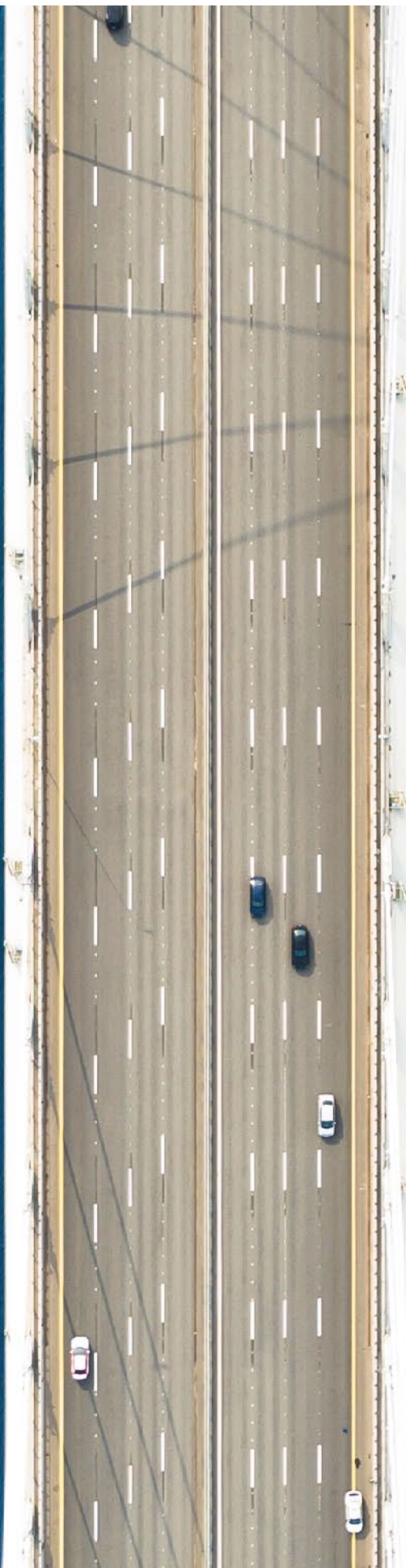




THE 2019 BRIDGE TO 2020

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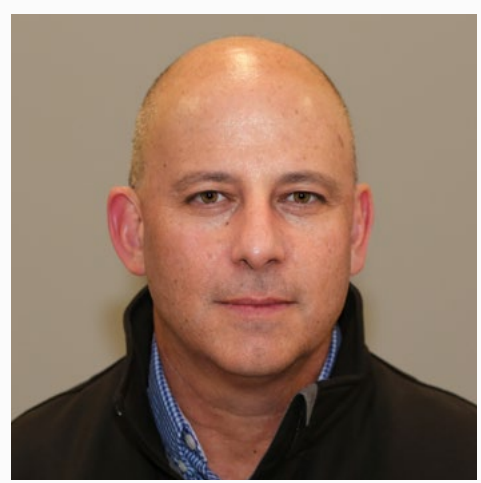
One decade draws to a close, the next one looms. Only a few months into 2019, the year is already shaping up to offer a bit of a watershed in how we pay and how we get paid.

As the 2010s roll off into the 2020s, the fact remains that technology is blurring the lines that used to exist before the (continuing) digitization of commerce. Along with this trend, as transactions between firms, between people and all the permutations thereof span currencies and timezones, a few guideposts stand out: Everyone wants more speed, better data, mobile movement of money and, of course, security is paramount.

PYMNTS queried over two dozen C-level executives from companies at the forefront and intersection of technology and innovation. Here, you will find insight into what's next, but also what we need to leave behind. The password is passé, the machines are learning, the data is big and getting bigger. Above all else, said several respondents, trust matters more than ever.

How to get there remains a matter of debate, and is a driving force behind innovation. Some of the executives we spoke with pointed to new ways to establish digital identity as among the biggest innovations on the horizon worth pursuing, perhaps through the use of distributed ledgers or biometrics. Others said the digitization of commerce, with an attendant move toward omnichannel, will drive change in the decade ahead.

As always, in payments, the one real constant is change. Read on to see what's top of mind as we go "out with the old and in with the new."



YOSSI ZEKRI
President and CEO

Leave The Friction In The Dust

Payments, commerce and retail innovators require frictionless and compelling UX, as well as the establishment and maintenance of trust with others involved in the transaction as the digital relationship continues to augment or replace the physical relationship. We must innovate with this in mind.

What to Leave Behind

As we are on the precipice of a new decade that promises even greater technological acceleration, we must assess which technologies help to drive innovation and which create drag.

Using passwords as the sole identity verification method is no longer the best approach to authentication. They are very vulnerable to attacks for many reasons, such as too many breaches, too many weak passwords and too many digital identities. There are better methods to use alone or in conjunction with passwords to verify and protect identity.

The practice of using data that is not “trusted” will also need to be left behind. Data is increasingly plentiful, and will yield improved understanding of behaviors – but if we can’t trust the data itself, it will yield misgivings and confusion. We need to leave behind untrusted data.

Technologies that are not integrated into solving problem(s) for the commerce, payments and retail industries should also be jettisoned. Technical solutions that are standalone, require large investment and maintenance, solve only part of the problem and are not integrated with other technologies will also stay behind.

Going Forward

AI and machine learning are still early in their life cycle, and will be necessary to continue forward. These technologies are being used to disrupt every industry. I anticipate that we’ll continue to heavily invest in this technology well into the ‘20s, specifically for enhancing authentication techniques and

augmenting biometric technology, as it is co-developed with Big Data analytics and behavior biometrics.

When dealing specifically with identity verification, it is imperative to not solely rely on technology, however. I expect humans will still play a large role in aiding the verification process (human-assisted or curated) to establish the best results with the highest confidence for those use cases that pose the greatest risk or consequence.

As digital identity brings new challenges, the full use of distributed cryptography will need to come forward. This involves the use of distributed ledgers, peer-to-peer blockchain or other protocols for inter-node communication.

Establishing identity in the digital economy is proving to be a fluid process, as questions multiply around the collection, processing and

ownership of data. Identity verification spans many conduits and data points, including device authentication; biometrics such as facial, voice and palm; and, more recently, behavioral biometrics, which can seem quite creepy.

The quest for speed will continue in the face of our “on-demand” culture. The advent of 5G, with its increased performance impacting latency, data rates, decreased energy consumption, higher system capacity and massive device connectivity, will yield new opportunities. Coupling this with improved mobile devices will create even further transaction mobility. Consumer expectations have evolved thanks to the rise of real-time sharing of information, as they now expect transactions to be instantaneous and ubiquitous.

THE 2019 BRIDGE TO 2020



NICKY KOOPMAN

*SVP Content and Value Added
Apps and Services*

Leave The Old Way Of Innovating Behind

Flexible, open-payment solutions are the order of the day as we move toward a new decade. For too long, the industry's business model has focused on trying to lock merchants into closed-system, one-size-fits-all payment acceptance devices.

For many years, that model was particularly frustrating for small to medium-sized merchants who bought or rented purpose-built "boxes" that were often restricted to just one application: payment acceptance. Some might be able to run one or two other applications, such as poorly integrated loyalty or time attendance with a clunky interface, but most settled for card acceptance.

Then along came a class of innovative and disruptive aggregators and facilitators who recognized that much of the SMB merchant base was either unserved or poorly served. They were able to simplify, or bypass, merchant certification processes. Working directly with a new group of upstart

providers, they were also able to base solutions on commodity hardware such as smartphones and tablets.

Hardware as an Enabler, Not a Driver

True innovation is doing the same thing in a different way so that, in our business, the merchant and consumer experiences are dramatically improved. That means we need to start thinking outside of boxes, literally. For too long, we've mischaracterized processor speeds and memory increases as innovation.

The challenge for the acquiring community is to step out of the comfort zone of selling essentially single-application payment terminals. Hardware is not a solution and doesn't drive innovation – it enables it. In the digital age, software and services are what define winning solutions.

The dedicated card acceptance terminal is on its way to obsolescence. Merchants need solutions that integrate multiple consumer-facing

functions, such as delivery and payment, in one seamless transaction. They also need to embrace consumer demands for online price-checking and ordering, mobile payments and even hailing an Uber. Merchants also want integrated solutions with business functions, such as inventory and workforce management, that can help them maximize profits.

In retail segments, and for their service providers, the key to survival is innovation. Merchant payment solution providers must step up and take on a crucial role in helping SMBs claim a place in the winner's category.

We're on the cusp of next-generation acquiring services that focus on transforming the point of sale (POS) into a point of interaction (POI) that brings together innovative suites of customer-facing services, business productivity applications and new financial services. Acquirers must use a platform on which they can assemble and manage their own innovative solutions on a diverse assortment of

devices that provide greater choices to merchants.

In this manner, payment can become an integrated component of an application suite that can seamlessly combine multiple processes at the POI. For example, a small appliance store could arrange for financing and delivery, along with payment, using a compact countertop or handheld device in what looks to the consumer like a single process.

Out of the Box

Acquirers and service providers must learn to do the same thing differently. That means transforming into innovation advisors.

Although we're moving in the direction of drop-shipped, self-installing payment solutions, SMB merchants for the most part have little time and few resources to evaluate the growing variety of systems available on the market. Few smaller merchants have the luxury of in-house IT resources, and most are already wearing multiple hats on the

job. They have little time to experiment on which devices and apps can help improve their operations, so they are desperate for help in avoiding costly mistakes.

Merchants need to be able to modify their payment infrastructure quickly, as they and consumers discover new ways of doing business and seek to take advantage of new capabilities. Solution providers can't afford to be hunkered down with closed-environment solutions that lock merchants into a tightly restricted set of hardware and software.

Choice and Flexibility

The growing number of apps, value-added services and cloud offerings will only continue to expand, similar to how smartphones have continued to spur more and more developers to enter the mobile app market. The challenge is how to integrate these apps at the POI so they will work together in an orchestrated fashion that adheres to merchant processes across multiple sites and devices.

For consumers and merchants, innovation and choice often initially seem to bring more complexity. Yet, the history of technology shows how quickly users become familiar with new ways of doing things, and as they gain experience with new payment solutions, we should expect them to demand more new experiences and business tools. There is no time to stop and congratulate ourselves on how far we have come.

In the modern era, the pace of innovation has been marked by huge leaps forward: the printing press, electricity, penicillin, the combustion engine, the computer chip. But those initial big-bang advancements have always been just the start of momentous waves of continuous innovation that improve how people live, work and interact. In the payments industry, this requires providers to discard the locked-in practices of the past two decades and embrace openness and flexible infrastructure.



arm insight

RANDY KOCH
CEO

Data As The Engine

Driving Payments Innovation

As the payments industry begins to turn the page on the last decade and look ahead to the next 10 years, there have been many innovations that have changed the game in terms of the speed, intelligence and data behind the movement of money. Over the last 10 years, we have seen significant updates in the infrastructure and rails behind the money movement systems, which have increased the speed of settlement, transformed paper-based processing to digital formats (most importantly, marking the growth of mobile payments) and provided greater insights into end user behaviors and preferences.

Perhaps one of the biggest lessons learned from the past decade is that end users are fickle about their money, and are driven by the instant gratification they get from other digital activities (i.e., instant streaming of entertainment, same-day shipping and instant downloads of apps, music and other content). If they can get their movies, books and other content

instantly or on the same day, why does it take multiple days to get their money? This has forced payments providers to make significant enhancements to their systems to deliver a new kind of money movement experience that meets these ever-changing expectations. Companies and terms like Square, Zelle, Venmo, Stripe and Same Day ACH that didn't exist a decade ago are now driving the innovations that will launch the payments industry into the next decade.

One of the key benefits of the digital transformation of payments is the availability of data insights that can drive even better user experiences and innovations in money movement. We see the "monetizing" of data as a huge catalyst for growth and innovation in the payments industry in the coming years. A front-page cover of The Economist magazine famously said, ["The world's most valuable asset is no longer oil, but data."](#) The ability to leverage the insights available within the mass of payments data being created each day can help companies

drive better customer service, deepen personalization efforts, build better products, find new sources of revenue and leverage new technologies like machine learning (ML) and artificial intelligence (AI).

At the core of this Big Data phenomenon is the challenge of effectively using the key insights found within the data while ensuring that sensitive personal information is protected and not shared or put at risk. Regulatory compliance, data privacy, reputational concerns and headline risk have trained payments executives to be wary of tapping into their data assets for new product ideas or revenue streams. However, advancements in data management and a deeper understanding of the data landscape allows both compliance and business executives to properly understand

the risk-opportunity profile in order to safely and securely monetize data to drive payments innovation.

When executives hear the term “data monetization,” they immediately think of selling financial data to external parties. While there is a safe and secure way to participate in this largely untapped method of external data monetization, there are also other valuable paths that drive internal economic benefits from data assets (i.e., analytics, enhanced fraud detection and better customer segmentation). There are also different types of data that can be used in monetization activities, namely raw, anonymous and synthetic data.

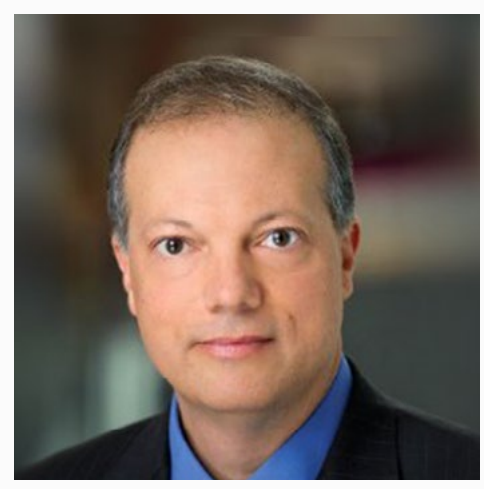
We see synthetic data as the future of data monetization and data security. This type of data mimics the real data while removing the identifiable characteristics of the individual, the

banking institution and the transaction. Because synthetic data maintains the overall data accuracy, it can be safely used by internal teams – and safely monetized. Many different industries today use synthetic data to drive greater insights into research, prototyping, testing and optimization, while protecting the identities and personal information of consumers.

For example, healthtech companies have [partnered](#) to develop a bank of synthetic data modeled on real-world patient data from a national cancer registry to facilitate research without revealing patients’ identities. And researchers at Google have recently [developed](#) a new technique for removing motion blur in photos or inferring the motion dynamics of a given scene by using synthetic data. Also, self-driving automobile

companies are [using](#) synthetic data generation and simulation to create virtual scenarios where they can train their driving algorithms over much longer driving distances than in real life.

Many organizations are talking about the growth of ML and AI as the catalyst for innovation and growth in the next decade. We agree with that idea and have seen tremendous innovation on this front – however, ML algorithms and AI use cases are only as good as the data behind them. Organizations must pull data out of their silos, clean and refine the data, and use the right type of data (raw, anonymous or synthetic) in the right monetization method to get the biggest bang from their ML/AI innovations. Safe and secure use of data will be the engine behind payments innovation in the decade to come.



KARL P. KILB III
CEO

Authentication And Beyond

The future of payments will be largely contactless, with innovative ways to introduce invisible payments via sensors and IoT connectivity. Billing counters and checkout lines will be reduced or eliminated. While the payment may be invisible, there will need to be authentication measures to prevent fraud. A seamless checkout system that allows the prevalence of fraud is not sustainable.

Online banking, digital payments and eCommerce require the right approach to security and convenience in order to be adopted on a large scale. As the payment industry continues to consolidate, consumers will gravitate to the solutions that are the most secure and convenient.

Security is the most essential requirement, and the foundation upon which any successful banking, payment or eCommerce platform must be built. The most convenient solution is not workable if it isn't secure. When

customers have their information compromised through a breach related to a bank or an eCommerce site, or from a malware-infected POS, the customer suffers and the bank or merchant also sees reputational damage to its brand – especially in today's high consumer advocacy environment, which is fueled by unchecked social media that can spin negative news virally.

The internet and the operating system are inherently vulnerable to hacking, sniffing, snooping and malware. Fraudsters are becoming increasingly more sophisticated, and artificial intelligence in the wrong hands can become another weapon in making fraudulent transactions appear to be legitimate. If fraudsters are aware of consumers' buying habits, they can follow those patterns to make fraudulent activity appear to be legitimate. The only absolute security is one that is personally controlled by the individual.

The most important innovations in the payments industry will focus on security. Since the transactional activity itself is on the internet and operating system – and are inherently insecure – the authentication “lock and key” should be on a separate channel. The best solution is multi-channel as well as multi-factor, putting real security into the hands of the consumer.

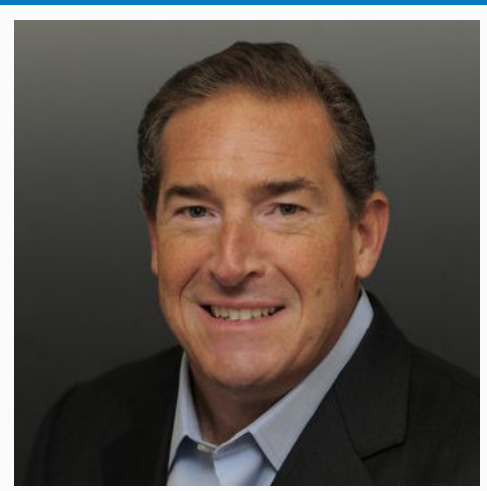
Governments, banks and other financial institutions typically require that they host their own data. In addition to complying with security regulations such as the European Payment

Services Directive (PSD2), they must also address data protection and privacy regulations such as Europe’s General Data Protection Regulation (GDPR). Security that avoids the internet and operating system and does not involve the collection, use and storage of personal biometric data is the best solution. Once personal biometric information is compromised, it can never be relied upon again.

Let’s work together to make the world safe for online banking, payments and eCommerce by protecting everyone’s identity and eliminating fraud.

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The B2B Revolution



DEAN M. LEAVITT

Founder and CEO

Broadly speaking, innovation in B2B payments over the past decade has resulted from a digital transformation designed to eliminate transactional friction. Accounts payable (AP) and accounts receivable (AR) departments sought to streamline how they made and accepted payments, to gain more visibility into their enterprise data and to more efficiently manage their cash – and to accomplish all the above in a cost-effective way.

As B2B payments continue their migration toward a fully electronic environment, these outcomes have become a reality. And it is good news for the bottom line, too, as traditional methods such as cash, check and wire are expensive, inefficient to manage and generally devoid of adequate reporting capabilities for higher-velocity buyer-supplier relationships.

Pricing

For commercial cards specifically, a trend that we will continue to see over the next several years is the extension

of dynamic discounting capabilities to card-based transactions via technology platforms, through which proprietary interchange rates can be deployed for the purposes of either reducing the cost of acceptance or simplifying the way in which card-based transactions are priced.

Traditionally, there has been little transparency into how commercial card payments are priced, which has made it very difficult for suppliers, who typically bear the burden of such costs, to budget those expenses. This is already changing, as the traditional rigid and opaque pricing structures associated with cards are becoming more malleable, transparent and business-friendly. Invented over 70 years ago and never envisioned for B2B transactions, the traditional “card rails” have now become the most flexible and efficient way for businesses and institutions to pay and get paid, which has resulted in more and more entities migrating their invoice-based payments from check, wire and ACH over to their commercial programs.

Enforcement of Rules of Engagement for Electronic Payments

Promises are often made between buyers and suppliers related to when payments will be made; however, even if they are memorialized in agreements, those promises are often not kept. Technologies have recently been developed to enforce the agreed-upon rules, thereby ensuring appropriate payment behaviors of trading partners and dramatically reducing the angst often associated with commercial card use and acceptance.

Security

Fraud is a massive and ever-growing issue that can impact a business' revenue as well as its reputation. Unfortunately, fraud threats exist both internally and externally, and businesses that utilize card products are increasingly being targeted by

fraudsters, so it is imperative that companies engaged in the use or acceptance of card products protect themselves from card-based breaches. Traditional protection methodologies have focused entirely on the manner in which card data is received, processed, passed, protected, stored and even destroyed.

Reporting and Reconciliation

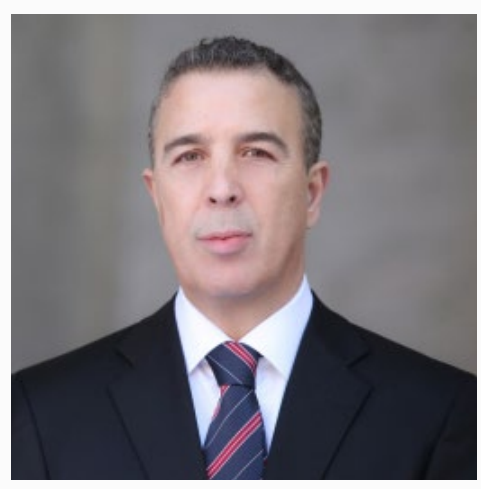
Payments among trading partners, especially large ones, can be very complicated. Single, multi-million-dollar payments can represent hundreds or even thousands of invoices, all of which must be properly posted. Regardless of the payment method, this has been a significant and expensive pain point for enterprises since the beginning of modern-day commerce.

Additionally, as ERP platforms become ubiquitous, the thirst for

enhanced remittance data has become insatiable. While lockbox services have successfully fulfilled the need for reconciling checks, wires and ACH transactions, commercial card transactions – and especially email-based virtual card transactions – have until recently been relegated to a parallel universe, where manual activities are fraught with human error and latency.

However, much has been done to address this issue, and platforms now exist that can completely automate the reconciliation process for buyers and suppliers. As we enter 2020, simplifying, automating and expediting the reconciliation processes for AP and AR departments will become a major priority for corporations, institutions and government agencies – and FinTechs will continue to lead that effort.

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Brighterion
 mastercard

DR. AKLI ADJAOUTE

Founder and CEO

The Promise Of A Value-Added Future

There have been a number of invaluable innovations over the past decade, but that has not come without tremendous failures. As I look back over the past nine years, I see multiple opportunities where we and other companies within the industry could have done better, as well as numerous places where we can advance some of our most advantageous developments.

Across the payments, commerce and retail spectrums, I believe we all need to continue creating value, while reducing friction and delivering what we say we're going to deliver to customers.

There have been many false promises made by players in this industry, and those ideas have been hyped-up through the use of buzzwords or technical jargon that seems appealing but doesn't solve any problems. It adds to an increasing issue we're seeing more and more within artificial intelligence (AI): Very few projects actually go live, and companies are creating elaborate dashboards that

look fantastic, but don't deliver. In the world of aviation, a nice dashboard doesn't fly a plane.

We need scalability, resilience, technology and tech privacy. We're entering a time when millennials are having children and pushing for increased privacy. People don't want their information sold, and they're willing to take whatever measures are necessary to ensure their transactions are protected and their personal data remains private. Financial institutions need to understand that with all the new laws, such as the GDPR, they must look for technology that protects their customers' finances and privacy.

We need compliance departments to communicate efficiently with fraud departments and debit card departments, and to collaborate with checking, loan and retail payment departments. The current process is siloed at the majority of financial institutions, and we need to move to omni- and- cross-channel solutions.

Banks are spending billions of dollars to mitigate fraud and money laundering scandals. Leaving siloed technology behind is the first step to correcting a system that is damaging the industry. I believe the key is related to collective intelligence with a 360-degree view of the customer. Regardless of where and on what one spends their money, we will be able to keep those payments secure. When you have a vision of personalization and a global view of the collective intelligence of your systems, you will be able to provide customers with a valuable service and increased payment security.

I believe that in the future, companies will look to omnichannel solutions that can work with any data, in any format and with any source, to combine different business lines into one view and one system. When it comes to compliance, you must have a system that globally touches know your customer (KYC) and anti-money laundering (AML) practices. We need

a vision where we talk to each other to move away from the possibility of fraud while providing the best product to our customers. When we combine omnichannel collective intelligence with securing AML, banks can cut criminal activity and provide necessary value to their customers.

One thing we can leave behind is cryptocurrency, which has a criminal element that will be tough to shake. Crypto is not based on the GDP of a country, gold or debt. It isn't transparent, and it is used for money laundering and criminal activities.

Cryptocurrency is one of the greatest destroyers of wealth in the financial history. For example, Bitconnect's value was over \$450 in 2018, but it is now worth \$0.067 – assuming you can find a buyer. One [website](#) lists hundreds of scams and defunct cryptocurrencies, many of which defrauded billions from investors worldwide.

Although JPMorgan Chase's Jamie Dimon has called bitcoin a fraud, this hasn't stopped some financial advisors from advocating their unfortunate clients to purchase cryptocurrencies.

The vision for the '20s is to stay away from the hype, to concentrate our efforts on technologies that bring protection and benefits to financial institutions and their customers, to defend ourselves against criminals and terrorist organizations and to deliver value without deception – all while meeting consumers' expectations.

Throughout history, technology has shaped human life with innovations like electricity, the printing press, the telephone, the computer and the internet. With all its power and transformative implications, AI could, if done right, help us become better humans.

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Building Trust

For The Next Decade Of Payments



BRUCE DRAGT

Chief Product Officer

The last decade has seen sweeping changes throughout the payments industry, from the significant impact of financial regulation on traditional providers to the rise of FinTech. We've seen critical security limitations drive the U.S. to adopt EMV chip cards and cause tokenization to become commonplace. Consumer needs have produced the emergence of P2P and faster payments, and virtually all solutions have become digital; the ways consumers pay today would have been unrecognizable just a few years ago.

As we approach yet another new decade of change and promise, the time is right to reflect on where we have been and where we are headed.

Some things shouldn't change, like upholding the trust of those who entrust us with their financial lives. Conversely, the past decade has seen several key trends, which are now arguably better left behind as we embrace a new way of doing business.

Consolidation

Putting two things together to make one sounds good, but does it produce anything new? We are often left with something a little less than we had before and, more importantly, have spent time on something that we already had without making it more useful. Similarly, continuing to propagate monolithic systems versus creating decomposed services limits the utility of the core functions locked in the monolithic structure. The future of scale will be extracting the many services from the monolithic systems of the past versus just reducing the number of monolithic systems and putting more volume through them. To build trust, we must do things that have lasting value.

Start-Up Pays

After a decade of attempts, building a "new rail" or creating a standalone payment system seems more ambitious than useful. Many of those attempts did not collaborate with the key participants to generate value for

everyone, including the end user of the service. In the future, collaborating and focusing on the value for the end user will help to generate trust across ecosystem participants.

Innovation for Profit

The contrast here is between innovating to make something useful and innovating to bring an economic model to life. This often happens through efforts to monetize an asset. It usually takes the form of, “this many people performing this new activity equals this return.” The focus is on driving a financial result rather than getting new utility for those same people. With focus on user-centric design and building trust, this approach is rapidly disappearing.

New Decade, New Vision

The 2020s will certainly be different than the 2010s. Here is what our industry should carry forward to resonate with tomorrow’s consumers:

Service-First Approaches

The concept of exceeding consumers’ service expectations will drive the direction of our industry in the next 10 years as never before. So, what does service look like to consumers in the coming decade? We can identify at least four key areas of opportunity:

- **Personalized support:**
This includes knowing context, history and previous experience as part of delivering support. These are necessary components to developing credibility and trust – the consumer expects you to know more than they do, not less.
- **Cross-channel interaction:**
Interactions via app, chat, email, in-person and phone – and likely across several of these in a single interaction – enables the service to follow the consumer through their experience and provide support as needed.
- **Advice:**
Data-driven intelligence helps guide consumers on what to do and how to make their key decisions. Options are fine if they come with guidance, but

consumers will expect the promises of artificial intelligence to come to life through your service as well as your solution.

- **Safe and Successful Transactions:**
Promised services must be delivered reliably. No consumer wants to be the victim of fraud, nor do they want to be denied the ability to perform a transaction. Excellent service means always approving your customer and never allowing them to be the victim.

Open Platforms

This ideal, more than any other, will drive the industry in powerful new ways we have yet to explore. Open platforms provide the working environment for innovation to occur across multiple parties. Visibility into the opportunity becomes clear as the open platforms enable a hypothesis to be tested, refined, improved and delivered without complex relationships or technical integrations. In an open-platform environment, the principles of multi-party innovation are at work, bringing speed, innovation and flexibility

to creative, service and business processes.

Building Trust

Ultimately, we are entering a time when organizations focused on helping consumers will grow and thrive. Temkin Group data shows 86 percent of consumers are more likely to repurchase when they experience excellent customer service, and 79 percent are more likely to trust.

Trust and service go hand in hand. As we move forward, we have to ask whether we are serving the communities around us and inspiring their trust.

As we continue on the path to service-first approaches and open platforms, we have a great opportunity to build trust into all that we do. Trust will come through how we develop these solutions. Let’s live up to the opportunity our industry provides.



ALAIN MEIER
CEO

Identity

Through The Eyes Of The Consumer

As we cross into a new decade, it is time to shift the focus of identity verification to the user's perspective, just as we have with so many other services.

Let's make the 2020s a time when we no longer have to scratch our heads to remember the color, make and model of our very first car. Let's make it a time when we no longer have to take a picture and upload our driver's license with that embarrassingly old picture of ourselves, reminding us of the days when we drove that teal (or was it turquoise?) Ford Taurus.

All joking aside, we are entering an era where everyone's identity data is in the hands of hackers – and simply knowing your information is not enough proof that you are who you claim to be. If we learned anything from the 2010s, it's that there needs to be something better – a solution **more secure and more innovative**, but with **less perceived burden** to a user.

Greater Security

What if we left behind our reliance on the Social Security numbers, photo IDs and knowledge-based authentication and shifted our focus to something simpler and more secure, like our phone numbers?

Using the phone number as a person's primary identifier – augmented with regulated data – is advantageous for a few reasons:

- **Phone numbers are ubiquitous and comfortable**
Today, 95 percent of adults in the U.S. have a personal phone number. It's a number that is easy, top of mind and not as concerning to share on the web.
- **Possession can be proven**
Not only can a phone number create a link between the actual person and their number, but it can also verify that the person has possession of the phone number by placing a phone call or sending a text message.

- **Higher barriers to attack**

Verifying identity by phone number creates a high barrier to fraudulent activity. In contrast, traditional identity systems are based solely on knowledge of information that is available on the black market, rendering all solutions based on such information unreliable.

Knowledge-based authentication (KBA) and ID scanning should be a system of last resort when defending businesses from stolen identities in the 2020s. Dated compliance regulations may still require companies to provide a KBA solution for now, but eventually these traditional methods will be discontinued.

Less Perceived Burden

In the 2010s, there was plenty of noise around customer experience and the idea of minimizing friction for users. We expect this to only grow in

the 2020s as people continue to live in a mobile-first world. Companies recognize the necessity to improve user experience while simultaneously enhancing security.

Your signup flow should be the first path on a low-friction customer journey. By structuring a signup flow to collect as little information as possible to positively identify a user, you minimize friction for the greatest number of users.

More Innovation

As companies continue to solicit new customers from around the world into the 2020s, they will require smarter, faster compliance and anti-fraud solutions.

In many instances, especially high-growth situations, compliance and onboarding departments rarely receive

the development resources they need, while product and management departments want to consistently move faster. There is a critical need for a system that fits seamlessly into an existing user flow and offers option for automation.

Historically, integrated solutions have been costly and have used outdated technologies. In many cases, they are not well-suited to companies growing from thousands to millions of monthly verified users. Companies like these need a flexible system that fits into their existing sign-up flow, allowing them to scale faster.

Just the Beginning

This is the first step in moving toward a world where control of identities goes to the users rather than third parties who have purchased their data on black markets.

THE 2019 BRIDGE TO 2020



Diebold Nixdorf

ARVIN JAWA*VP, Retail Strategy*

Cookie-Cutter Scalability Just Won't Cut It

In the broadest sense, retailers will still have the same classic challenges to solve for in the coming decade that they've had over the last few decades:

- **Manage inventory**
- **Manage real estate and technology investments**
- **Manage staff**
- **Meet consumer expectations**

Does that list feel a little too “last decade” to you, with its focus on the physicality of retail? Here's the thing: When you've got pure-play digital leaders kicking the tires on physical locations and partnering with physical stores to strengthen supply chain operations and build brand visibility, there's clearly life left in the traditional brick-and-mortar store – which means the problems I listed above will still need to be solved. What has changed, though, is the paradigm.

For the past several decades, the prevailing paradigm was for a retailer

to develop or assort a great product, ensure good distribution and/or accessibility and scale up as quickly as possible. The chain model – where consumers valued knowing exactly what to expect when they walked into a store, whether it was located in Atlanta, Georgia or Paris, France – was in hyperdrive. Retailers lived in a paradigm where growth and profitability came from scale, from a repeatable formula. Malls fueled this predictable growth pattern across the country – until relatively suddenly, they didn't.

That model is gone.

In 2019, and in the coming decade, the industry will experience an awakening regarding how classic challenges should be addressed in a new paradigm.

Today's consumers are smarter and more digitally capable. Mall-based traffic is no longer the predictable workhorse it once was, as eCommerce and digital channels have reset both the shopping journey and customers'

expectations. The Amazons and Alibabas of the world have driven consumers to expect relevant, personalized offers, the best pricing possible and incredible value in terms of the time spent getting the products we want.

The “copy/paste” model of expansion – originally driven by a desire for consistency – doesn’t work in a paradigm where localization and personalization are the new drivers of business value. Consumers are looking for locally relevant, targeted experiences and retail interactions that make them feel like an individual, not a segment.

Advantage is now gained by understanding how to attract the right customers and subsequently create compelling, meaningful consumer interactions through appropriate pricing, quality products, convenience and experiences. Retailers must design, deliver and continuously iterate shopping journeys that emphasize whatever their customers value most,

whether that’s a fair deal, respect for their time, access to (or fulfillment of) the product on their terms, an enriching experience through impeccable service, brand immersion ... the possibilities in this new paradigm are endless, but are a complete shift from the way retailers viewed growth and profitability just a few years ago. In the new paradigm, advantage is created by generating higher lifetime value with the specific customers who most desire that particular brand and experience.

So, how do we reinvent the classics?

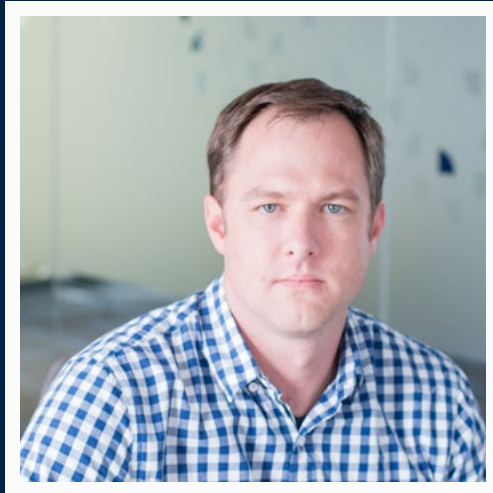
What happens to the classic problems of managing inventory, real estate, technology investments and staff (plus that small matter of not just meeting, but now exceeding, customer expectations in this strange new retail world?

- Inventory is minimized, or even eliminated. New concepts like Bonobos and Nordstrom Local offer tailoring, researching and browsing, but you

don’t walk in with the expectation that you’ll walk out with a bag.

- Real estate is customized, with service hubs, pure sales locations, pure experiential locations and even simple distribution sites driving a diversification of the traditional cookie-cutter store model.
- Technology investments can enhance the in-store experience in new ways, with self-checkout and mobile technology enabling staff to operate entirely differently than they have in the past. Customer service-oriented employees act as a lever to drive more valuable baskets at checkout.
- Data-driven journey management will ensure retailers can exceed customers’ skyrocketing expectations by providing relevant, contextual and purpose-driven offers, promotions and pricing in personalized ways.

The bottom line is that retailers will become more agile in the next decade, and innovations should be based around empowering agility. Where the old paradigm was all about building a model and repeating it, agility is the absolute opposite: You don’t know what the next year will hold, which new apps will drive engagement and interest or what new technology will catch your customers’ attention. Retailers can no longer count on what’s happening today as the basis for what will happen tomorrow. But they can optimize one of their greatest assets, which is their physical locations – which, in a connected commerce world where pure-play digital is looking less attractive than it once did, is now a differentiator.



GERHARD OOSTHUIZEN
Chief Technical Officer

The Race Against Time

To Round Off A Decade

As the year starts to pick up speed, there are countless initiatives poised to come to fruition or, at least, receive serious attention in 2019. The result is a myriad of questions the industry has to face and, to a degree, a level of uncertainty: Which of these questions will find answers in the current decade, and how many will keep haunting us well into the '20s?

Let's consider:

- Will 2019 be the year of open banking and APIs? Will banks seize opportunities to innovate and collaborate in an attempt to expand and improve their consumer relations? Or will they be more hesitant, adopting a slow and steady approach that will see developments spill over into the '20s?
- Will we finally see Big Tech (like Facebook, Amazon, Netflix and Google) make a splash in the banking sector, following in the footsteps of Ant Financial (of Alibaba fame)?

- Can – and will – social payments take off in earnest, allowing us to make payments from Facebook or Twitter?
- Will we finally find blockchain's "sweet spot?" Blockchain was one of those buzzwords that took the world by storm in early 2018, but hasn't yet found its promised all-encompassing purpose. Will 2019 be the year to change all that, or will the new decade bring even more hype as new use cases are dreamed up?
- Will the Internet of Things and the Internet of Payments be the next big thing? Payments can already be made through smartwatches and home devices like Amazon Echo – what will be next?
- Will the concept of "personal digital assistants" finally reach a tipping point?

There's a lot to take in. However, if we sift carefully through all this noise, it's clear to see that something far more complex is bubbling beneath the surface: an industry war for control of the consumer experience – specifically

in the digital payments (including eCommerce) space.

Who is at the frontlines?

The fight for retail was arguably won when Apple added NFC in 2014. This was a game-changer for the tap-to-pay market. But eCommerce is where the battle is currently raging, and therefore it must be the next frontier.

Payment networks won the first round by tokenizing cards on file and asking merchants to reach out to them for every transaction. The World Wide Web Consortium (W3C) promptly fired back with a web payment spec, which is now adopted by most browsers. This could potentially mean the success of payments via the browser, but it has not been widely adopted – yet. Finally, 3-D Secure 2.0, which was built to solve authentication in a general way,

was added to control the eCommerce payment layer of the future.

2019 is set to present us with an inflection point: Visa and Mastercard, to start with, will be forced to work together on secure remote commerce (SRC) – it's their big "single-button" play to consolidate the lukewarm Visa Checkout and Masterpass buttons. And, for the first time, EMVCo released a spec early (just a week before Money20/20 in the U.S.). 3-D Secure and tokenization will be pushed hard and mandated in 2019, while web payment handlers (next up to take payments out of the cards realm from W3C) will start mainstream adoption.

All of this begs the question: What are banks going to do when these new and developing payment approaches all become a reality?

The answer is quite simple: Choose a FinTech partner that can enable these capabilities in a streamlined way, and they'll come out on top regardless. With the right partner, banks can focus on what they're good at, and that's giving customers the innovative products and services they demand, while giving them a consistent and secure experience no matter where or how they pay.

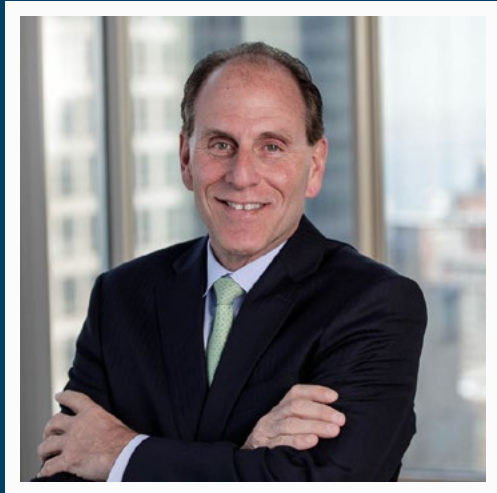
Pick Your Battles

Through all the noise and hype around technology and the latest innovations, it remains true that successful companies are not necessarily about blockchain or artificial intelligence (AI) or any other type of technology. Some firms may be seeing good returns for consulting now, but will ultimately be eclipsed by those that solve a real

problem, are user-friendly, offer real value and protect the customer.

As we move into the '20s, the collective sentiment seems to be something like this: Let's moderate our exuberance for the next big thing and get back to solving real-world problems instead of fixating on ways to use cool new tech. Rather than passionately debating technological hypotheticals, let's make time to focus on the here and now, and discuss ways to use the tools we already have to make life easier for everyone.

If, like Entersekt, you're a FinTech or financial institution that chooses to look past the hype in favor of creating value for your clients, then we're bound to bump into each other soon. Whether that will be still in the '10s or well into the 20's – well, time will tell.



First Data

GUY CHIARELLO

President

Ensuring A Future Of **Frictionless Customer Experiences**

Thanks to significant technological advances in the past decade, innovations in the payments sector have undergone a dramatic transformation. Ten years ago, devices like the iPhone were just gaining mass-market appeal, which helped usher in a new era of commerce. Mobile wallets, banking apps and online marketplaces that today enable seamless commerce were either nonexistent or in an embryonic state. Depositing money and conducting typical banking transactions meant spending long minutes in a teller line or at an ATM. Paying bills was a time-consuming experience, involving the writing of checks, stuffing envelopes and running to the mailbox.

These practices had numerous points of friction, but that isn't the case today. Payments and commerce innovations have paved the way for frictionless customer experiences, across all digital platforms and devices. Cloud computing, data analytics, artificial intelligence (AI) and mobile

computing have propelled the digital transformation of payments, while at the same time motivating financial institutions, retail innovators and other FinTechs to launch more advanced innovations.

Digital transformation has enabled increased opportunities for new disruptive solutions from enterprising startups, and has also given traditional merchants the ability to stay relevant to consumers. With every decision they make moving forward, merchants must ask themselves, "How will this solution improve my customers' experience and reduce friction?"

What to Leave Behind

- **A single-channel strategy and mindset**

An omnichannel world has become retail's starting point. Whether it's by launching a new mobile app or appearing in an online marketplace their customers frequent, merchants must enable their products to be discovered, bought, sold, picked up and returned across every venue, physical and virtual.

- **Sub-par customer service**

Ubiquitous retailing will not work without superior customer service. Customers want an experience where they are understood as individuals, rather than just part of a mass. This is the new reality of what customers expect as a baseline.

What to Embrace

- **A more powerful combination of advanced analytics and commerce data**

With greater access to data analytics tools and AI, merchants can create better offers and experiences – and, more importantly, they can go to where their customers want to interact with them. Merchants can put themselves on a fast track for a successful 2020 and build deeper relationships with customers if they tap into higher-quality data via improved analytics.

- **Deeper application of emerging technologies to thwart bad actors**

The battle to protect data and prevent fraud will grow exponentially in the next decade. Fraudsters are operating with sophistication that couldn't be

conceived a decade ago. And the resources they are investing in to exploit security gaps in new, cross-platform innovations bring more potential threats to commerce. Fraud prevention supported by technologies (like AI and machine learning) that thwart our adversaries on the dark web will remain critical to moving our industry forward.

- **Comprehensive tokenization and encryption across the commerce lifecycle**

These fundamental security processes gained popularity over the last decade and are worthy of increased concentration as we enter 2020. Today's commerce is fueled by card-not-present transactions, creating an even greater need to ensure that sensitive data is replaced with unique identification symbols, giving payment and personal information a layer of protection at every processing stage. New innovations such as the Internet of Things (IoT) will accelerate the implementation of tokenization and encryption, and new security technology will be in high demand over the next several years.

The last decade showed us how fast certain innovations can dramatically transform an industry. We shouldn't expect anything less in the next decade – in fact, the bar is now set higher as the pace of technological advancement continues to accelerate. Online marketplaces, B2C subscription services and on-demand platforms will continue to drive the growth of digital commerce. Now it is incumbent on FinTechs, above all else, to put the customer at the center of those interactions. Ensuring a simple, secure and connected consumer experience will drive industry innovations in 2020 and beyond.

Here's to an exciting decade ahead!

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fiserv.

MATT WILCOX

*SVP, Client Engagement,
Electronic Payments*

Speed And Intuitive **Engagement**

When money moves the way consumers expect, they don't think about it.

But when their expectations aren't met, it can turn their day upside down and push them toward better experiences elsewhere.

In the coming year, financial institutions will face the dual challenges of meeting those evolving consumer expectations while grappling with the complexities of a shifting digital payments environment.

Financial institutions have been on a digital journey for more than a decade. The next, even more significant step on that journey is in payments.

But how can banks and credit unions keep up when the bar keeps rising for digital payments? How can institutions meet consumer expectations that evolve with each new experience in the market?

This year, expect financial institutions to seek the answers to those questions

by focusing on three areas of digital payments:

Faster Payments

If consumers can get diapers delivered to their doorstep the day they order them, it's hard to justify not being able to move money the same day. Enabling faster money movement is becoming a major differentiator in the market.

According to [Expectations & Experiences: Consumer Payments](#), 50 percent of consumers consider "real time" in financial transactions to mean "immediately."

That's one reason to expect continued investments in faster payments. But there's another: Real-time payments are a requirement for Zelle®, which has become a ubiquitous person-to-person (P2P) payments player for financial institutions.

That real-time requirement is going to be a significant component of moving the industry deeper into the faster payments space. Further, while

Zelle has given financial institutions a push toward real time that they haven't gotten elsewhere, it also has opened the door to other possibilities in payments.

Financial institutions are thinking beyond P2P to consider all the benefits of taking a more holistic approach to real-time money movement. As it turns out, there's more to faster payments than just splitting the check.

Smarter Payments

Financial institutions probably know more about consumers than anyone other than their doctor or spouse. But traditionally, FIs haven't used all the transactional data at their disposal, such as payment tendencies, billing history and due dates. That will continue to change this year, as financial institutions seek to better understand consumers and optimize experiences for them.

Say a consumer has set up alerts for when an AT&T bill payment is due, and she gets the alert while at the mall.

Instead of using her smartphone to pay the bill as usual, she chooses to pay at a nearby AT&T store. An intelligent system realizes the bill has been paid and stops the alerts immediately. It also learns from that activity, using the interaction to update the consumer's information and give guidance for future actions.

If financial institutions are looking at faster payments, they're also looking at intelligent payments. It's about choice and control as opposed to what can be a rigid system.

The focus should be on providing a mobile, data-rich environment that offers consumers the information they need from a financial wellness perspective. That includes alerts, payment history and any other information that enables smarter decisions.

More Efficient Payments

Financial institutions of all sizes are beginning to look around and say, "Wow, there's a lot going on in

payments. I need to harness that." But it's not as simple as snapping your fingers and making it so.

And it's not as simple as focusing strictly on the payment. An enhanced consumer experience relies on integration around the payment – and for many financial institutions, that means infrastructure modernization on the back end.

That could include payment hub technology, which enables the management of all payment types on a single platform and offers the potential for better risk analysis, faster settlement, lower routing costs and a real-time view of transactions. Without modernization, delivering the ideal consumer experience becomes more difficult.

Innovation and modernization will need to go hand in hand with a long-term payments strategy. And institutions of all sizes need to plan ahead.

Finding the right strategy, though, will continue to be a challenge for financial institutions. With so many digital payment options in the market, it can be confusing.

Institutions are still deciding where the different payment rails fit together or compete. This year, expect those options to clear up as use cases crystallize and specialization takes shape.

The Evolution of Payments

Meeting consumer expectations in digital payments can be as daunting as it is exciting. People want speed, intuitive engagement and efficiency. More than anything, though, they just want to make their payment and move on. The measure of success in an evolving digital payments space is providing a service that meets consumers' expectations so seamlessly that they don't even notice it's there.



PRASHANT FULORIA

Chief Operating Officer

Ask For Permission, Not Forgiveness

Some things that are important and should be carried into the next decade include:

Relevance and Context

Going through the invoices that you have issued to your customers but haven't been paid against yet? Trying to make an equipment purchase? These are the kinds of contexts that can inform convenient, yet responsible, credit decisions. It is more work to integrate credit within the relevant business system or workflow, but worthwhile from a customer perspective.

Investments in Data

Everything goes through cycles and, in FinTech today, we are seeing a strong fascination with data and artificial intelligence (AI). It is entirely possible that, when the economy turns (when and not if), everyone will abandon their investments in data (to the extent they have made them) and go back to the "same old, same old." We believe a data-driven approach to

credit (and other financial services) is not something that can or should be turned on and off. These are long-term investments in the future.

Customer-First Approach

FinTech usually involves a number of stakeholders: financial institutions, regulators, distribution partners and so on. But the most important stakeholder has been (and will continue to be) the end customer. First and foremost, the focus on delivering a better end-to-end experience to the customer is key. When I use the term "experience," that does not refer to only the digital experience (the pixels on the screen) but the entire experience, including the financial product the customer uses.

Some things that we are better off leaving behind:

Disregard for Regulation

The success of some companies in other verticals that ask for forgiveness and not permission can lead FinTechs into thinking regulation does not

matter. The fact is that regulation exists for a purpose, usually to protect customers. A better strategy for FinTech firms is to understand the underlying objectives. Rather than feigning ignorance, we believe it is better to enter into a dialogue with regulators about how changes in technology and customer behavior may require certain regulations to be revisited and changed.

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Fraud-Driven Innovation



DAVID BARNHARDT

EVP of Product

Identity authentication is speeding up, and so are consumer expectations. The biggest opportunity and challenge – eliminating friction and beating fraud – will also be the biggest driver of innovation. The payments industry, along with retailers and other businesses, has made some progress over the past couple of years. But we can expect to see a dramatic acceleration in the years to come, including in the areas of biometrics, more robust data sets, real-time authentication and frictionless payments.

The Push for Biometrics

Over the next decade, biometrics as an authenticator will become more and more ingrained into everyday transactions. What has evolved as a fast and simple way to access your mobile device is now becoming a key validator of identity. As biometrics become more socially acceptable – whether it's in different use cases (e.g.,

used at point-of-sale or for eCommerce purchases) or the types of biometrics (e.g., face scan, iris scan, etc.) – its use as a validation tool will increase. Meanwhile, the use of passwords will likely decline, as they're easier to steal or bypass. Biometrics will also be key to enhancing identity automation.

More Robust Data Sets

Access to different types of data – including non-traditional data, such as social, email and phone – has helped strengthen identity proofing in recent years. Looking ahead, to reduce fraud and friction, businesses will need to make use of these robust traditional and non-traditional data sets. To be effective, they'll also need to use these tools on an ongoing basis, running behind the scenes. As new account fraud and account takeover schemes evolve over time, it will be critical to use identity proofing, via more robust data sets, at every touchpoint throughout the consumer lifecycle.

Real-time Payments With Less Friction

As advancements in biometrics are coupled with real-time access to more robust data sets, real-time payments with less friction will continue to be a top priority. As we enter 2020, the movement of money will get faster and less friction will be introduced. Fraud, as a result of more biometric verification and better data, will also be less of an issue on these channels.

Enhancements to eCommerce

The result of the above trends will also enhance the eCommerce experience. With less friction and faster, easier ways to verify a consumer's identity, purchases can be significantly streamlined. With swipe-based or biometric-based payments, real-time verification for more types of purchases will become a reality.

Fraud Migration and Evolution

A challenge to these developments, as with any new technology, will be fortifying fraud blind spots. As more established payment channels become better protected, fraud tends to migrate to newer, less secure areas. Fraud also tends to evolve, developing more sophisticated ways to steal identities or take over devices. Anything that's newly introduced to the marketplace will be tested by fraudsters looking for loopholes.

It will be up to businesses to get rid of single-point solutions and the silos that exist in identity verification to ensure security and speed. Doing this will help usher in a new wave of frictionless, safer payment options.

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An End To The **Real Time Payments Drought**



DREW EDWARDS

CEO

Japan was the first country to launch a national real-time payments system ... in the 1970s. Since then, the rest of the world has been playing catch-up. Over the last decade, those efforts have accelerated in places like the United Kingdom and Asia-Pacific.

In the United States, our national payments system has continued to languish, despite repeated explorations and initiatives to jump-start it. But consumers and companies have begun to press. The reality is they won't wait – they're impatient and want real-time payments now.

Those desires are well-documented. A 2018 survey by the Aite Group found that 65 percent of U.S. consumers said instant payments are important. According to a just-released PYMNTS Disbursements Satisfaction Index, the call for real-time payments is growing even more urgent, with 74 percent now demanding immediately available, safe-to-spend payments and 73 percent

wanting choice in disbursement options.

Most companies today have remained tone-deaf. In its survey of executives, Forrester Consulting found that 93 percent of companies still pay customers with paper checks and ACH, despite overwhelming consumer demand and most companies' inherent desire to embrace digital payments for satisfaction and bottom-line gains.

Fortunately, the days of paper checks and ACH are nearing an end. Soon, the idea of setting up an ACH transfer or heading to the bank to make a paper check deposit will seem antiquated.

Real-time disbursements have quietly arrived, and will become the single most in-demand payment technology over the coming decade. Powered by push payments and delivered by private enterprise as an answer to consumer demands, this capability has steadily been making inroads for select use cases.

This is especially true for business-to-consumer (B2C) disbursements. As an industry, we are on the cusp of this capability shifting from a competitive differentiation for early adopters to a table-stakes offering across multiple industries.

Today, sectors like insurance, lending and gig economy are leading this transition. These early adopters make sense as use cases for borrowers needing funds or homeowners awaiting an insurance payout, who need payments to arrive with urgency. Similarly, the very nature of gig economy employment holds a sense of immediacy that carries through to payment.

As a result, companies like Marcus, LendUp, Uber, Safelite Auto Solutions and many others have begun embracing push payments. In return, they are seeing improvements in

customer satisfaction ratings, lowered operational costs, streamlined back-office functionality and even new revenue-earning lines of business.

These benefits cannot remain secret for much longer, and will create demand in adjacent industries. Already, pioneers in arenas like merchant settlement and treasury bank operations have begun to deploy push payment and instant money solutions.

As the calendar year 2019 closes and we emerge on the threshold of a new decade, it will be widely accepted that real-time payments have arrived in the U.S. through the back door – and that businesses must now adopt or get left behind. When that rush begins in earnest, the country will become a pioneer not for its state-sponsored real-time network, but rather its private enterprise system of push payments.

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BRAD WISKIRCHEN

CEO

A Look At The Past And Future Of **Fraud Prevention**

Digital fraud is rapidly growing and evolving. It's something we have observed since Kount's inception in 2007, and I am sure we will continue to see it into the 2020s. It is essential for fraud prevention solutions to not only keep up, but to proactively stay ahead of new threats.

The 2010s brought valuable innovations in digital commerce. The first iPhone came out in 2007, and widespread adoption of smartphones is still a recent memory. Mobile commerce advanced in the 2010s, introducing new revenue channels, but expanded fraud risk along with it. Data breaches became increasingly prevalent over the past 10 years, exposing more consumer payment information than ever before.

It is increasingly critical that fraud prevention is not overly reliant on any one tactic. One-dimensional solutions cannot solve the complex business needs of today's digital risk

management, and should be left behind in the 2010s.

It's easy to prevent fraud: Simply stop accepting digital orders. But fighting fraud is a multifaceted endeavor, and the best place to begin is at the very first interaction, not at the order form. In the 2020s, businesses will need a more complete understanding of their consumers at every point in their journey. Behavioral analysis and emerging technologies will be at the forefront of these innovations over the next decade. Yet, as technology evolves and consumers expect faster, seamless interactions, there will be even less tolerance for friction, and the user experience will become more competitive.

Thus, the 2020s should bring an adjustment from a siloed approach to risk management across the payments ecosystem to a collaborative approach in order to drive better customer engagement. There is likely to be increased collaboration between payment processors, acquiring banks,

issuing banks and fraud control providers. There are clues in every interaction about the trustworthiness of a potential customer.

If the next decade is anything like the last, the innovations to come are boundless, making it essential for fraud prevention solutions to protect digital innovations and enable businesses to grow.

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A New Frontier For Payments



RYAN LEE

Chief Product Officer

This year will serve as a foundation for a new frontier in payments that will usher in a torrent of innovation, from PSD2 and open banking to the influx of FinTech startups spinning up around the world at a dizzying pace. It's the time to be in payments—especially with secure remote commerce on the horizon and set to disrupt the eCommerce scene, like Apple Pay and tokenization disrupted the payments ecosystem just a few years back.

Innovation is all about experimentation, and there were key innovations in payments that didn't quite take hold, but were critical in serving as a springboard for new platforms, perspectives and approaches. Let's take it by the decade:

1990s: Mobile phone bill payments were introduced in the late 90s, notably by Coca-Cola through vending machine SMS payments. Although mobile network operators were thought to usher in a new era of payments, there was some reticence from consumers

to trust them to bill appropriately. Back then, the complication of commingling purchases with service usage and fees likely suppressed adoption. It was quite difficult to decode mobile phone bills, let alone understand the bevy of fees. However, the ease of paying with a simple text message was very compelling.

Current Application: Venmo found the optimal formula for peer-to-peer payments with mobile.

2000s: Virtual currencies and micropayments took gaming and mobile apps by storm in the 2000s (an example of this is PlaySpan). With the proliferation of mobile app networks, it became a profitable way for developers to monetize their creations.

Current Application: Both mobile and desktop app stores quickly moved into this space, with games and apps alike embracing in-app purchase monetization, ushering in the era of micro-transactions.

2010s: Final, an electronic card that generated a network token for each use, served as an early experiment in rendering card data useless. While Final did not take hold, it was a compelling way to reduce the burden of PCI-scoped data. Devaluing card numbers through single-use tokens put pressure on the relatively limited bin inventory.

Future Application: Payment networks will embrace support for alpha-numeric tokens that will exponentially expand our bin inventory and render card data useless.

Looking Ahead

The payments world isn't done changing and growing. While the backbone of the industry still lies on legacy infrastructure, the future

of payments is filled with new technologies like tokens, artificial intelligence, machine learning and real-time payments. Some innovations I anticipate for the decade of 2020 include:

Single-Use Plus Plus

As they said in my day, the future's so bright ... I believe within this decade, we will get to near-zero card-not-present fraud. Drafting off the success of Final, all transactions will be single-use tokens – and in addition, they will have accompanying cryptograms scoped to a single merchant.

Fraud Enhanced Through Automation and Pattern Recognition

Furthermore, with the ecosystem embracing artificial intelligence (AI) and

machine learning (ML), new players will enter the market to offer advanced threat detection, with hooks into fraud engines to reprogram detection on the fly. This will be very much like antivirus software that is updated daily as threats evolve.

Expanded Mobile Payments and Loyalty

Starbucks cracked the code to great effect in its blending of a mobile app and in-store experience. As merchants leverage new players that enter the Loyalty as a Service, Payments as a Service and Fintech as a Service space, consumer behavior will evolve. According to eMarketer, Starbucks is the mobile payments leader as a single merchant, trailed by Apple Pay across all retailers worldwide.

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motus

CRAIG POWELL
CEO

Key Technologies In The Decade Ahead

Expense management and employee reimbursement have come a long way over the past 10 years, mirroring the hockey stick trajectory of the internet and SaaS solutions. As spreadsheets, paper forms and manual calculations give way to digital tracking and automation, the companies adopting these new technologies are gaining an edge over their competition.

Though perhaps under-appreciated by those outside of finance, there are several business aspects that can be dramatically improved with digital expense and reimbursement practices. Reduction of processing costs and increased visibility and control over T&E spending are two that are easily identified and directly impact the bottom line. Compliance is another growing concern. As labor laws grow increasingly complex and as companies scale to tens, hundreds or thousands of employees, maintaining compliance with national and regional laws as well as internal company policies regarding expenses is a

complicated task – one that is prime for digital disruption.

From a workforce standpoint, productivity and job satisfaction are heavily impacted by eliminating manual and paper processes. Not only does this mean technology investments pay off in an increased output from the existing workforce, but also that businesses are able to retain a happier staff in a competitive job market.

With these considerations in mind, here are three key technologies organizations should deploy for expense management and reimbursement, and how they will set businesses up for success in 2020 and beyond.

Mobile-Friendly Workplace and Apps

The proliferation of connectivity and mobile devices has led to fewer and fewer people working in the traditional 9-to-5 desk job. In fact, as of 2018, mobile has surpassed desktop as the primary way to access the internet.

Today, 71 percent of people spend over two hours a week accessing company information on mobile devices.

This ability to “work from anywhere” is both a blessing and a burden. While productivity goes up when people aren’t tied to their desks, reimbursement for travel and job-related expenses (separate from personal expenses) gets more complex. Fortunately, the same technology that is causing the problem can help ameliorate it. Mobile devices and location technology can improve accuracy and streamline tracking and reporting processes – particularly when it comes to tracking mileage and other expenses. They can also help reduce costs altogether with apps that provide route optimization and other cost-saving functionality for mobile workers.

Cloud Connectivity and Scale

In the same vein as mobile, cloud technology offers greater connectivity and engagement with mobile workers. However, while most businesses today

are deploying cloud computing in some capacity, many have not yet fully applied that investment to expenses and reimbursement.

Several SaaS-based expense reimbursement solutions are available and in use, but organizations should also take advantage of interconnectivity between reimbursement-related platforms to streamline the end-to-end tracking, filing, calculating and dispensing of payments. Executing these operations in the cloud reduces administrative overhead, and also has the potential to augment security and privacy practices when done correctly. Cloud computing also allows for data analytics at scale.

Big Data and AI-Driven Innovation

The vast amounts of new data coming in through mobile and cloud deployments are beginning to pay off in the form of innovative solutions enabled by AI and machine learning. Continuously improving algorithms enable managers to better predict

expenses and plan ahead. In turn, businesses can leverage pay-ahead options like fuel cards, which reduce overall spending while allowing employees to keep more money in their pockets in the short term. Businesses can also use AI to understand trends, which can be used to implement greater controls for fraud detection and other cost-saving measures.

With the vast amount of opportunities for disruption and innovation in the digital age, implementing these core technologies will be critical for businesses’ long-term success and survival. The competitive edge gained by organizations transitioning their expense management and employee reimbursement practices to a SaaS model – from compliance, security, scalability and redundancy to cost and productivity efficiencies – cannot be ignored. Companies that are not leveraging SaaS and don’t plan to in the future will struggle to compete with the firms that have made the migration.

THE 2019 BRIDGE TO 2020



ANABEL PEREZ
CEO and Co-founder

Forget The Spaghetti – Bring The APIs

As we look ahead at the fast-approaching 2020s, and as the '10s start to fade in the rear-view mirror, there are definitely some things pursued in the name of innovation that I wouldn't mind leaving on the side of the road, and others I consider worthy of a seat in the car as we move toward the future.

Leave It Behind

First and foremost, let's drop what some people affectionately call "spaghetti tech" or "spaghetti systems." If the phrase conjures up images of jumbled data cables and diagrams so unstructured and dense that they resemble a plate of pasta, you've got the idea. I'm referring, of course, to the practice of weaving together legacy systems and new technology in such a way that almost certainly handcuffs your next move. It's a practice that didn't start in this decade, but somehow persisted. There are cleaner, better ways of leveraging legacy systems, so let's forget the spaghetti.

The next drop-off is for tech silos – that practice of allowing different business units to create their own tech estates or realms, spending and building and locking up data and capabilities, so it's practically untransferable to the rest of the organization without a monumental investment of time and expense.

It's the kind of thing that was famously put to an end at Amazon by Jeff Bezos via a now-famous memo that started with, "All teams will henceforth expose their data and functionality through service interfaces," and ended with, "Anyone who doesn't do this will be fired. Thank you; have a nice day!" Sadly, many teams in this decade chose not to follow his example.

Next, we have superficial innovation, the practice of making awesome front-ends with not enough regard for the importance of the layers underneath or the road ahead. Of course, everyone loves a cool interface, and I'm no exception. But as we go into the next decade, let's invest more in some of

the beauty that is the middle layer and orchestration.

Bring it Forward

Which brings me to the things I think we should all bring forward, and chief among them is orchestration. What a difference this capability makes when it's time to innovate. Having configurable platforms with the ability to digitally coordinate a range of interconnected systems – and to move money and data from point A to Z – does for digital transformation what grease probably did for the industrial age. That one is a keeper.

Next is open banking – or, more specifically, collaboration via APIs,

which is at its very heart. FinServ has embraced this approach in this decade like none other before it. It is probably best embodied by modern Banking as a Service (BaaS) platforms, which today can make even a modest community bank look like a Silicon Valley whiz kid, in terms of the convenience and speed it can offer its end customers and partners. This one definitely gets a window seat.

It's been an interesting decade for payments, commerce and retail innovators, and I'm sure the trip ahead won't disappoint. But, like any journey, we should be thoughtful about what we pack and who's along for the ride.

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JUSTIN FERRABEE

Chief Operating Officer

The Rise Of **Technology** And **Challenges** That Come With It

Over the last decade, the payments industry has experienced unprecedented change. New technologies and innovations – including the rise of mobile apps, FinTechs, cloud-based platforms and blockchain technology – are completely transforming the face of payments and bringing tangible benefits to Canadian businesses and consumers.

New opportunities bring new challenges and, as we continue to innovate, we learn new and improved methods for delivering value through payments. As the industry moves toward a future of instant, open, data-rich and low-cost payments, it's time to leave behind those things holding progress back, including proprietary applications, the exploitation of consumer data and unnecessary friction in payments. We also need to focus on building a foundation for the future with improved interoperability, protected data and frictionless payments – one that is supported by ISO 20022, a global and open payments

messaging standard that allows rich data to flow with electronic payments.

Consider the internet: In the early 1990s, internet providers delivered isolated, paid access to services with no integration to those other providers. The technology transformed the way we communicated in many positive ways, but it quickly became apparent that we wanted integration and transparency in online activities – and the same is true for payments today. We've learned that proprietary applications around payments don't work, just as they didn't with the internet. It's time to move away from walled gardens in the payments space, and to improve access to – and integration between – systems, technologies and jurisdictions.

Equally as important, we must leave behind the exploitation of consumer data, and shift the ownership of that data back into the hands of consumers. The last 10 years saw countless headlines citing data breaches and growing concerns that consumers'

financial and personal data was being monetized to the benefit of corporations. As we look ahead, we need to put consumers in control of their own information, and provide the right rules, tools and resources to keep it safe.

We also need to leave behind unnecessary friction in the payments process. By reducing the amount of data entry required to complete a transaction, businesses can improve the customer experience, reduce shopping cart abandonment and increase revenues. By leveraging data from our devices, apps and websites, buying opportunities can be simply and seamlessly integrated into our everyday lives.

The answer is ISO 20022.

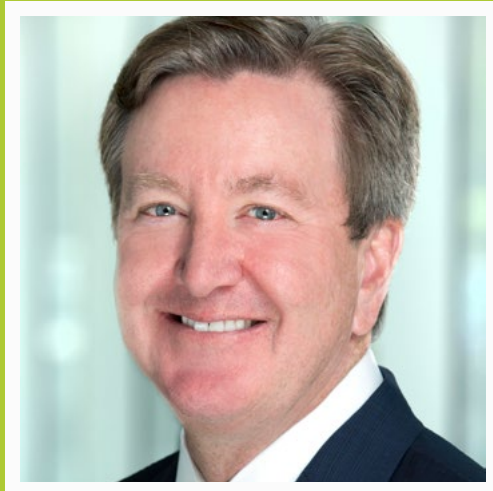
Using this global standard will increase domestic and cross-border settlement efficiency, simplify cross-border

payments processing and ensure alignment with international standards.

At the consumer level, ISO 20022 will support open banking, which will provide consumers with the ability to make choices about how their data is used. It will also allow them to access and share financial information simply and safely with third parties, such as credit bureaus, accountants and financial advisors. Open banking supported by ISO 20022 also enables consumers to use financial management apps more efficiently and with less risk. Ultimately, ISO 20022 contributes to greater transparency and financial literacy for the end consumer.

For businesses, a faster, safer and more data-rich payments system will reduce operational inefficiencies, including manual handling of account receivables and payables. In turn, ISO 20022 will help lower costs while boosting bottom-line returns over time.

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TOM GANDRE

EVP, Chief Operating Officer

Elevating The Total **Member Experience** In The Digital Age

For years, the payments industry has focused on delivering value through rewards programs and competitive card products. But the tide has shifted to an emphasis on enhancing and improving the consumer payments user experience, from point-of-sale transactions to online purchases and everything in between. For credit unions and credit union service organizations (CUSOs), focus in the years to come will be on innovations that drive efficiencies, security and faster money movement in a landscape that will become overwhelmingly digital.

Holistic Authentication

Authentication can help credit unions and banks meet this consumer need and ensure more secure transactions. Thanks to a marked shift away from in-store card fraud to card-not-present transactions that can lead to account takeover, it is more difficult than ever before to authenticate the user at the point of purchase, making authentication more important and more challenging.

Exploring biometrics and other new authentication and artificial intelligence (AI) technologies is a valuable exercise to ensure the protection of consumers as well as a financial institution's own brand and assets. It is also an opportunity to explore partnerships with organizations that have a strong focus on authentication and that leverage their investments and learnings in the field.

Credit unions should introduce continuing education initiatives to their members to explain how and why the traditional means of authentication are no longer enough to protect account and personal information. For example, consumers might still have to answer a pre-established security question to access their account, but they might also receive a confirmation code via text message to verify their identity. The more informed members are about changes in security and expectations for their day-to-day account activities and how their credit union is working to keep their information protected, the

more seamless the experience will be for both parties.

Back-Office Modernization

When it comes to delivering increased efficiencies, credit unions should consider innovations in back-office automation. Investments in this area allow credit unions to reinvest human resources in enhancing the engagement experience for members. Back-office automation can include the contact center, where AI executions such as chatbots can both reduce human intervention and enhance the member experience. Most consumers today prefer the option of self-serve rather than speaking with a human. State-of-the-art contact centers enable credit unions to meet members' needs without them ever stepping foot in a branch.

Fraud and Security

According to PSCU's study, 13 percent of credit union members have been victims of card fraud, and 4 percent have had their identity stolen in the last year alone. Similarly, 11 percent of non-credit union members were victims of card fraud, and 4 percent had their identities stolen during the same time period. Fraud and security will continue to take a leading role as credit unions search for innovative ways to fight emerging fraud threats and increasingly sophisticated fraudsters.

Credit unions can no longer afford to monitor a single channel to stop fraud in today's digital and interconnected world. A seemingly endless list of well-publicized data breaches proves this point. When breaches of this magnitude occur, it is not enough to simply monitor for traditional card fraud

– credit unions must also find ways to combat the entire account takeover, both online and via contact centers, among other channels. Linking these channels together – from in-person to phone calls and online activity – is the only way to efficiently stop fraudsters before they have the chance to attack.

Moving forward, data and analytics will become increasingly important when it comes to thwarting fraudsters, which in turn safeguards the member experience and the credit union's assets. Learnings gathered by data and analytics tools enable financial institutions to deliver the right products to consumers at the right time, positioning them for maximum success in their financial lives. Delivering more robust analytics for predictive modeling – as well as a continued investment in and

deployment of multi-layered fraud mitigation tools – will help fight fraud and identify spending trends.

Faster Payments

The evolution of payments is occurring at a rapid pace, creating the need for industry collaboration to provide a system that delivers safety, security and flexibility to accommodate the future of real-time payments. Consumers today have been conditioned to expect fast delivery of goods and services. "Faster money" services have emerged to satisfy the need for speed among millennials, and anyone else who no longer wants to wait. The opportunity in this area lies in looking holistically across the payments landscape at what major players are doing in the space. Government entities, for example, are using faster payments solutions

to distribute funds, and ridesharing services are using similar solutions to provide their drivers with more real-time access to payments. How can credit unions be a part of those solutions?

The expectations of members across the board are universally similar. Payments systems must deliver instant, on-demand and seamless transactions. While legacy systems will take years to convert to today's expectations, the ultimate goal is to move toward real-time payments systems. This is the new expectation of consumers in today's always-on, interconnected world. By understanding member pain points, designing new product solutions and looking to a

future where real-time payments meet unidentified needs, credit unions can succeed.

The total experience surrounding card usage and consumers' interactions with their financial institutions is paramount. Credit unions, banks and other providers would be remiss to ignore the influence consumers' needs and experiences have on their payments decisions and usage. Focusing on innovations that enable credit unions to deliver the experiences their members have come to know and expect from trusted financial institutions will carry us into 2020 and beyond.

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RICHARD F. FELDMANN

*Head of Global Financial
Services Strategy & Alliances*

The Transition Of The Global Payments Landscape

The global payments landscape is in transition. Trends include the adoption of open application programming interfaces (APIs), an increase in digital payments, new solutions for cross-border payments and growing competition from new FinTechs and alternative service providers. These developments are challenging incumbents to quickly create and deploy new, differentiated services to take advantage of opportunities in the global payments business, or risk losing out to nimbler competitors.

There are two primary technology challenges facing organizations competing in the payments arena today:

- **What do established payments players do with their existing payment systems (that are used by most of the world)? How do they retool to play in the new landscape?**

Established players must retool their organizations to compete in a dynamic marketplace and take advantage of new technologies, including APIs, containers and cloud infrastructure.

- **How do new or established players build new payment platforms from the ground up with all the features, capabilities and flexibility required for an increasingly dynamic marketplace?**

To provide new services in a way that can be monetized requires a deep understanding of customers. This understanding is fueled by today's fast-evolving machine learning (ML) and artificial intelligence (AI) technologies, along with capabilities to easily connect with other value-added partners, services and platforms. Organizations have moved from manual intervention in the payments supply chain to rules-based processing – and will soon shift to AI-based processing, which will require new levels of computing and storage capabilities.

Why Constant Innovation Matters for Payment Companies

As new innovations and players are added to the payments market landscape, both business models and customer expectations are rapidly changing. As a result, related technology decisions are becoming even more critical for continuous business growth.

A Complex Payments Landscape

Organizations face a highly complex payments landscape. They need to build simpler, more adaptable architectures to become more responsive to change while reducing technical debt. As a result, leaders are

relying on open-source technology to power innovation in their new payments platforms.

How Open Source Improves Innovation

In the past, organizations that used enterprise software would need to wait for software vendors to create extensions, fix bugs and push out updates to their customers. Today, firms are innovating faster, using open-source solutions to make quicker updates, meet changing regulatory requirements and speed up time to market. In this model, organizations are free to enhance open-source solutions to better serve their customers.

THE 2019 BRIDGE TO 2020



TransCard

GREG BLOH
CEO

The Rise Of **Open Banking** Using API

Throughout 2018, open banking and APIs (application program interfaces) made a major splash in the payments space, as well as the financial services industry as a whole. They provided a more customized and transparent approach to banking, which is also extremely adaptable due to easy integration points. Financial institutions are seeing that in order to remain competitive, they must incorporate open banking initiatives to meet the demands of today's tech-savvy consumers.

As we forecast what's ahead for the rest of 2019 and the new decade ahead, open banking and the use of APIs will only further evolve to impact how consumer data is used, mixing and matching technology services to best fit customers' unique needs.

In the payments space as a whole, the limited options for funds disbursement should be left in the past, as we continue to evolve to platforms with more offerings.

Let's digest how we see open banking and APIs transforming the banking and payments industry, and what should be left back in the '10s:

API Acceptance and FinTech Inclusion

One of the biggest draws of open banking through the use of APIs is that it allows financial institutions to incorporate high levels of technology and offerings from an outside source, alleviating the need for exorbitant costs and additional employee headcount. And, more often than not, it requires no internal assistance.

As FinTech providers first began appearing across the industry, financial institutions originally saw them as competitors. However, FIs soon acknowledged there was great opportunity to work alongside FinTechs to enhance their own offerings in a more efficient manner.

APIs will receive full acceptance into open banking initiatives to help institutions easily and effectively

provide top-notch technology offerings to their banking customers.

App Store Approach

Similar to the way Apple and Google have stores to download applications, APIs may soon be published and accessible in the same way. Institutions will be able to select and customize which applications and solutions they want to incorporate into their systems simply by visiting the technology provider's website and browsing the available APIs.

The overall theme and appeal with the app store approach is the ability for institutions to easily access solutions and incorporate them into their technology offerings in a seamless manner, which, in a way, will redefine how tech is integrated into systems.

APIs in Use

One area where we've seen API technology exploding in the financial space is within the payments sector. As various payments trends and offerings emerge, financial institutions are looking for ways to leverage those capabilities to meet customer demands.

For example, let's look at funds disbursement. With the help of APIs, organizations can incorporate payroll options to enable their employees to receive their funds through whatever method best suits their needs. Whether it's through P2P, gift cards, payroll cards or even virtual cards, organizations can allow their employees to receive their income from various secure avenues, and to customize how and when they are paid.

We see this trend gaining traction, especially as the CFPB and other

government bodies are looking to ban payday loans and other predatory loan solutions that ultimately cause increased debt.

Waiting for Pay: A Thing of the Past

Traditionally, funds disbursement was limited to paper checks, which were not only time-consuming in terms of cutting the check and waiting for it to clear, but also incurred the costs of purchasing and mailing the checks. This singular method is still used today, and we believe it should be left in the past.

While we do not anticipate the complete demise of the paper check process, we believe there should be multiple options to disburse funds that are faster and more convenient for both payer and payee. Technology is continuing to advance in this area,

to a point where payments are instant and attached to associated workflows, statements and other vital documents, so there is no longer a need to fill a cabinet of documents for taxes and other regulated purposes.

In the remainder of 2019 and the soon approaching '20s, we see funds disbursement moving beyond the traditional paper check, and we see the payments space focusing heavily on technology offerings and how they interact with their customers, whether it is a typical checking or savings account or a business banking partner. Open banking and APIs will only continue to evolve throughout 2019 and for years to come, offering the latest technologies to drive customer happiness and success while also assisting banks, credit unions and other organizations to remain relevant, competitive and profitable.



wirecard

DEIRDRE IVES

CEO & Managing Director

Goodbye, Traditional; **Hello, Choice**

Payment tech needs to pave the way for real-time mobile solutions without leaving consumer options behind.

At Wirecard, when we think of the evolution in payment technology over the next decade, our focus is guided by the consumer experience – focused on bridging the gap between what consumers need to support their changing lifestyles and the technology required to provide it to both merchants and consumers.

Over the last decade, the consumer experience of payments changed dramatically, breaking out of the confines of the checkout counter and the monthly invoice, and beyond cash, check or card. The payment experience now occurs in instant messaging, within peer-to-peer networks, across chat windows, via automated rewards platforms and within social networks – all with the expectation of an instantaneous payment.

Payment channels themselves also expanded beyond the legacy options of cash, checks and plastic to include mobile wallets, in-app accounts, wearables and P2P apps – all of which point to the eventual elimination of the physical plastic card, which is a win from both a safety perspective as well as the elimination of an environmental and operational footprint.

What does so much change mean for businesses struggling to deliver the experience consumers have come to expect over traditional payment rails? For that matter, what does it mean for those traditional rails? As mobile retail, savings, banking, lending and payment apps proliferate, our industry is filling the need for businesses of all types and sizes by providing digital, real-time payment enablement.

A mobile payment solution gives customers and businesses so much more:

Speed and Convenience

The instant gratification of receiving payment with a single click or swipe can easily extend to immediate shopping and increased spend, both in the first transaction and over time, leading to increased brand affinity and loyalty. When the payment is a lending product, immediate delivery can lead to quicker interest generation and deeper engagement with the customer.

Security

Multiple safety features in the payment process, as well as on the phone itself, give mobile payment systems the highest level of security and anti-fraud protection. Additionally, security upgrades take place in the background,

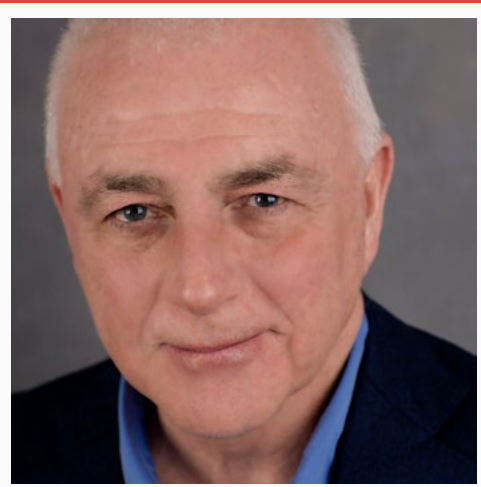
so there's no POS hardware or software to change out and no new mechanism standing between consumers and their purchases.

Efficiency

Partnering with a digital payment provider adds FinTech expertise to industry operations, easing the burdens of administration, compliance, customer service, technology, data collection and data analysis.

No one expects change to happen overnight, and no one wants to take away a consumer's or business' preferred form of payment. As the consumer experience continues to evolve over the next decade, we must be experts in providing choice.

THE 2019 BRIDGE TO 2020



WILL BYRNE

President and CEO

The Next Decade Of **Frictionless Experiences**

The past decade has seen the online store become the norm for many types of consumer purchases, and now the separation between the online and physical stores is beginning to blur. What began as what people called “showrooming” – using smartphones to browse competitive offers and product reviews while in the store – is evolving into a blending of the two worlds, so that the online experience can enhance and merge with the in-store experience. This is enabling the rise of a new kind of unattended, semi-attended and self-service physical retail environment.

This is good for consumers, as they seem to enjoy having the option to serve themselves and only interact with people if that is their preference – this is what people call the “Uber-like” or frictionless experience.

This is particularly true of younger customers – recent research shows that millennials are up to 50 percent more likely to visit a physical store if it has automated retail or automated checkout capability.

At the same time, this technology is becoming a competitive imperative for retail and other businesses, and is changing their overall business model. Automation is reducing in-store costs, particularly in headcount, and the smart kiosk model is increasing average transaction value as well as flexibility, mobile capacity and brand reach. In addition, it is providing added security while reducing overall real estate and related fixed costs. When technology is such a win-win scenario – when it’s good for the business and popular with end users – it’s clear that it will be unstoppable.

This evolution over the last decade has been great for the consumer experience, and it’s only going to get better – after all, consumers are the force behind these changes, and they are driving change at an increased pace. However, delivering a frictionless experience to the end user has not been an easy task for merchants and their suppliers: the integrators, distributors and, particularly, the ISVs. They are struggling to integrate

and support the range of technology needed to provide a frictionless end user experience.

At Worldnet, we see this from the payments side: The evolution from magnetic stripe to EMV, the associated certifications, the rollout of contactless, along with the need for tokenization and an omnichannel approach to analytics, has been a real headache for ISVs to deliver. They often have to deal with multiple acquirers, payment gateways, hardware OEMs and distributors, and they struggle to put it all together in a seamless experience for the merchants.

This is a real challenge for the mid-market players. Online giants like Amazon and others already have

several great advantages as they move into the physical retail space. Obviously, they have the brand, the recognition and the trust that comes with that. But their two other advantages are equally important: For one, they can leverage the consumer identity and profile data on their platform – a huge head-start in delivering an omnichannel experience. Secondly, their approach is to make the physical retail experience as much like the online experience as possible, and this is where they excel with their wealth of experience and knowledge in that space. Plus, they have the right technology to support that initiative.

As we enter the next decade, and as physical retail becomes a more omnichannel consumer experience, an irreversible drive toward a frictionless

payments environment has begun. Challenges will continue to increase for mid-market retail suppliers and providers.

It's becoming an increasingly complex environment. The ISVs are trying to hide complexity and deliver effective solutions to merchants, who in turn want to deliver simplicity to their end users, the consumers. The challenge for the industry at large, and for us at Worldnet Payments in particular, is to provide those end-to-end solutions for every stakeholder. We need to enable the integrated POS solutions for ISVs, deliver the cost and security benefits to the merchants and assure a frictionless experience for the consumer.

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PYMNTS.com is where the best minds and the best content meet on the web to learn about “What’s Next” in payments and commerce. Our interactive platform is reinventing the way in which companies in payments share relevant information about the initiatives that shape the future of this dynamic sector and make news. Our data and analytics team includes economists, data scientists and industry analysts who work with companies to measure and quantify the innovation that is at the cutting edge of this new world.

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