increase in platforms and apps that focus on the user experience. Apps that can provide an easy, seamless experience with cryptocurrency and digital assets will position themselves as market leaders, especially those that build on faster and more secure infrastructure.

For casual users, this provides a more secure feeling and experience in using assets for their day-to-day interactions. And being able to pay for groceries, season tickets, or a latenight shopping purchase with crypto through an app provides value.

3. Regulation And Clarity Will Bring Peace of Mind

Security is a chief concern for new adopters. Every story about NFTs being

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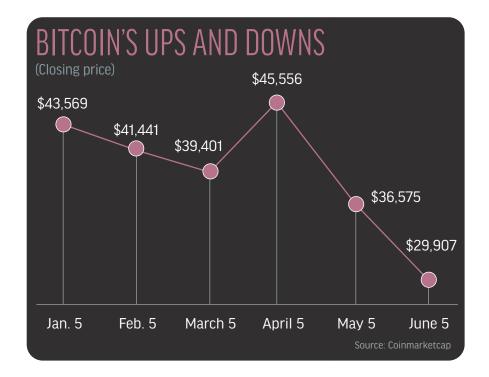
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stolen or crypto going missing keeps new investors on the sideline. To overcome concerns, we need to implement stronger compliance programs. We can expect to see clearer guidance from regulators as time goes on and as they become more familiar with blockchain technologies.

Notably, President Biden announced in March an executive order that focused on crypto's potential risks and benefits. The White House historically has never formally weighed in on crypto regulations, making this a significant development. As news of the executive order became public, Bitcoin experienced a price increase of nearly 9%. Additionally, the move encouraged California to implement a similar order, calling for state agencies to craft additional guidelines for digital currencies.

Decentralized finance has grown significantly since 2020, evolving from \$700 million to \$80 billion in transfer volume locked (TVL). This puts it at the end of the early-adoption

stage. But to continue to grow, stability needs to become a core theme. Investors recently sold \$133 million worth of Bitcoin investments. Moves like this are a prime example of lack of stability and trust in the market. To overcome this, regulations similar to those governing fiat must apply.

4. A Diversified Market Will Capture Greater Interest

Bitcoin makes up about 35% of the total \$2-trillion crypto market cap, but it used to make up around 70% of the market. The rise of altcoins, such as Eth, Cardano, Polkadot, Ripple, and countless other meme coins, are making up more and more of the market. Some of these coins tout functionalities superior to, or at least different from, Bitcoin. Others target niches such as gaming or collecting. Many investors are looking for the next "big thing" and see potential in altcoins, taking their investments with them.

Innovation in fintech is likely to find an increased focus on retail

investors as the market continues to evolve. As these digital currencies become more prominent, they are starting to develop real utility and value. For example, the gaming industry has seen a wave of developers create in-game tokens to be used for exclusive items such as collectibles and avatars. The token has value because the item in the game has value.

Investors not looking for an in-game item can still benefit from a diversified market through the offering of exchange-traded funds (ETFs). While still awaiting decisions from the SEC, crypto ETFs provide a way to bundle various digital assets into one investment class. This would increase market adoption exponentially. Those wanting to invest but not knowing where could spread out their money between different cryptocurrencies. This would require additional regulations that aren't currently in place for crypto, but these would be welcomed by investors.

ACCELERATION IS KEY

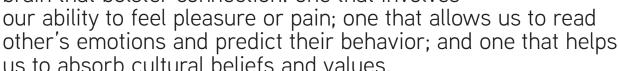
The world is focused on acceleration in automation, acceleration in education, and acceleration in use cases. Processes for onboarding and trading crypto are becoming more streamlined and efficient. New use cases in gaming and payments are pushing the technology forward. As the market decreases its emphasis on investing and returns, the focus will shift toward solving customer challenges and providing real tangible benefits.

There will be greater integration, and perhaps more niche markets, but in the end, these trends will create greater mainstream awareness and adoption.

PRESERVING CONTACT IN A CONTACTLESS ENVIRONMENT

By John Newton, Vice President, Strategic Partnerships, First American by Deluxe

We are wired to connect. That's according to social neuroscientist Matthew Lieberman, who says there are three networks within the human brain that bolster connection: one that involves





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endpoint

IT'S PAST TIME TO SQUASH RANSOMWARE

The key is to act before you're attacked.
That requires identifying vulnerabilities and shoring up systems.

BY JOHN GRAY

John Gray is chief technology officer at InterVision Systems, Santa Clara, Calif.

ACROSS THE GLOBE, a ransom-ware attack strikes a business every 11 seconds. This is not a statistic many companies want to think about. But it's a reality, especially for the financial-services sector, where one-fifth of ransomware attacks occur, according to recent data.

Financial-services firms are an appealing target for a ransomware attack. They store a lot of valuable and confidential customer and corporate data, and they tend to have a significant amount of cash on hand. Their IT security can also be perceived as deficient, especially at smaller banks and credit unions.

Companies need to treat ransomware as a real disaster, not just a typical security event. Critical systems and data will get locked down in an attack. The target's corporate reputation can also take a hit, especially if an attack makes headlines. That leads to a loss of customer confidence in any organization.

Financial-services firms maintain effective security, but there's always room for improvement. Let's explore the best practices financial-services firms and organizations need to know to defend against ransomware attacks.

First, there are factors that may already be putting you at risk.

Before diving into ways to protect your organization from ransomware, it's crucial to understand what these factors are. Here are three factors that can make your company more vulnerable:

Technology maintenance isn't consistent. Organizations depending on legacy systems that are not updated and patched regularly leave themselves wide open for an attack.

Employee behavior. Employees are often the first line of defense. If they are not educated on potential threats, they could accidentally bring malware into an organization. One in three untrained employees is likely to fall for a phishing scam.

Poor security strategy. An organization is more at risk if it doesn't have a unified security strategy. Organizations with multiple regions and departments need policies that address the different needs and risks of each region and department.

Attackers are poised and ready to take advantage of any weakness they can find. Now that you know what can put your organization in danger, it's time to look at ways to defend against an attack.

When it comes to protecting your organization, the first thing you need to understand is this: ransomware





events cannot be completely avoided. The threat is multiplying because cybercriminals modify their techniques as technology evolves. Plus, companies often pay the ransom.

When protecting against ransomware, you will want to implement as many defensive measures as possible. Below are four of the most effective actions you can take to reduce your risk:

Provide cybersecurity education.

As I mentioned earlier, employees are an essential part of an organization's defense. Having regular training sessions is ideal. Ransomware spreads through human behavior, so employees need to know what the latest phishing scams look like. Just one employee misstep—say, opening an attachment in a phishing email—can compromise an organization. Employees should also always notify their IT security team about suspicious emails.

Update your systems. Ensure all systems, and ransomware-protection software, are up to date with the latest

patches. Making that a priority lowers the number of possible entry points for an attacker. This is especially crucial because a recent study found that an external attacker can breach an organization's network in more than 90% of cases. Vulnerable systems and applications are the targets for the majority of attacks.

Establish password management. Nonsecure passwords give attackers a greater chance for success. Admins should create password rules to ensure security requirements are met. That could include strength requirements and the prevention of common phrases. Two-factor authentication also provides an extra layer of security. It requires a login password and a code that only the authorized user has possession of. The code is usually sent to a phone or through another application.

Secure your backups. Perform frequent backups of your critical data. Make certain they are not connected permanently to the computers and

networks they are backing up. That could mean securing backups in the cloud or offline. Having multiple backups is critical to ensure one backup can't be infected if another is attacked with ransomware. A data backup can also eliminate the need to pay a ransom to recover data if an attack occurs.

These suggestions are just a starting point. Protecting against a ransomware attack requires a holistic approach. A cybersecurity software solution can provide full coverage before and after a ransomware event through:

Protection: We've covered the steps you can take to protect your organization from an attack. A software solution will aid those efforts with information-security monitoring tools. Other system settings can block ransomware before it is installed.

Detection: The faster your organization can detect a ransomware attack, the better. A software solution can monitor and analyze activity data from every device connected to a company's network. When a security breach is recognized, the software can automatically log off affected users or notify a supervisor.

Recovery: What you do when a ransomware attack happens is just as important as what you do before your business is attacked. A software solution should provide a managed replication and recovery process to ensure a quick comeback from any service disruption.

The financial-services sector will remain a target for ransomware attacks. If your organization isn't already doing preventative measures like implementing training and awareness, securing backups, updating systems, and keeping passwords secure, do them as soon as you can.

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