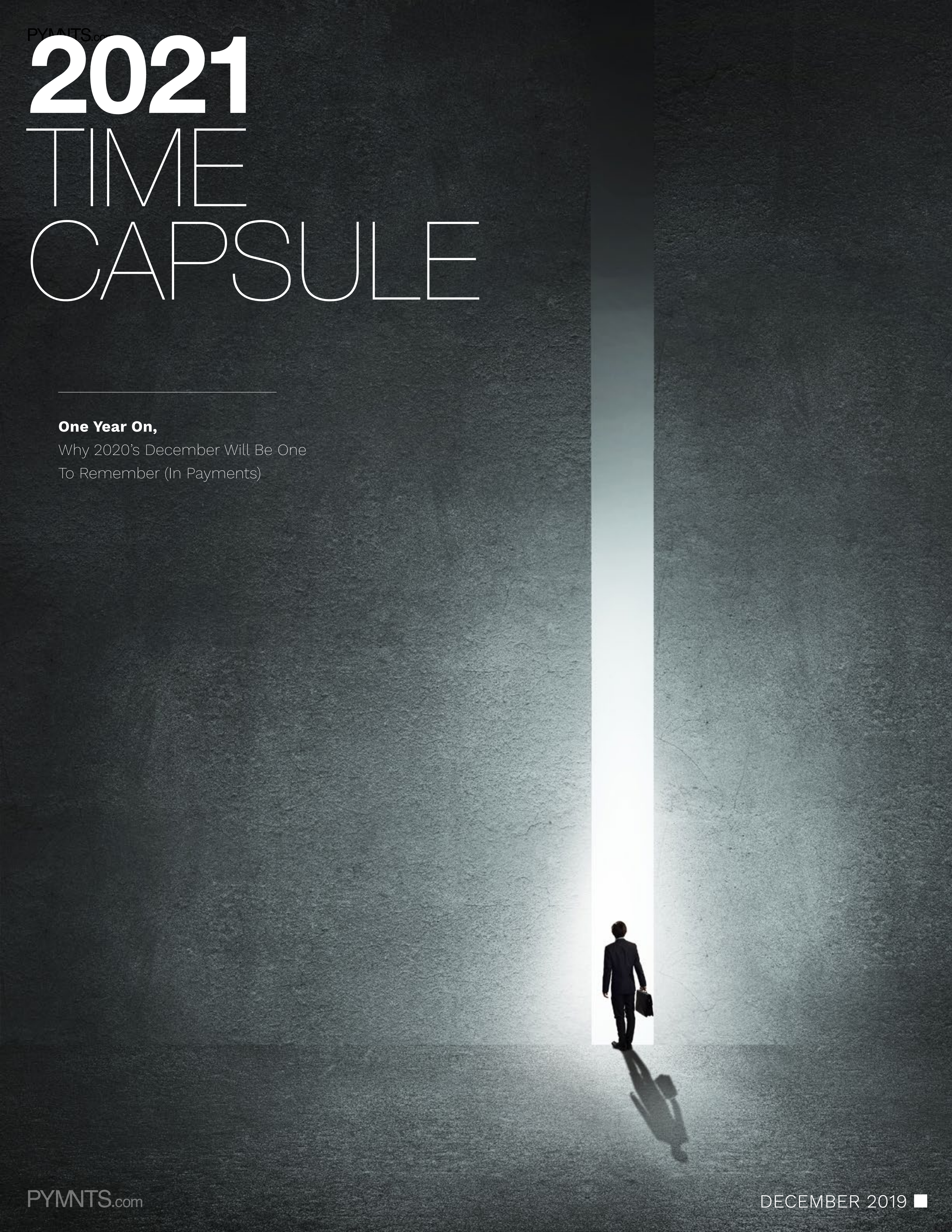

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2021 TIME CAPSULE

One Year On,
Why 2020's December Will Be One To Remember (In Payments)

2021 TIME CAPSULE

TABLE OF CONTENTS

ONE YEAR ON,

WHY 2020'S DECEMBER WILL BE **ONE TO REMEMBER** (IN PAYMENTS)

There's an old saying, ascribed variously to the old proverbs, baseball great Yogi Berra and physicist Niels Bohr:

> **Predictions are difficult, especially when they're about the future.**

Regardless of the source, the sentiment rings true. The farther one looks out over the horizon, the hazier the picture becomes. That's especially true in payments, where technology can lead to seismic shifts in the way we pay, where we pay and even when we pay, as commerce becomes ever global and a 24/7 activity.

Shorten the timeframe a bit, and it gets (just a bit) easier to see what may be rushing toward us – or what we may be rushing toward – in terms of innovation in-store, online and across all manner of channels. One year on, then, by December 2020, it'll be interesting to see where we've been and where we thought we'd be – and what might come next.

In fact, a time capsule sealed today, with a prediction of what Dec. 31, 2020 might show in terms of the top trends impacting payments and commerce 365 days from now, might prove to be prescient, instructive, erroneous or even amusing.

To that end, we asked 30 executives from the payments space for their top predictions of what would come to fruition one year from the day you downloaded this eBook.

The answers were varied to say the least, but some trends remain entrenched, such as the continued transition to device-enabled commerce, and an embrace of marketplace models that make matching buyers and sellers a bit more streamlined. A year from now, the end of 2020 may be marked by a holiday season tied to robust holiday shopping done through mobile means and contactless payments amid a surge of contactless cards issued by banks. Consumers will want – and will receive – flexible payment options, such as installment plans, at the point of sale.

Underpinning it all, according to our seers, is, of course, technology. Customers want real-time payments, subscriptions via streaming offerings and, of course, enhanced security to keep the fraudsters at bay as businesses scale their eCommerce operations across the globe (machine learning pays dividends here).

The evolutions and revolutions will not be tied solely to the consumer side of commerce. As some of our respondents noted, B2B is poised to make further inroads into the digital age, leaving the paper check behind. Through it all, agility matters, especially in the quest to provide frictionless experiences for end users.

Read on to see where the roads may lead us 12 months hence.

2021TIMECAPSULE

A CLOUD-FIRST STRATEGY FOR BANKS

EVE ARETAKIS
Group President, ACI On Demand

The financial industry will undergo significant change as banks come under increasing pressure to evolve their business models to achieve rapid digital transformation — and the cloud will help them get there.

Banks are looking for the scalability, long-term cost savings and flexibility offered by deploying payment solutions on the cloud, and we expect to see the public cloud become an indispensable element of hybrid deployment models (alongside private cloud and on-premise) in 2021.

What's Driving This Move To The Cloud?

Banks are loosening their grip on legacy systems and accepting that the public cloud will help them address some of the biggest challenges in financial services. This is evidenced by the Culture of Innovation Index, published by ACI Worldwide and Ovum, which showed 92 percent of corporate banks are either making significant use of the cloud, or planning to make further investments in 2020 and beyond.

One of the key challenges is increased margin pressure, as banks' traditional revenue sources decline while high legacy IT operating costs remain. Flexibility allows banks to scale up — or down — as required to optimize IT spend. IDC Financial Insights estimates that the biggest global banks are saving $15 billion from cloud adoption, cutting technology infrastructure costs by 25 percent.

Evolving consumer expectations are another factor driving this shift. Consumers have become accustomed to frictionless user experience with companies like Amazon and Uber, and they now expect the same seamless and personalized experience across touchpoints and channels — including their banks. Cloud deployment provides the agility needed to quickly roll out new products and services, freeing up resources for projects that will help a bank offer next-generation experiences to its customers.

Increasing fraud and digital identity theft also play a role in the shift to the cloud, with the rise of real-time payments exposing new cyber threats as fraudsters look to out-innovate the payments industry. Risk-averse banks were initially hesitant about the public cloud, but they are warming to the fact that the big cloud providers can spend more on security in a month than any bank could spend in a decade. Additionally, a bank that employs a cloud-enabled enterprise fraud prevention solution will benefit from shorter iteration cycles and updates to address emerging fraud threats.

The Future Of Banking In The Cloud

Make no mistake, moving to private and public cloud deployment models is not the end goal, but rather a key first step to successful digital transformation. Success will be measured not by simply digitizing services and products, but by modernizing the entire infrastructure to support real-time processes and operations.

Emerging global trends, evolving business models and rapid innovation create a new set of challenges for the world of payments. Banks are banking on the cloud to allow them to deploy new payment services more quickly, ensure faster time to market, improve customer experience and lower costs — all of which are essential to remain relevant in an increasingly competitive market.

HOLIDAY 2020: **MORE INNOVATION AT THE POINT-OF-SALE**

AKASH GARG
Chief Technology Officer and Vice President of Product

By the 2020 holiday season, we will see U.S. shoppers finally begin to embrace mobile payments and contactless cards to pay in-store. We all know that U.S. shoppers are well behind their neighbors in Canada, the U.K. and Australia (and other developed markets) in their use of contactless payments. We believe the time has come in the U.S.

Today, the most innovative and successful merchants are embracing contactless payments to offer great customer experiences.

There are few things happening that are driving this change. U.S. banks have begun issuing contactless cards in big numbers. But more importantly, we believe, consumers are beginning to use tap-to-pay because they want and expect the same fast, convenient digital payment experience in the physical store that they have when using their mobile phone. It's a simple fact that customers are drawn to payment methods that take as little time as possible – shopping on the street should basically feel like one-click checkout online.

Beyond gaining the benefit of speed – which helps both retailers and consumers – merchants are beginning to use contactless payments to engage new customers and retain existing ones. Today, the most innovative and successful merchants are embracing contactless payments to offer great customer experiences. Specifically, we expect merchants to soon expand their offerings to include buy now, pay later at the point of sale via contactless technology. This innovation is at the sweet spot of what today's consumers want – especially millennials and Generation Zers, who expect fast payments that allow them to budget and spend their own money over time.

MARKETPLACE TAX LAWS WILL BECOME THE NORM

AMIT MATHRADAS
President and Chief Operating Officer

By Dec. 31, 2020, the tax collection obligations placed on online marketplaces will become ubiquitous across Europe and the United States. We will see European global tax authorities place further tax collection obligations on marketplace facilitators. In recent years, the failure to reduce the deficits in value-added tax (VAT) and goods and services tax (GST) collection from third-party sellers has led taxing authorities to co-opt major players in online marketplaces into the battle to curb sellers' tax avoidance – particularly on sales into Europe.

A number of European states – the U.K., Germany, France, Italy and others – have already put marketplaces on the hook for missing VAT. Any facilitator who cannot show a clean bill of health on their tax collections will be blocked. By the end of 2020, the European Union (EU) will enforce these same rules across all 28 EU states, putting a huge tax compliance burden on eCommerce sellers and potentially forcing smaller sellers to reconsider the economic benefit of global trade. In reaction to this, we can expect that marketplaces will challenge the VAT compliance records of their third-party sellers in an effort to reduce their tax liabilities.

The EU will also make the major marketplaces the sellers of record on transactions from the U.S., Canada, Australia, China and more. This means tax revenues will be split off from the sellers, and marketplaces will have to declare the sales through their own European VAT returns. This is a complex payment calculation and processing shift, and it's not clear which player in the payments sector will manage this process going into 2021, since many of their systems were built on relatively old technologies.

Closer to home, and in a similar vein, we can expect that marketplace facilitator laws in the U.S. will reach widespread adoption by the end of 2020. Currently, 36 states require online marketplaces to collect and remit sales tax on behalf of third-party sellers, and several other states have proposed legislation that will go into effect in 2020 if approved. Similar to the pushback in the EU, marketplaces are already challenging assessments for marketplace sales tax and will continue to do so throughout 2020.

Marketplace laws will dominate the tax headlines throughout 2020 across the U.S. and EU. As these laws gain further momentum, we can expect to see similar adoption beyond the Americas and Europe. Although marketplaces will continue to challenge these new regulations, they will ultimately be forced to adapt their selling models to make way for the new era of marketplace tax laws.

> **Marketplace laws will dominate the tax headlines throughout 2020 across the US and EU.**

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TIME TO **PULL THE PIECES** TOGETHER

AMALIA ALEXANDRU
Senior Product Manager

This particular industry is as sensitive and complex as they come, because we're talking about money. Regardless of whether we look at consumer or commercial payments, sending and receiving money is a fundamental necessity with a tremendous impact on people's lives and businesses' prosperity, making the process very personal.

FinTech tries to find a balance between the modernization of existing systems and services, and mass customer adaptation and utilization. At the end of the day, we all try to build a product that can ease teams' workload while offering security and rapidity in payments.

Consumers have successfully embraced faster payment solutions, like Venmo, for years. Now it's time for businesses to move toward the same goal. If I could predict a solution that would change the payments industry, it would be nothing new. It would be a consolidation of tools aiming to offer standardization for consumer and commercial payments.

For example, we noticed how our clients are looking for solutions that replicate the rapidity of consumer payments. We launched Bento for Business, a B2B payment feature, to fill this need. When we talk about consolidation of tools, the small to medium-sized business (SMB) industry seeks all-inclusive systems that can solve multiple pain points from a single point of reference.

We have built a platform that has capabilities to fulfill growing demands in a fast and secure manner. What we are seeing among our customer base is a blend of desired functionalities, from payments to card controls to expense management and more – an easily buildable, customizable and modularized system used by entire teams.

With this in mind, I'm positive the industry is doing tremendous work in reconciling forecasting, trends and needs. Most of the time, we are working together and inspiring each other to deliver robust solutions for our customers.

Consumers have successfully embraced faster payment solutions, like Venmo, for years. Now it's time for businesses to move toward the same goal.

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DEFINING **CHALLENGES AND OPPORTUNITIES** THAT WILL SHAPE 2020

AJAY GURU, Senior Vice President, Protect Group Leader
NISH MODI, Senior Vice President, Integrate Group Leader
DR. KATHY SNIDER, Senior Vice President, Engage Group Leader

The year 2020 will deliver new challenges and opportunities to financial institutions (FIs) on all fronts. Because CO-OP provides a diverse range of products and services, we are offering 2020 predictions in three pivotal areas.

Fraudsters are becoming masters at imitating consumer behavior. They are able to manipulate and defraud using compromised payment card industry (PCI) and personal identifiable information (PII) data, are replicating consumer behavior through device and IP address emulation, and are constantly evolving their fraud attempts through semi-automated robo-transactions. As a result, current fraud detection solutions that look for well-defined anomalies in data and behavior can quickly lose their effectiveness. Siloed approaches to identity verification and authentication will become less effective in 2020.

Consider also that payments will be more pervasively connected through Internet of Things (IoT) and mobile devices in the year ahead. This will increase the noise within fraud data, making it harder to distinguish real transactions from fraud.

The good news is that going forward, we will see integrated platforms with machine learning and step-up identity verification/authentication capabilities continue to emerge to better connect cyber-assets with fraud detection. These tools will enable FIs to more nimbly and effectively fight fraud, culling the imitated consumer from the real one.

We are also predicting significant advances in password-less authentication solutions, including voice-print and other biometric technologies.

Millennials Will Borrow at Checkout

Currently, there is an uptick in installment lending at the point of sale. This is happening for a number of reasons.

The economy is growing at a healthy pace, with 2 to 3 percent GDP growth expected for 2020. Unemployment is currently at a 50-year low, and the Fed is keeping interest rates low. Cash is available to consumers at more affordable rates than we've seen in recent times, and consumers – including millennials – are taking on more debt as a result.

Even though millennials may not be purchasing high-end cars or homes (just yet), they are spending on such things as travel experiences and expensive fitness equipment, for example. And they value instant gratification.

These factors have merchants, issuers and processors collaborating to provide solutions at the point of sale that allow consumers to obtain loans immediately for large purchases, and to set up recurring payments on their credit cards – a dynamic that presents a huge opportunity for credit unions to both boost card usage and nurture member relationships over time.

Consumer Experiences Will Make or Break Brands

Change in a large, interconnected and interdependent network of players takes time. But consumers want faster, more secure, digitally-enabled payment experiences now. These experiences make their lives easier and will drive innovation and development across all industry leaders in 2020.

The race to the top spot in payments will be won by those who truly understand the consumers they serve. Companies that focus on delivering technology for technology's sake will miss out on important opportunities. Yet payment providers who deliver experiences that are fast, effortless and even pleasant for consumers will succeed in 2020 and beyond. And, as always, integration enablement across systems, applications, products and processes will remain essential to every organization's success.

IN 2020, BUNDLING WILL BENEFIT RETAILERS

ANGUS MCDONALD
CEO and Co-founder

As retail customers increasingly migrate to fully digital experiences and seek added value offerings, 2020 will be the year we will see retailers explore and adopt new business models, like subscriptions and product or service bundles that prioritize lifetime value over single transactions.

Lately, some of the world's leading brands have been issuing statements (or simply dodging rumors) around bundling their services and hardware into a single subscription. Apple, for instance, is known to be considering bundling its TV+ videoon-demand service with its News+ and Music services into one lower-priced subscription. Other brands are looking to add services like insurance and warranty subscriptions to be part of their bundle offered to customers, thus providing them with a holistic experience that creates loyalty and ongoing value.

The strategy behind bundling is simple: It's an attractive way to keep customers in the ecosystem and establish long-term loyalty. Customers of all types seek convenience and expect their favorite brands to offer personalized recommendations that suit their needs, be these needs physical products or add-on services to complete the purchase experience.

As recent PYMNTS research shows, 90.2 percent of customers would buy more products or spend more money if insurance and warranties were available at the point of sale. This research also reveals that most consumers (60.1 percent) prefer purchasing warranties or insurance from the retailers from which they bought products. In short, it's a bundle that enables retailers to benefit from a secondary revenue channel that can renew.

Brands should come up with creative ways to cater to today's customers' ever-changing needs. Providing consumers with a large selection of products and adding into their baskets some add-ons like warranties on top of their regular core product offering will keep customers from sourcing options elsewhere and create a customer experience with multiple points of value.

Retailers of all stripes are starting to discover this: Only 41 percent of consumers are actually offered coverage for high value purchases. Multi-layered product offerings that are delivered seamlessly and create an excellent shopping experience can make all the difference for brands that want to stay ahead of the competition. In the near future, we will see more industries seek out add-ons that amplify the appeal of their existing core offering and create renewing revenue.

> **"Multi-layered product offerings that are delivered seamlessly and create an excellent shopping experience can make all the difference for brands that want to stay ahead of the competition."**

ADVANCED MACHINE LEARNING DELIVERS ON CUSTOMER EXPERIENCE AND MITIGATED ORGANIZATIONAL RISK

YINGLIAN XIE
CEO and Co-founder

As a pioneer in the application of machine learning (ML) to meet the challenges associated with the ever-increasing digitization of our modern world, we have long been advocates for the power of transformational technologies to create a safer, more prosperous financial ecosystem for payment and commerce enterprises and their customers.

When we began, we were nearly alone in this effort. Over the years, more organizations have become ML and artificial intelligence (AI) believers, advocates and adopters. Today, we believe we stand on the cusp of a new era, in which ML and AI will finally transform from discretionary to necessary.

One of the key reasons we believe 2020 will be the year of mainstream ML adoption – even for traditional and heavily regulated industries – is because of the widespread recognition that customer experience is of paramount concern across virtually all industries.

Friction-free experiences for good customers are an absolute necessity for modern business success, yet delivering these experiences without simultaneously incurring additional risk and exposing new vulnerabilities has proven to be a significant challenge. As these industries open their doors to new innovations, the surface area for new fraud attacks widens accordingly.

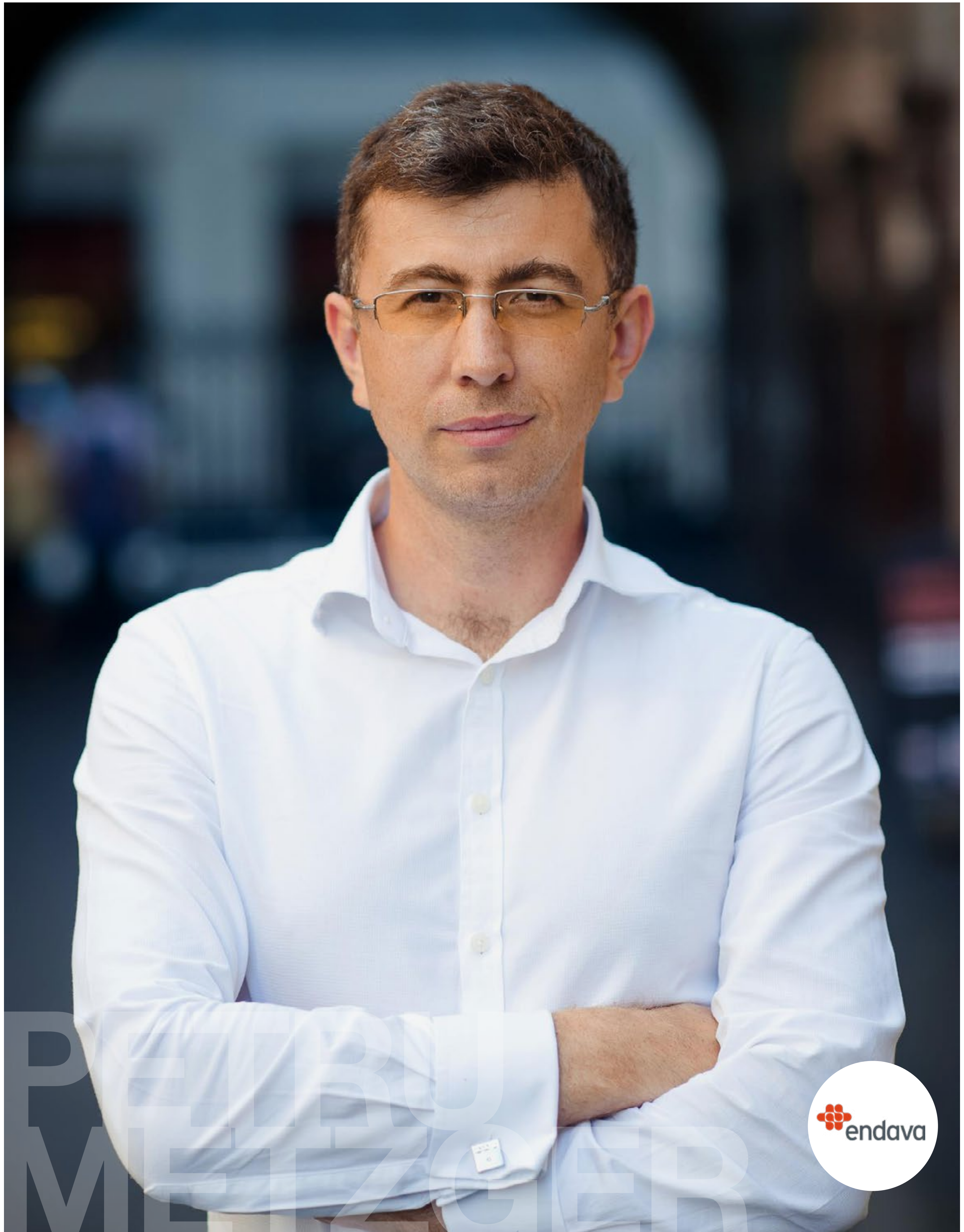
These changes do not happen in a vacuum. Rather, they take place in a world in which large-scale data breaches are increasingly common. As stolen personal information leaks, moves to the dark web to be bought and sold and eventually lands in the hands of bad actors, we see surges in the mass registration of fake and malicious accounts that are, in turn, used in high-sophistication fraud attacks.

Technology itself is a double-edged sword. Both good and bad actors have access to emerging new tools and technologies, and as modern fraudsters grow increasingly skilled at scaling and obscuring their efforts, businesses are challenged to maintain – and, in fact, exceed – a frenzied pace of adaptation and evolution.

ML – and specifically, unsupervised machine learning – affords organizations the power to analyze data holistically at big data scale, which in turn enables early detection that can surface and neutralize malicious attacks before downstream damage can occur. Simultaneously, advanced feature engineering – and clustering and graph analysis capabilities – empowers organizations to increase detection accuracy while significantly reducing false positives.

The world will continue to move toward customer-centric values, such as speed, accessibility and efficiency – and consumers will continue to demand friction-free experiences. Additionally, more and more services and activities will migrate to mobile. A parallel commitment to advanced, proactive fraud management that can match the scale, scope and sophistication of modern digital fraud is a prerequisite for a safe and secure digital commerce ecosystem.

For these reasons and more, we predict that by the end of 2020, advanced ML solutions will have been universally adopted by all payment and commerce enterprises that are committed to successfully balancing customer experience and organizational risk.



WHY **DOWNLOADABLE TERMINALS** WILL BE A KEY DISRUPTOR FOR 2020

PETRU METZGER
Head of Payments Delivery

As the saying goes, people tend to overestimate what can be done in one year, and to underestimate what can be done in five or 10 years. But I will try to come up with one thing that may be a realistic prediction for the next 12 months.

Disruption can come from multiple areas, and we are seeing a lot of focus in payments from the GAFA (Google, Apple, Facebook and Amazon) groups. Google is getting into banking through a partnership with Citi, Amazon is investing in payments and banking, Apple with the Apple Card, and Facebook with Libra.

Because Libra has a lot of impediments from financial institutions (FIs) and regulatory requirements – and big players like Visa, Mastercard, eBay, Stripe and Mercado Pago no longer support the project and have pulled out of the Libra Association – I think next year is too early to see disruptions in this area.

In parallel, there is a lot of work happening in the downloadable terminals world, as phone manufacturing companies aspire to transform phones and tablets into terminals with the goal of increasing sales and stickiness with their clients, and there is an option to upsell other applications for merchants.

There are lots of disruptors in the market aiming to offer free acquiring-as-a-service. Issuing-as-a-service exists (Marqeta), core banking-as-a-service exists (Mambu, Fidor, Thought Machine, etc.), but acquiring-as-a-service is still in the very early stages. There are a few companies in the world that are building it, but it is very new and not validated.

All of these different areas could have a big impact on the payments ecosystem, but I think downloadable terminals will be the one to revolutionize the payments industry and have the biggest impact. We are approaching a tipping point where everyone in the value chain is working on it, and thus, it will accelerate in 2020.

Downloadable terminals are the most in-demand product in card payments at the moment, and there has already been a lot of progress that will allow change to happen. This will also help new players to enter the terminal business, scale extremely quickly, lower their prices and focus more on marketplaces and other revenue streams based on value-added services for industry verticals.

There will be a second step to enable change and high adoption in the market, which is overcoming a psychological block for the cardholder to use their pin on merchants' phones – but in time, the convenience will bypass the fear.

> **"Downloadable terminals are the most in-demand product in card payments at the moment, and there has already been a lot of progress that will allow change to happen."**

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HOW **5G AND IoT** WILL GAIN TRACTION AND SHAKE UP THE PAYMENTS WORLD

JIM JOHNSON
Executive Vice President, Head of FI Payments and Wealth

When looking at the rapid advances in technology coming to fruition in 2020, you can compare it to a new industrial revolution fueled by customer demand.

Consider the launch of the first 3G network in the U.S. in 2002. Consumers were amazed at the "lightning speeds" that allowed them to download a movie in 26 hours, if they were lucky. To the average consumer in 2020, 26 hours may as well be 26 years when it comes to downloads. Just like many new products and technologies, consumer demand helped to drive the birth of 4G – with which you can download that same movie in 3.6 seconds today – and the launch of 5G in the future.

Along with other groundbreaking advances in technology, such as robotic automation, artificial intelligence (AI) and the Internet of Things (IoT), 5G will dramatically shake up the world of payments and commerce in 2020 and beyond. These solutions not only bring their unique benefits to the table, but they also build off each other. This allows early adopters in the space to create a gap between themselves and their competition. In 2020, we will likely see the scale of 5G as the hardware and systems are preparing for the changes, with the full impact to our industry still a few years out.

The rocket-like speeds of 5G will spur an increase in mobile banking, allowing banks and credit unions to offer highly personalized services directly to each customer via their mobile device. This addresses a major shift in how customers want to be engaged – they prefer instant rewards or services from the comfort and convenience of their own home or mobile device, versus visiting an actual bank office or retail building.

This is where the interconnection between technologies comes in. How do companies know exactly what their customers want, when they want it and how they want to receive it? AI and IoT are shifting solutions from being reactive to proactive, which fundamentally changes the standards that underlie expectations for new solutions and the speed at which we will improve on-the-fly decisioning in real time.

In this case, think of AI and IoT as a customer preferences survey, gathering data about what your customer truly wants in real time, and 5G as the delivery service that delivers your personalized catalog of products. Except now, there is no survey for the customer to complete, and they receive customized offers right in their pockets.

The early adopters who are able to capitalize on these new technologies will set themselves up for great success while building a brand committed to delivering excellent solutions to their customers. These are exciting times, and I am eager to see what comes to fruition in 2020 in the payments space.

The early adopters who are able to capitalize on these new technologies will set themselves up for great success while building a brand committed to delivering excellent solutions to their customers.

2021 TIMECAPSULE

PAYMENTS IN 2021: **ONE SIZE FITS NO ONE**

RYAN FRERE
Executive Vice President, Global Payments

For the majority of businesses and organizations in 2021, the payment experience will be one of the most important aspects of the entire customer experience they offer — a core extension of their brand, and an important driver in the decisions customers make about which organizations they do business with and which they don't.

Customers will expect payments to be tailored to the specific product or service they are paying for, the region they live or operate in, the currency they prefer to pay in, and the relationship they may already have with the biller.

To respond to these new demands, organizations (billers) will look to deploy payment solutions that fit with their existing financial systems and business workflows, address the unique regulatory requirements of their business and enable more payment and receivables automation. In some cases, they may also have to support their customers with vertical-specific payment services — whether it's payment-related end-customer support, customer-specific payment plans, cross-border foreign exchange protection, fraud monitoring or more.

In this environment, the days of one-size-fits-all, off-the-shelf payment solutions are essentially over. These types of solutions will work against most organizations' business goals and cost them valuable time, money and customers.

Many forward-thinking billers and banks are already adopting this approach as they look to create stickier payment experiences to differentiate their offerings, avoid commoditization and drive new process efficiencies in both speed and cost. This has led to more payment experiences tailored to specific businesses, industries and regions wherever possible.

At the same time, while demand for payment customization rises, many of these same billers will look to own less and less of the payment process. As the requirements get more demanding, they will look for solutions that can shield them from the complexity and risk of payments so they can focus on their core business.

> **Customers will expect payments to be tailored to the specific product or service they are paying for, the region they live or operate in, the currency they prefer to pay in, and the relationship they may already have with the biller.**

2021 TIMECAPSULE

THE EVOLUTION OF FINTECH REGULATIONS IN 2020

ALLISON WIRTH
Chief Compliance Officer

As the FinTech space continues to boom, the 2020 elections loom and the Lacewell case works its way through the appeals process, I expect we will see a continued push by policymakers in Congress to grapple with regulation of technology companies (FinTechs and others).

However, given the innovative nature of technology companies driving new financial services and the opportunities FinTechs are creating for small businesses, I don't expect this to slow our progress.

New technology-enabled financial services, such as Fundbox's B2B payments and credit network, continue to thrive as more businesses look to accelerate and scale their eCommerce opportunities.

The creative use of artificial intelligence to mitigate financial risk and the ability to access business credit on demand not only provide efficiencies at scale but enable businesses of all sizes to become more competitive on a regional and potentially global scale.

However, FinTechs will continue to grapple with regulations impacting all technology companies, such as increasingly constraining privacy laws, including the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). I anticipate more states proposing laws similar to these, exposing all technology companies — including FinTechs and banks alike — to additional regulatory constraints related to the acceptance, storage, transmission and use of consumer and commercial information.

Also, any increase in the volume and severity of data breaches from 2019 into 2020 should be expected to affect the level of attention that privacy and cybersecurity are given.

Any major, far-reaching breach in the financial sector would likely push legislators to act swiftly.

However, I also expect an increase in available regulatory technology (RegTech) solutions to enable businesses to comply with increasing privacy and cybersecurity requirements. This RegTech should allow FinTechs to continue to thrive and offer new, innovative products.

Ultimately, I expect the 2020 elections will have a major impact on what we see move through Congress and state legislatures to further regulate the FinTech space leading into the 2020s.

"The creative use of artificial intelligence to mitigate financial risk and the ability to access business credit on demand not only provide efficiencies at scale but enable businesses of all sizes to become more competitive on a regional and potentially global scale."

2021 TIMECAPSULE

PAYMENT METHODS ARE ON A COLLISION COURSE WITH GLOBAL BUSINESS, **BUT NOT FOR MUCH LONGER**

ANDREW GILBOY
General Manager, US

What does the ideal payment model look like for a U.S. business-to-business (B2B) company with global ambitions? You probably want to invoice in the currency you're doing business in, making it as easy as possible for your customers to buy from you. You also want to land the payment back in dollars, so you're in control of the foreign exchange risk. And you want all the hazards and costs of banking in a foreign land magically passed onto someone else.

By the end of 2020, I predict businesses in the B2B space will get closer to this ideal. Freed from the burden of needing a separate bank account and legal entity in every country, and with money moving seamlessly across a borderless payments system, a business will look very different. Automation will see accounts payable and receivable teams halved in size. Risk and compliance will be scaled back, too. Headcount and resources will be diverted to core growth activities, such as product development and sales.

Today, no payment method can truly claim to be this borderless nirvana. Paper checks – still used for more than half of B2B payments in the U.S. – are the most obvious felon. The major credit card networks are perhaps the closest we have to being borderless, but they are not available everywhere, and they can be separate from the card issuers operating at a country level.

Moreover, they largely cater to a business-to-consumer (B2C) model; in the U.S., only 5 percent of B2B payments are made via credit cards. The banking network may seem like a frictionless ecosystem, but under the hood, the flow of money is being constantly interrupted by incompatible national systems, diverging regulations and antiquated tools.

Bank debit is the primary example of this dislocation. In the U.S., we have ACH; in the U.K., it's BACS; and the Eurozone has SEPA. Australia, South Africa, Sweden, Japan, Malaysia and Turkey each have their own bank debit schemes, to name just a few more.

Ironically, this failure of B2B payments to be truly borderless is at odds with the very exercise it is primarily designed for: buying and selling things. In 2018, the U.S. traded $5.6 trillion of goods and services with the rest of the world. As each dollar crisscrosses the U.S. border, it loses value. The banks and intermediaries on both sides name their price for processing payments. Foreign exchange fees come next. And then there's the cost of complying with the rules of wherever you're doing business.

The complexity may prompt you to invest in resources to oversee and optimize it all. Yet it can be so opaque, and the rules so rigid, that you have no choice but to fall in line. No wonder 58 percent of U.S. businesses believe the complexity of international payments is holding them back from growing.

Payment methods are on a collision course with the global nature of business today. International commerce is the unstoppable force – $22 trillion is transacted across borders every year. But payment methods are not unmovable objects.

So, my actual prediction? B2B payments will be the next frontier for innovation. Technology companies, rather than big banks, will be the ones to fix things. The successful will limit their ambitions to one payment method, and will do it better than anyone else. That'll be a pull-based method, where a business takes payments from their customers because that makes everyone's lives easier. Passing on the cost and stress of complying with national banking rules will be a key benefit of using the platform, enabling U.S. businesses to grow abroad.

AGILITY WILL BE YOUR BEST FRIEND

AMIR WAIN
CEO and Founder

The reality is that you can't predict the future. When you try to do so, you will likely find that your year-end look at year-out predictions are obsolete by March. What you can and should do is try to identify and prepare for the high-level trends that are occurring, realizing that they are continually evolving over time, not in response to a single event or timeframe.

For instance, we know that technology in general – and artificial intelligence (AI) specifically – is enabling hyper-personalization. Although in its earliest implementations, the ability to create one-to-one personalized products and offers that are presented to individuals when they are most responsive to them will result in more meaningful engagements, higher customer satisfaction and lasting loyalty. Although considered an oxymoron now, "mass personalization" will be the end result, causing positive disruption to the status quo of how we market and buy today.

The single most important capability to develop is agility. That trait will provide the bridge from the old and traditional to the new and yet to be discovered. By being open to change and continuously adapting to it, we'll never miss an important shift or underestimate a nuance. We'll increase speed to market tenfold, we'll move from physical formats to all-virtual, we'll eliminate friction, fraud and risk in the system, and we'll use business intelligence and machine learning to create bespoke services that virtuously improve and adapt. We'll create and implement any use case on any scale for our clients and their customers.

How many times have we seen a continuance of established methodologies and systems? Rather than continuing to modify or tweak what exists, let's focus on what could be and drive toward the end goal. Let's learn how to incorporate challenging the norm as an everyday mindset. Let's respond to new challenges with curiosity and openness to the "new possible." The instant we do, we will free ourselves to proactively create what the future can be.

"The single most important capability to develop is agility. That trait will provide the bridge from the old and traditional to the new and yet to be discovered."

2021 TIMECAPSULE

COULD CHINA BE THE FIRST COUNTRY TO GO **COMPLETELY CASHLESS** IN 2020?

ANDREW MONROE
General Manager, North America

As China was the nation to introduce the world to banknotes, it makes sense that the new China will be driving the next evolution of payments: a cashless society.

Digital payments now account for up to 90 percent of payments made in China. In 2019, mobile payment users increased by 10 percent to 577.4 million, surpassing the U.S. and making the Chinese the largest mobile payments users in the world. Furthermore, 82 percent of the local population are unique mobile users.

China is a hotbed of eCommerce, and digital payments have become so commonplace that, to avoid discrimination against cash users, the People's Bank of China has had to forbid digital-only businesses from refusing cash. Clearly, the country is well on the way to becoming cashless and has already been planning ahead and investing in the future of a cashless society.

While it seems clear that China will be one of the first nations to fully embrace digital payments, we're going one step further and predicting that its cashless conversion will have taken a major leap by the end of 2020. But what will this mean for eCommerce and payments globally?

Inevitably, China will be the world leader in fading out cash payments and ensuring vulnerable members of society and "the unbanked" aren't financially excluded. Whether the country does this well or not is yet to be seen. However, it will provide a strong cashless blueprint for other nations — with the technology and infrastructure to support a digital economy — to follow. While leading the way, Chinese eCommerce players will try to gain a more dominant position in the global eCommerce ecosystem.

The introduction of a cashless society could save businesses money on cash handling expenses and make the retail process quicker and more secure. This will improve the customer experience and ultimately increase conversions for businesses. We see China opening up to the world and presenting a huge opportunity for western businesses.

It is the world's largest and most dynamic eCommerce market and a pioneering force in digital and mobile culture. However, it is a more challenging market to operate in than many others, as the unique domestic eCommerce ecosystem often demands specific solutions tailored to local preferences. To address this, one of the major payment gateways, Alipay, recently launched an international eWallet giving foreigners access to the mobile payment platform. In any case, going cashless will see more western businesses entering China.

A cashless society will also lead to further adoption of alternative payments, allowing users to make in-store payments by scanning QR codes with payment apps like Alipay and WeChat Pay. Additionally, new biometric ways to pay will increase in popularity.

With that said, the evidence shows China is already leading the way when it comes to digital payments. So, by the end of 2020, I predict China will have fully embraced the cashless model and waved goodbye to the paper banknotes it first pioneered.

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2020: THE YEAR OF CHOICE IN INSTANT PAYMENTS

DREW EDWARDS
CEO

Instant payments are more popular than they've ever been. The share of U.S. consumers who received an instant disbursement has increased almost four times during the past three years to 42.2 percent in 2019. And while it's true that most consumers today would prefer an instant digital payment over other payment methods, not everyone prefers to get that payment in the exact same way.

For instant payments to reach ubiquity, there has to be choice.

In the recent PYMNTS Satisfaction Index, it was reported that 38.2 percent of consumers would like to receive instant payments to their bank account, 11.7 percent would like them paid to their debit cards, 10.8 percent to their credit cards and the remaining to digital wallets and prepaid cards. The insight is this: The customer wants to choose how they would like to be paid — and only to an already existing mechanism. Forget having to sign up for something new just to receive funds.

Enterprises are catching on. While early pioneers in gig economy and P2P use cases paved the way with push-to-card solutions, more companies in 2020 will be tailoring their instant payment solutions to shift choice to the consumer, allowing them the flexibility to receive their money in the easiest way that suits their needs.

And that means their challenge is not just about how to connect to a card network, but rather to create a simple and intuitive customer experience that offers an array of payment options — including legacy mechanisms like ACH and check — through a disbursements marketplace, like Ingo Money.

In addition to payment option choice, channel choice is important, too. It will give rise next year to omnichannel customer experiences that bring choice in the way a customer interacts with a payor to receive their funds across online, mobile, telephone and retail channels.

As for which industries will get into the instant payments game, next year's players will include more of the smokestack economy, led by the insurance industry, as well as the treasury banks that will deliver easy-to-consume technical infrastructure and platforms for their treasury clients' customers and vendors.

Next year will be the year of choice. Banks and businesses will offer their customers choice in how quickly they are paid, choice in the methods and accounts to which they receive their funds and choice in how they engage. And by dramatically improving the customer experience — meeting consumer demand for speed, convenience and choice — we will see the emergence of a truly modern disbursements experience.

> **Next year will be the year of choice. Banks and businesses will offer their customers choice in how quickly they are paid, choice in the methods and accounts to which they receive their funds and choice in how they engage.**

2021 TIMECAPSULE

BIOMETRIC AUTHENTICATION CONTINUES IN POPULARITY AS TRADITIONAL IDENTITY PROOFING DIES OFF

PHILIPP POINTNER
Chief Product Officer

We think there's going to be a mass exodus from traditional identity proofing and authentication methodologies. Payments companies that continue to get hit by account takeover, bot attacks and spoofing attacks will migrate from knowledge-based verification and authentication, credit bureau checks and static forms of identity verification that do not definitively assess the remote user's identity.

This also includes traditional and less secure authentication solutions that rely on a simple username and password or SMS-based, two-factor authentication. We fully expect organizations to start exploring and deploying some sort of passwordless or biometric-based authentication for high-risk transactions.

As organizations make the move to biometrics, they need to concern themselves with something known as liveness detection. Certified liveness detection is a necessary evil for modern biometric authentication systems in order to protect against increasingly sophisticated spoofing attacks. For instance, fraudsters are now using photos, videos or even a simple mask to bypass the selfie requirement (which is often required to corroborate the digital identity to a government-issued ID document).

Most recently, deepfakes have entered the scene and represent a significant threat to biometric-based verification solutions. Deepfakes seem to be a real person's recorded face and voice, but the words they appear to be speaking were never really uttered by them, at least not in that particular order.

Because of these emerging threats, most of the leading automated players have embedded some form of liveness detection as part of the identity verification process. Liveness detection methodologies ask users to blink, smile, turn/nod, watch colored flashing lights and much more. Sadly, most of these legacy techniques are easily spoofed by deepfakes and advanced spoofing techniques. Certified liveness detection is performed by iBeta, a NIST/NVLAP-accredited lab, and attests to a solution's ability to defend against advanced spoofing attacks.

Enterprises continue to have some trepidation about moving on from password-based, single-factor authentication. Often, they believe their users won't accept it or believe biometrics adds more complexity to their environments.

Neither premise is true. But, in order for biometric authentication to go mainstream, three ingredients must be in place.

The first is familiarity. Two-thirds (67 percent) of consumers are already comfortable using biometric authentication today. This trend has been accelerated by the broad adoption and familiarity of facial recognition integrated within the most popular smartphones, such as Apple Face ID.

The second is the need for speed. While most users are willing to endure a bit of friction when creating an online account, they're increasingly demanding identity proofing and authentication solutions that are fast (performed in seconds) and reliable.

The third is cross-platform portability. Users can enroll using a laptop webcam and authenticate later from a smartphone or tablet (or vice versa), which means it's now possible to use face authentication for everything, from unlocking a car door, to performing a secure password reset, to accessing your bank account.

Because of these inherent advantages, more and more payments organizations will start migrating to biometric authentication with certified liveness detection in 2020.

ARTIFICIAL INTELLIGENCE IS THE FUTURE OF PAYMENTS AND ACCOUNT FRAUD PREVENTION

BRAD WISKIRCHEN
CEO

When it comes to payments and fraud prevention, 2020 will be the year of the customer journey. No longer is fraud prevention simply a matter of stopping chargebacks, but rather being proactive in using advanced data analytics and next-generation artificial intelligence (AI) to give the VIP treatment to good customers while quickly preventing fraudulent activities.

Fraud isn't going away. It is evolving to present new challenges, meaning businesses need to be flexible, adaptive and smart when it comes to their fraud management strategy. The answer lies in advanced AI.

AI is essential in protecting the entire customer journey, from account creation, to account takeover, to protecting the payment transaction. During the year ahead, accounts will become more vulnerable than ever. Data breaches have taught us that passwords aren't enough to keep an account safe. Methods like CAPTCHA show someone isn't a bot, but they can't confirm whether or not it's the actual account holder attempting to log in. Meanwhile, customer expectations are mounting, with little tolerance for friction.

That's where AI comes in. AI can recognize a returning user and allow businesses to establish a relationship with their account holders that is protected beyond a password. Businesses don't have to wait until the payment transaction to make a determination on the risk or safety of a transaction.

With advanced AI, businesses gain the power of supervised machine learning (ML), which learns from historical data, as well as unsupervised machine learning (UML), which detects emerging fraud attacks. The combination of ML and the depth and breadth of a universal data network allows businesses to quickly and accurately make decisions on transactions in a highly scalable and accurate manner, freeing up resources to focus on more proactive initiatives and business-driven outcomes.

These business-driven outcomes also help to align the fraud management team with the rest of the organization more than in previous years. With emphasis on the entire digital customer journey, security and fraud prevention are merging closer together. Teams, budgets and strategies will continue to align into the 2020s, and effective fraud prevention will not only keep up with these efforts, but advance them.

My prediction: Before the end of 2020, businesses will be seeking ways to streamline their fraud prevention to be proactive across the entire customer journey.

> **Fraud isn't going away. It is evolving to present new challenges, meaning businesses need to be flexible, adaptive and smart when it comes to their fraud management strategy.**

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2020 PREDICTION: US CONSUMERS WILL START EMBRACING CONTACTLESS PAYMENTS

LINDA KIRKPATRICK
Executive Vice President, U.S. Merchants and Acceptance

From buying morning coffee to getting tickets for daily commutes, transactions that are part of a daily routine will become faster and easier with contactless cards. Twenty-two percent of Mastercard's global transactions are contactless. Going into 2020, the company hopes to see more people tapping to pay here in the U.S. In fact, Mastercard currently has commitments from banks and credit unions (CUs) to bring more than three-quarters of its volume to contactless issuance in the U.S. over the next two years.

Increasing uptake of contactless payments means merchants will be able to check out more consumers more quickly and provide a great shopping experience.

The catalyst for this change will be transit in commuter cities, which will impact and drive adoption across the U.S. Mastercard is working on transit systems in over 25 cities across the nation through our unique partnerships, such as Masabi and Cubic Transportation Systems, to make tap-and-go transit payments dominant and to create that much-needed pivot for contactless in this country. When transit gets enabled through contactless, usage rates go up everywhere – not just within transit, but at local coffee shops, quick-service restaurants and convenience stores, making life easier for consumers and empowering local businesses.

Contactless payments bring benefits not only to consumers but also to merchants. Sixty percent of Mastercard's card-present volume originates at merchants that are now contactless-enabled, and the company expects to see these numbers increase over the next five years. Increasing uptake of contactless payments means merchants will be able to check out more consumers more quickly and provide a great shopping experience.

Once people realize how simple and slick the contactless card experience is, especially when they are in a hurry, they will tap and pay for faster checkout at subways, taxis, pharmacies, grocery stores and coffee shops.

CONSUMERS PAVE THE WAY FOR THE INTERNET OF PAYMENTS FOR FRICTIONLESS COMMERCE

BRANDON SPEAR
President

By the end of 2020, it's likely that purchases made through connected devices will continue to increase.

According to recent survey data from Deloitte on connectivity and mobile trends, U.S. households now support an average of 11 connected devices, and this number will grow over the next decade. And more available devices means more places to make purchases. As buyers continue to diversify the ways in which purchases are made across devices, brands will be challenged to harness the data resulting from these additional inputs to gain better insights into customer behaviors and to streamline processes.

While business-to-consumer (B2C) organizations typically lead these kinds of transformations, business-to-business (B2B) will quickly follow as there is greater demand for the B2B purchasing process to more closely match that of B2C. In upcoming years, as purchasing occurs across a wider range of connected devices, companies will need to lead with application programming interface (API)-focused technologies to ensure an omnichannel experience that works with a variety of backend systems, such as enterprise resource planning (ERP), point of sale (POS), customer relationship management (CRM) and others to provide deeper data on purchasing behavior.

And, as the manufacturing sector continues to move toward Industry 4.0 advancement, the Internet of Payments (IoP) will see an increase in adoption. The IoP enables machines to facilitate purchases in a way not traditionally offered. For instance, fuel card transactions at the pump could be replaced by a payment made from the truck. Data that is important to the fleet, including truck number, odometer reading, driver information and additional insights, can be passed back to the carrier.

Printers provide an additional example, as ink needs to be replaced when it gets low. If the printer can order the ink on its own, the process becomes automated, and the buyer-seller relationship is strengthened as the friction in the purchasing process is reduced.

Of course, early adopters will begin to tap into these possibilities in the new decade, while full actualization won’t be realized for several years ahead. While B2C will pave the way for B2B, similar to years past, we can expect B2B adoption to be faster than in previous decades given our rapidly innovating world.

Regardless of where or how purchases are being made, one thing is certain: Buyer expectations for a seamless payment experience will be higher than ever, and companies will need to find innovative solutions to create secure, frictionless, consistent transactions across a myriad of channels.

While B2C will pave the way for B2B, similar to years past, we can expect B2B adoption to be faster than in previous decades given our rapidly innovating world.

CONSOLIDATION WILL **TRICKLE DOWN** IN 2020

BOB BUTLER
President

End to end, the year 2019 was one of colossal consolidations for payments' biggest players. Starting in January, Fiserv announced it was buying First Data for $22 billion (the acquisition was completed in July).

Not to be outdone, in March, Fidelity National Information Services Inc. (FIS) announced its agreement to acquire global payments company Worldpay in a deal valued at $35 billion in cash and stock. The end of July marked the completion of this merger for FIS, as well.

And in May, Global Payments and TSYS entered into an agreement to combine in a $21.5 billion deal. This deal closed in late September.

That's just the big three; other players like Chase and Elavon participated in their own purchases, but registering well below a billion-dollar price tag.

There are a few outcomes we can likely expect in the industry as a result of combining these major entities.

First, the banking sector may benefit by greater synergies between traditional banking technology and payments. Second, massive global distribution reach will be easier to obtain. And third, the sheer size of the three entities will make it more difficult for other players to have the necessary scale to compete on price and, possibly, capability.

But there's a fourth outcome likely to happen in the wake of the consolidation while these newly formed groups are working through the heavy lift of integrating their business: A major disruptor will cause noise and break through in 2020, kicking off its own series of consolidations or rollups as the small to medium-sized players in FinTech and payments sort themselves out.

The reality of large mergers means companies face distraction. During a merger or acquisition, even the smallest operational change can have a significant — often adverse — impact on both customers and employees. When large companies merge, the customer is often overlooked — yet customers are arguably the most important aspect of any company.

Merging corporate cultures puts stress on employees, and potential redundancies can lead to uncertainty. Customer service might also suffer as employees' stress about their positions could affect their job performance. Additionally, mergers can cause slower response times and development because deciding how to spend development resources might take longer.

What does this mean to the rest of the industry? It should create more and bigger opportunities, especially for fast-moving and nimble FinTechs. These large mergers may cause uncertainty within the merchant community, and if so, could create an opportunity for the smaller players to compete — where they bring value and more than just a commoditized service.

WHEN **FRICTIONLESS** GETS PERSONAL

ANDREW ROBBINS
CEO

Until now, most of the payments industry was focused on making commerce "frictionless." That's why the media is enthralled with Amazon Go, which allows people to walk in, pick up an item and walk out without having to stop at a register or interact with a clerk. There is no ordering, no planning, no stopping. You step in, look through the offerings, make a choice and walk out. In that case, the payments are as frictionless as the rest of the transaction.

For some brands, that same frictionless transaction starts before the sale. Companies like Starbucks and Dunkin' ask consumers to store their dollars as a way to accelerate mobile ordering. By taking care of all the payments up front, customers can order their coffee and then scoot in and out of the store before the front door even closes.

Of course, this is part of an evolution. Back in the 1990s, frictionless commerce meant simply paying for gas with a credit card at the pump. Later, it moved to self-checkout at grocery stores.

In the next year, we're going to see frictionless begin to evolve toward creating personalized experiences across all platforms and interactions, whether it's walking into a store, ordering online or some combination of the two. But unlike today's relationships, which are based on direct interactions between customers and vendors, this will be about preference information moving along with the dollars and cents.

All of this starts with identity, which is an area where payments companies already excel. Customers have long shared intimate details with their payment platforms, including their home addresses, phone numbers and even their grandmothers' middle names. Shoppers could go one step further and share other personal details, like their favorite coffee drink, most purchased color or shoe size.

The final step in an ideal frictionless shopping experience is giving the consumer the ability to share that information in context, while also enabling them to maintain ownership over it. When I go to the Allbirds website to buy shoes, I expect to see only the shoes in my size and favorite colors. This way, my personalized experience with a sneaker website or that same brand's physical store is frictionless and personal from the very first interaction. Because payment is ubiquitous across eCommerce and physical retail, payment providers are in a unique position to serve as trusted keepers of my shopping identity.

Here's the kicker: This isn't going to happen with the credit cards we know today; it'll happen through our phones on platforms that work both online and off. For a view into that future, look to China, where 90 percent of the payments market belongs to Alipay and WeChat Pay. That's because these platforms allow for personal interactions along with payments. That is, the same platform we use to talk with friends can be used to shop. You can split the check with your friends as easily as you can pay your restaurant bill, whether it's at a chain or to the guy selling food on the street.

In this world, loyalty goes beyond personalization – it means developing deep engagement marketing programs that keep customers coming back. It means true, one-to-one relationships.

2020 SETS THE STAGE FOR **TAP-AND-GO**

CHUCK FAGAN
President and CEO

Contactless cards are poised for rapid adoption in 2020. According to a recent survey conducted by PSCU, approximately one-fourth of respondents already have a contactless card and use it at least a few times per month, despite the early stages of contactless card issuance by financial institutions (FIs). Of those who have (and use) a contactless card, convenience, ease/speed of use and security are cited as the primary motivators for doing so, while the primary reason consumers do not use their contactless card is due to lack of acceptance at stores they frequent.

The number of consumers using a contactless payment method is expected to increase as more merchants turn on their near-field communication (NFC) technology and begin accepting tap-and-go forms of payments, including cards, wearables and other devices. For the first time, merchant acceptance – a key driver that will determine how quickly contactless succeeds in the U.S. – is ahead of the issuing FIs, as merchants look to speed up their checkout lines for a better customer experience.

According to Visa, 95 percent of terminals shipped are already contactless-enabled, and eight out of the top 10 merchants are accepting NFC payments as of October 2019, including major retailers like Target, Trader Joe's, Whole Foods and Costco. With the launch of Europay, Mastercard and Visa (EMV), merchant adoption accelerated rapidly once large retailers went active, a trend we can expect to see repeated with contactless cards.

It is anticipated that credit unions (CUs) could begin to experience an increase in transactions as they begin issuing contactless cards, which gives them an opportunity to enhance and elevate the member experience. Once consumers realize their purchasing experiences can be enhanced through contactless cards and know where and how to use them, an increasing amount will likely use this payment option. CUs should ensure that regardless of where or how their members shop, their CU-issued card is at the top of members' wallets. As such, CUs should be prepared to not only offer contactless cards to their members, but also have information readily available to educate members on how to use them.

Lastly, contactless card adoption is likely to encourage mobile wallet adoption over the next few years. Once merchants turn on their NFC functionality and begin accepting these forms of payments, consumers with contactless cards will see how easy it is to use those – and, in turn, will realize that using a mobile wallet is just as easy. Tap-and-go could very well become the new way to pay in the coming year.

"It is anticipated that credit unions could begin to experience an increase in transactions as they begin issuing contactless cards, which gives them an opportunity to enhance and elevate the member experience."

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KELLY
SWITT

WHY 2020 WILL BE THE YEAR OF **PAYMENTS INFRASTRUCTURE**

KELLY SWITT
Director FSI Eco System and Partnerships

The months that lie ahead – and a time capsule snapshot – may show the first year of the new decade as the "year of infrastructure."

By this time next year, we will have observed a much more symbiotic relationship between technical road mapping and business road mapping as firms get ready for digital payments. In the past, those strategic pieces were separate and distinct. But what's driving the trend toward symbiosis is the continued move away from cash and checks and toward a digital ecosystem.

Embracing a digital ecosystem expands a company's mindset to examine what it should be doing in the payments space. And against that backdrop, a wholesale modernization effort needs to take place – especially for some of the more established banking and payments players, where there is more work to do than would be seen with more tech-nimble, up-and-coming firms.

That wholesale modernization effort must focus on real-time payments – specifically digital, cardless transactions, along with digital wallets and QR codes. Cross-border payments blur the lines between consumers and wholesale payment businesses.

In the past, banks had consumer/commercial business lines, separate and distinct from wholesale business. But with the blurring of those lines, the business capabilities end up being exactly the same, which means the technical capabilities are also consistent across the firm.

From a technical perspective, firms would be prudent to use the coming year to simplify their core payment processing. The simplification can come from the consolidation of application environments and

tighter integration of corporate and consumer-facing activities.

Consolidation leads to modernization of applications, which means companies can bring in new technologies to modularize and simplify business capabilities. With a range of new business functionalities – and as transactions are rendered digitally across borders – there comes a growing need for scale within infrastructure, rendered through the cloud. In 2020 and beyond, companies will realize the need for a hybrid cloud infrastructure to help meet the response rates expected by regulators around the world.

By December 2020, the most marked change globally will be in the C2B payments space, where traditional card payments will still be in force, but firms will expand their horizons to offer new payment methods in the digital wallet ecosystem – especially as real-time payments become widespread. The next year, 2021, will see companies, with infrastructure and open ecosystems in place, thinking about novel ways to leverage their data to provide new services.

2021TIMECAPSULE

API NEW YEAR

JUAN MARTINEZ
Global Head of APIs

API, or application programming interface, technology is emerging as a powerful enabler of improved productivity and customer experience that will help reshape financial services over the next decade.

From Uber to Airbnb, we have already seen other sectors completely transformed by APIs. And as the technology proves to be sufficiently secure and reliable, our industry is embracing it, too. APIs are at the core of SWIFT's strategy and a key part of how we deliver a faster, more transparent experience to our customers.

APIs facilitate agile development that allows new services to pop up and, if not successful, fail fast. They reduce the cost of internal IT, provide new opportunities to monetize existing services and deliver the means to work with trusted partners and rapidly create value-added services.

There is a flip side, though. As the financial system reconfigures itself around these new models and invites new participants, end-to-end transactions become increasingly complex. This complexity presents challenges that must be met if we are to fulfill the potential of APIs. Chief among these challenges is fragmentation.

The agility and simplicity afforded by APIs means anyone can develop and publish their own specifications. This approach, however, will lead to inconsistencies that negate the benefit.

Fragmentation of approach threatens to undermine the key promises of API technology: the ability to quickly and easily switch between service providers, and the ability to aggregate data and services from multiple sources to create new business value.

At SWIFT, we are in a unique position to create and maintain the standards necessary for processing financial transactions efficiently and securely. With a rich history at the center of industry standards, it makes sense that we lead the way in API standardization, too.

In 2020, we urge institutions that are embarking on their API journeys to look beyond the immediate need to comply with regulation or to implement a tactical solution. To benefit from – and help evolve – a shared global platform for the API economy, engage with us and help release their potential in financial services.

“The agility and simplicity afforded by APIs means anyone can develop and publish their own specifications.”

2021 TIMECAPSULE

2020: REGULATORY CHANGE ON STEROIDS

ZAC COHEN
Chief Operating Officer

This year was big for regulatory crackdowns. In the first full year following 2018's implementation of GDPR, we saw regulators across Europe start to levy large fines for non-compliance with the new data protection rules, and we witnessed a heightened compliance focus on a bevy of additional global regulations, such as anti-money laundering (AML) rules. Europe's top regulator, for one, shows no signs of slowing down.

If 2019 was the year of the regulatory crackdown, 2020 will be defined by regulatory change on steroids. We've already begun to see the foundation for such large-scale change happen in 2019: public and government scrutiny into data; privacy and Big Tech strengthening; and regulatory changes accelerating in nearly every sector. I predict that 2020 will be a record-breaking year for the most global regulatory changes we've ever seen.

These changes will hit nearly every sector and touch on almost every critical issue facing businesses and consumers today. From how identity and personal data is managed to what must be done when it comes to single and multiple jurisdictional know your customer (KYC), AML and fraud prevention, any and all global businesses will need to integrate technology, flexibility and security into everything they do.

Until recently, doing so had been considered more of a smart business practice than a legally mandated directive. We saw the type of collateral damage that a lack of focus on security and trust can create for companies and their customers, and I predict regulators in 2020 will take more matters into their own hands. They will force businesses to take these issues seriously by implementing widespread regulatory changes at a scale we've never seen before.

If businesses fail to comply, they face the very real dual threat of non-compliance fines and a poor user experience for customers. This will also result in an increase in RegTech spending, which Juniper Research recently predicted will exceed $127 billion by 2024, up from $25 billion in 2019. Companies facing the coming deluge of regulatory changes will quickly realize they need help navigating this complex world, and will earmark more of their IT spend toward the growing field of RegTech in 2020.

If 2019 was the year of the regulatory crackdown, 2020 will be defined by regulatory change on steroids.

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DATA INTELLIGENCES' ABILITY TO CREATE **FRICTIONLESS EXPERIENCES** IN 2020

MATTHEW MCCONNELL
Chief Operating Officer

I believe we are on the cusp of seeing data intelligence truly change how consumers purchase and pay for the goods and services they seek.

Retailers possess a massive amount of consumer data, which has been amassed over the past decade across the commerce supply chain. However, until recently, retailers have not had the technology to analyze and act upon that data at scale in a way that truly ensures a seamless, simplified consumer experience.

Now, thanks to incredible advances in technical capabilities spanning blockchain, machine learning (ML), predictive analytics and artificial intelligence (AI), retailers can bring consumers new, highly targeted and personal ways to execute a transaction in both online and physical retail environments, all through invisible payment capabilities.

Consider how an online retailer, such as Amazon, might create a predictive business model in which they send a customer a new book (or a product like razor blades) based on their intimate knowledge of preferences and buying trends (e.g., how long it takes a consumer to read and then purchase their next book and the books they like, or how often a consumer restocks razor blades, etc.). Now, online retailers can be enabled and empowered by the data to predict these shopping purchases, and can offer their customers turnkey models where the shopper won't even have to think about the purchase.

Over the next 12 months, I believe we will see retailers streamline and optimize their supply chain with a better understanding of every consumer based on data. This will not only drive prices down, but will provide a better, more personalized and seamless consumer experience.

How Data Intelligence Will Influence a New Frontier in Unattended Retail

When you look at unattended retail, it has historically been used for applications of food and beverage, with a low-ticket, low-transaction volume per consumer. Now, with advancements in data intelligence, retailers are better equipped to understand what, where and when consumers are buying or spending their time, creating more frictionless transactions.

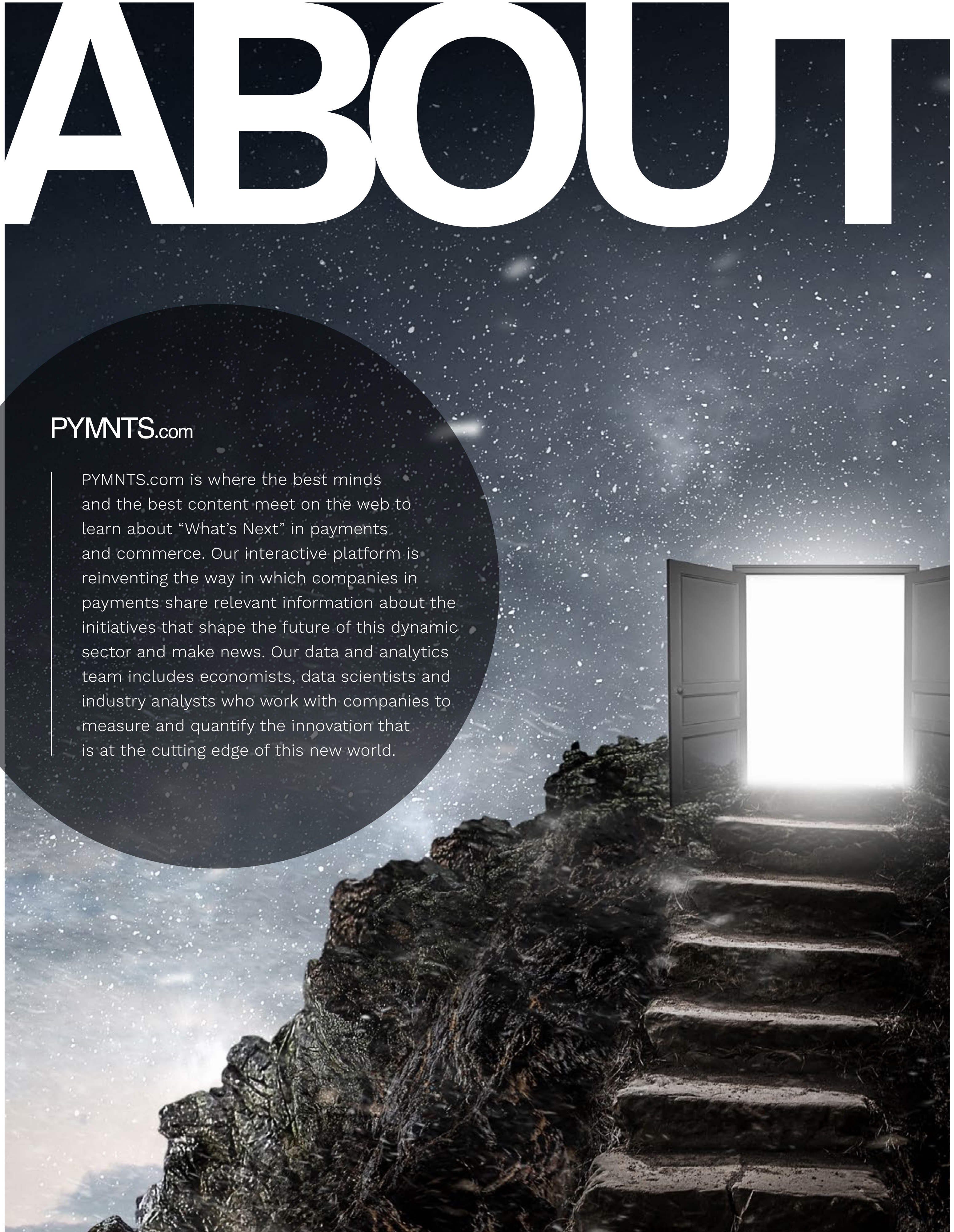
Coupling this data with other technical advances in micro-sized card readers and chips, invisible cashless payment capabilities and facial recognition technologies, I anticipate that personalization and processing will dramatically open up unattended retail to a new universe of products.

One example would be items that had been impossible to sell in an unattended retail environment because of age verification requirements, including lottery tickets, cigarettes and alcohol. With the implementation of new technologies, such as facial recognition, coupled with processing data that leverages a much broader consumer dataset, this would allow for immediate age verification and the ability for unattended procurement in this currently untapped market.

DATA BREACHES COULD FORCE ADOPTION OF **SMARTER SECURITY**

PAUL FABARA
Chief Risk Officer

Headline-grabbing data breaches seem to be never-ending. The best defense is to assume your organization is a target and take proactive steps to defend against falling victim to a cybercrime or enabling the use of stolen data in your systems. I believe we will see significant global growth in adoption of payment tokens and the updated EMV® 3-D Secure specification. Payment tokens help make transactions safer by eliminating the transfer of actual payment data for eCommerce and mobile payments, and can help deliver a seamless yet secure digital payment experience. The updated 3-D Secure specification enables real-time exchange of 10 times more contextual data between merchants and financial institutions (FIs) to improve decision-making, so both parties can better manage fraud in digital channels while optimizing sales.



ABOUT

PYMNTS.com

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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