

TRANSACTION

trends

THE OFFICIAL PUBLICATION OF THE
ELECTRONIC TRANSACTIONS ASSOCIATION

Buying With Biometrics

Increased adoption
yields new considerations
and products

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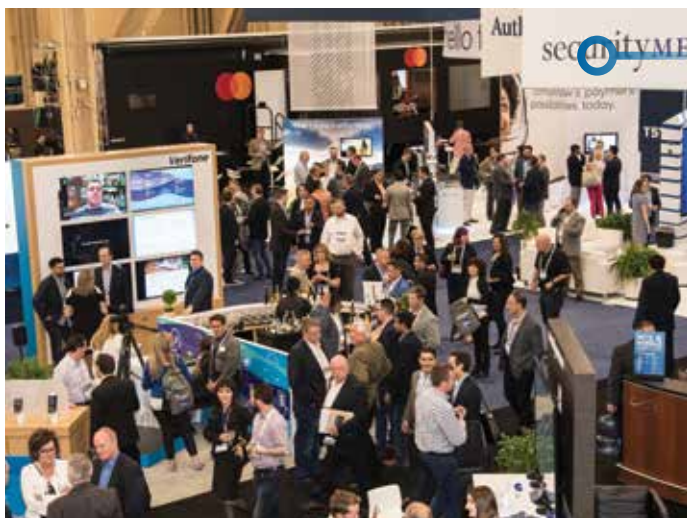


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By Christine Umbrell

With global biometric revenues expected to top \$50 billion annually by 2022, payments professionals need to understand how these technologies are being integrated into smartphone technology and developed into other payments solutions. Advances in Touch ID, contactless fingerprinting, facial recognition, iris scanning, and other biometric technologies will impact payment processes—and raise new questions regarding privacy and security.



16 **Only at TRANSACT**

With the payments industry's premier event now past, it's time to reflect on some of the unique conversations, educational opportunities, and demonstrations that made TRANSACT a success. From announcements made by the biggest players in the space and predictions on retail in next 10 years to earnest conversations about the transformation of the acquiring industry, this super-sized section features several of many highlights from exclusive events at the world's largest payments technology trade show.

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ETA Looks to the Future

We've just wrapped another amazing TRANSACT, where attendees spent three days networking with thousands of payments industry leaders, attending more than 40 educational sessions, learning from over 100 expert speakers, and visiting more than 200 booths on the TRANSACT show floor. TRANSACT is designed for the needs of a changing industry and is the most important annual event in payments technology. ETA's mission is to grow the payments industry, and we gave our TRANSACT attendees the knowledge and tools they need to thrive.

The traditional acquirer model has been disrupted, and the most discussed topic at TRANSACT was how to adapt to the new sales channel and new software services. Whether you're an ISO, a processor, an acquirer, a hardware company, a software company, or a PayFac, you need to meet new technology partners and understand how ISVs are serving merchants. The pace of innovation among new entrants is matched by the rapid pace of merger and acquisition activity across our membership.

Merchants demand more than just card acceptance from their payments solutions, and payments providers are making changes to meet market forces. Our "2018 Payments Trends to Watch" report found that U.S. merchants will spend \$2.2 billion this year, and \$2.4 billion next year, on software solutions for their POS devices. Almost all processors have either acquired or built their own software solutions. It simply has to be part of the package offered to merchants.

Startups are offering new security, loyalty, and software innovations that address merchant needs beyond plastic cards, and I believe that the payments ecosystem needs to help incubate these new entrants. ETA encourages payments technology startups to engage in our association. On the TRANSACT show floor, we brought over 25 startups and four leading payments fintech incubators to our NextGen Park, Startup Zone, and Payments Pitch-Off. A \$30,000 prize for the most innovative payments startup went to Modo, selected by a panel of expert judges at TRANSACT. Last year, we introduced a startup ETA membership to make it easier for startups to join the association. Looking forward, startups will play an integral part in our membership ecosystem.

On June 12, we're bringing all these pieces together—software companies, startups, acquirers, ISOs, fintechs, banks, merchants—at TRANSACT Tech Atlanta (TTATL), ETA's next event. At TTATL, we'll take a deep dive into the "reinvention of the acquirer" in the city that's home to 70 percent of the payments processing business—Atlanta. TTATL is a critical next step in the ongoing industry conversation—I hope to see you there.

Jason Oxman

CEO

Electronic Transactions Association



New Report Details Widespread Security Threats

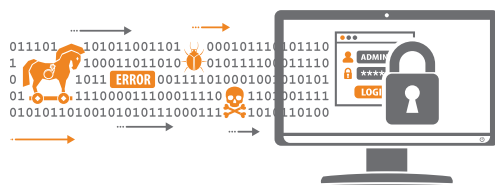
Consumers may feel confident in the security of their day-to-day electronic transactions, but that sense of security may be an illusion—especially if they live in North America, according to the “2018 Trustwave Global Security Report.”

Providing an in-depth look at top security threats, the report reviews breaches by industry and cybercrime trends from 2017. Researchers investigated data breaches affecting thousands of locations across 21 countries and found that North America suffers significantly more breaches than other regions, accounting for 43 percent of those studied by Trustwave. This rate was followed by the Asia Pacific region at 30 percent; Europe, Middle East, and Africa at 23 percent; and Latin America at 4 percent. The most affected industries were retail (17 percent), finance and insurance (13 percent), and hospitality (12 percent).

So, why is North America leading in data breaches? Trustwave posits that incidents involving point-of-sale systems were most common in North America because it has been slower to adopt the EMV chip standard for payment cards.

In all regions, payment card data is still the most lucrative target, accounting for 40 percent of data breaches, split between magnetic strip data at 22 percent and card-not-present at 18 percent. Fraudulent ATM transaction breaches are also on the rise, enabled by compromised account management systems at financial institutions.

While the report also reveals several alarming trends, including increased attack sophistication and malware obfuscation, vulnerabilities among 100 percent of web applications tested, more aggressive social engineering tactics, and more targeted web attacks, it did show improvement in areas such as intrusion detection and a decrease in spam messages containing malware.



Fast Fact

Chip payment volume continues to increase in the United States, growing from \$4.8 billion in September 2015 to **\$70.7 billion in March 2018**. Nearly 97 percent of Visa’s overall U.S. payment volume in March 2018 originated from EMV cards.

Source: “Visa Chip Card Update, March 2018,” Visa

Nearly All Acquirers Unhappy With PCI Compliance Among SMEs

A recently released survey shows that small merchants are systematically failing to meet PCI standards, revealing a small- and medium-sized enterprises (SME) security and compliance crisis.

Sysnet Global Solutions’ “Acquirer PCI Sentiment Survey,” which included input from five of the top 10 global acquirers, revealed that all of the acquirers surveyed believe that small merchants are not effectively engaging with PCI programs. Most acquirers indicated that this is the result of a lack of time and knowledge; however, 64 percent of respondents also believe that merchants do not make security a priority.

The survey reported that 92 percent of acquirers are unhappy with their current compliance rates, and 96 percent believe that acquirers need to do more to help merchants secure their

businesses. More than 70 percent pointed to consistent communication (i.e., calls and emails), merchant education, and the provision of managed security and compliance services as the best ways to drive small merchants toward PCI compliance. Noncompliance fees, withholding funds, threat of termination, and transparent reporting and attestation were identified as methods that were less effective.

In fact, not only do many acquirers view noncompliance fees as less effective, 52 percent of respondents agreed with the statement, “Some acquirers view noncompliance fees as unethical, describing PCI noncompliance fee revenue as a ‘drug the industry needs to wean itself off of,’” and 44 percent of respondents consider noncompliance fees to be damaging to their brand as an acquirer.

Fast Fact

In 2017, chargebacks cost issuers and merchants more than \$31 billion, which represents less than half of 1 percent of all U.S. retail sales. **Of the billions spent on chargebacks, two-thirds are borne by merchants (\$19 billion).** Of the \$12 billion in costs that issuers incur, the vast majority is from liability.

Source: "The Chargeback Triangle," Javelin Strategy & Research

Fintech Forces Change, Shapes the Bank of the Future

As fintech transforms the global financial industry, it also drives disruption across banking business segments, including payments, lending, capital markets, and wealth management, according to "Fintech—Global: Bank of the Future," published by Moody's Investors Service.

In fact, the report suggests that bank incumbents and new entrants alike need to keep pace with fintech if they want to appeal to customers, stay competitive amid increasing digital demands, and remain part of the financial landscape of the future.

"Successful incumbent banks will be those that, either on their own or in collaboration with others, pursue aggressive digital transformation to become more efficient and responsive to evolving customer demands," said Fadi Abdel Massih, a Moody's analyst and co-author of the report. "Disintermediation of the customer relationship would be a threat to this business model if it ends up reducing banks' pricing power by transforming them into providers of a 'back-office' balance sheet for customer-facing apps/businesses."

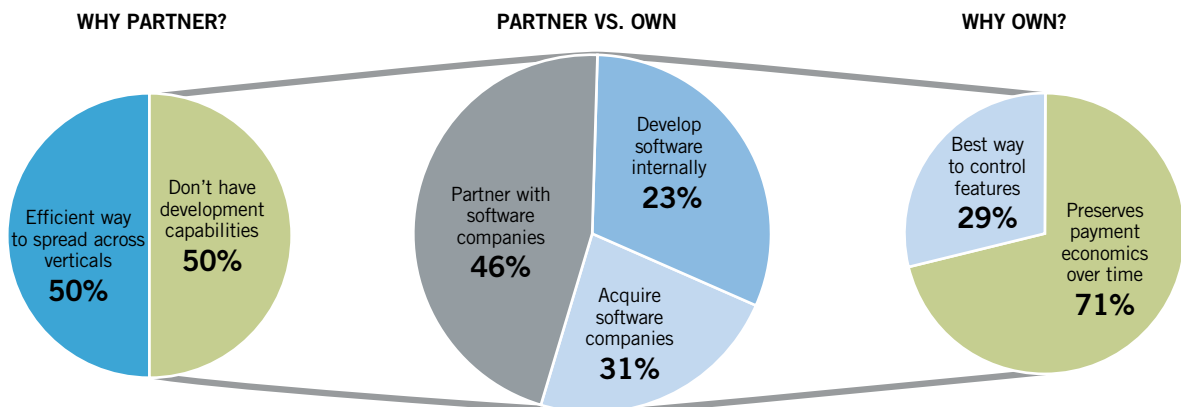
Although fintech's effect will be far-reaching and global, Moody's says the type and degree of change will vary depending on region and institution. In its report, Moody's analyzes the future shape of the financial services industry across four categories: customer expectations, competitive dynamics, infrastructure, and regulation.

The report predicts that demographics and developments in other service sectors will drive consumer demand to transact electronically across an ever-growing array of online products and services. As customers migrate toward providers that can offer the best digital features, data security will become a growing competitive edge.

Meanwhile, technological advances and startups will widen the gap in competition and shift how financial services are developed, delivered, and consumed. According to Moody's, fintechs will further advance and expand their suite of financial services from current competitive positions in payments and cash management, lending, capital markets, and wealth management.

Infographic

How and Why Merchant Acquirers and ISOs Plan To Grow Their Software-Enabled Channels



Source: ETA, Goldman Sachs Global Investment Research



Moves & Mergers

The Chargeback Company, known as Chargebacks911 in the United States, announced that it has hired chargeback expert **Craig McClure** as the director of relationship management. McClure, formerly of Visa, will manage the company's European merchant and banking customers to reduce chargebacks with the payment schemes. **Chargebacks911** also announced the hiring of **Melissa Fitzsimmons**. She will focus on expanding business development efforts and supporting the company's new e-commerce solutions for merchants, franchises, and affiliate advertising networks.

SIA, a European payment infrastructure and services provider, will acquire **First Data Corporation's** card processing businesses in parts of Central and Southeastern Europe. This acquisition provides card processing, card production, call center, and back-office services, including 13.3 million payment cards and 1.4 billion transactions, in addition to the management of POS terminals and ATMs.

FreedomPay, a global provider of secure commerce technology, has announced that it will open a European office in London, and **Tony Hammond** will serve as managing director for the region. Hammond, former senior director of EMEA-payment Solutions at Oracle, brings nearly 40 years of integrated payment solutions, technology, and product marketing experience to FreedomPay.

NXGEN International, a global merchant service provider, announced that **Tim Chew** and **Bob Baker** will head its North-eastern sales team. Chew will create and implement overall operations and sales strategies, while Baker will round out the Northeast Region Team with experience in the payments industry and back office operations, sales analysis, and ISVs.

PayPal Holdings Inc. has announced that it will acquire iZettle, a small business commerce platform in Europe and Latin America. The acquisition, which is expected to close in the third quarter of 2018 subject to customary closing conditions, will expand PayPal's in-store presence.

Paysafe, a global provider of end-to-end payment solutions, has added **Stuart C. Harvey Jr.** to its leadership team as a non-executive chairman of its board of directors. Harvey, who previously served as president and chief operating officer of Piper Jaffray Companies, brings more than 30 years of experience in capital markets, payments, and financial technology industries.

Socure, a provider of predictive analytics for digital identity verification, hired veteran technology executive **Tom Thimot** as chief executive officer. Previously the CEO of Clarity Insights, Thimot brings decades of management experience scaling sales and operations at private and public technology companies.

ACCELERATE BUSINESS | AMPLIFY VOICES | EXPAND KNOWLEDGE

YOUR ETA: NOW

Cayan now has a 75,000-customer base with the help of ETA.

ETA has helped us build our business over the past 15 years. From the business relationships and the advice we get from other members year-round, we've learned the inner workings of the industry and have seen the future. There really is no other resource for our industry like ETA.

Henry Helgeson
Henry Helgeson, CEO and Co-Founder, Cayan

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ELECTRAN.ORG | Experience the value of ETA Membership and arrive at a greater level of success. Join today.

Online Small Business Lenders Filling Financing Gap

A new study on small business lending in the United States reports that the nation's largest fintech small business lending platforms funded nearly \$10 billion in online loans to U.S. small businesses over a 36-month period and provided "substantial economic benefit" to local communities across the country.

Conducted by economic research firm NDP Analytics and sponsored in part by ETA, "The Economic Benefits of Online Lending to Small Businesses and the U.S. Economy" takes an in-depth look at the economic impact of online small business lending in the United States. Focusing on loans provided to 179,505 small business borrowers across the United States from 2015 to 2017 by five major online small business lenders, the study found that online lenders generated \$37.7 billion in gross output during this period, creating 358,911 jobs and \$12.6 billion in wages.

Nearly one-third of small business borrowers are located in lower-income communities, according to the study. About 24 percent of borrowers are micro-businesses with less than \$100,000 in annual sales, and two-thirds have less than \$500,000 in annual sales. The research showed that, on average, for every \$1 lent to small businesses, small business borrowers' sales increased by \$2.31, generating \$3.79 in gross output.

Small businesses, from local restaurants to



small manufacturers, home builders, and doctors, rely heavily on access to capital, with nearly three-quarters of small business owners seeking small loans to start, operate, or expand their businesses.

"Online lending complements, rather than replaces, traditional funding sources," said Jason Oxman, CEO of ETA. "Advanced technology enables online small business lenders to gather information and assess credit risks quickly to provide critical funding for small businesses. Online small business lenders provide key options and benefits to American small business owners in the highly competitive lending marketplace."



Fast Fact

More than two-thirds of current cryptocurrency owners (consumers and investors) plan to increase their holdings while **21 percent of consumers say they will purchase their first cryptocurrencies sometime over the next 12 months.** More than 60 percent of consumers and investors say the public will widely adopt cryptocurrencies by the end of 2025.

Source: "2018 Cryptocurrency and Blockchain Survey," SharesPost Research LLC

Several payments leaders were honored during an awards ceremony at the **Visa President's Dinner and Star Awards Gala at TRANSACT** in April. Henry Helgeson, president of Cayan, received top honors as ETA's Distinguished Payments Professional, an award that recognizes an individual who has demonstrated significant leadership within the industry and is an acknowledged trend-setter, role model, and positive contributor to its efficacy and image.

"Henry Helgeson is a pioneer of the payments industry who revolutionized the POS landscape to bring smart solutions to small businesses," said Jason Oxman, CEO of ETA. Helgeson's accomplishments include the founding of Merchant Warehouse, the creation of the Genius platform and company name change to Cayan, a recent acquisition by TSYS, and service as chair of several ETA committees. He also helped develop and establish ETA's Retail Technology Committee.

Several additional individuals and companies were honored during the gala with Star Awards, which honor individuals and companies that have made a significant difference in the payments industry through innovation, business practices, or contributions to the association. Mastercard was announced as the Business Partner of the Year. The company, a frequent supporter of ETA and a prominent exhibitor at TRANSACT, sponsored scholarships for 50 startups and software companies to attend this year's event. Additionally, MasterCard employees are active participants on several ETA committees and councils.

David Leppek, ETA CPP, of Transaction Services was honored as the Committee Volunteer of the Year, in recognition of his dedication to the Payment Sales & Strategy Committee. Leppek served on the committee for many years, starting off as a member and moving up to chair in 2017.

iPayment Inc. was announced as ISO/Merchant Sales Organization of the Year. The long-time ETA member company helped move the payments industry forward and met industry challenges with demonstrated results, according to ETA.

The Pay It Forward award was given to FIS, a company marked by its culture of "giving back." In 2017, FIS employees packed more than 5,000 pounds of food at the St. Peters-



burg Free Clinic in Florida, removed invasive species from the Mategnin Nature Reserve in Switzerland, donated backpacks to the SOS Rescuing Our Children Association in Mexico, and packed 63,000 meals at Feed My Starving Children in Minnesota. Over the past six years, FIS and its employees donated nearly \$2 million to the Leukemia and Lymphoma Society to help aid in the research of pediatric and young adult cancer.

IRIS CRM received the Technology Innovation award. The company offers a cloud-based application designed to help companies in the payments industry close deals, receive valuable analytics, and access payment networks through white-labeled portals.

Award winners were determined by the ETA Awards and Recognition Committee, a panel of industry executives who narrowed down nominations to a group of finalists, ultimately voting on a winner in each category. "The ETA Star Awards are the highest honor in our industry, and we are proud to recognize innovative companies and leaders who help fulfill our mission to grow the payments technology industry," said Oxman.

1. iPayment Inc. accepts the Star Award for ISO of the Year 2. David Leppek accepts Committee Volunteer of the Year 3. Henry Helgeson accepts ETA's Distinguished Payments Professionals Awards 4. Mastercard Accepts Star Award for Business Partner of the Year 5. FIS Global Accepts the Pay It Forward Award 6. Past ETA President Jeff Sloan is recognized by Tim Tynan, ETA president



International Update

Payments policy across borders

By Scott Talbott

As the voice of the payments industry, ETA advocates for the advancement of the payments technology industry and educates policymakers on the economic effect of our industry.

ETA members' reach extends beyond the borders of the United States to every corner of the globe. In a modern, globalized economy, policy decisions made by governments around the world can shape the American economy.

Toronto Policy Day and Working for Payments in Mexico

In May, fintech and payments professionals from across North America came together in downtown Toronto, Ontario, for one of ETA's Policy Days—a full day of discussions on payments policy, the mingling of fintech, and banking in the Canadian economy.

Fintech is changing the landscape of payments in Canada, and regulators are taking notice. ETA routinely

brings critical stakeholders together to focus on the policy decisions that will shape how ETA members serve their customers. The Policy Day featured a keynote from the director of payments policy at the Canadian Department of Finance, as well as other high-ranking policy industry experts and regulators in the Canadian government. The agenda explored the role of fintech in Canadian payments, the opportunities and challenges of Big Data, partner banking, and payments infrastructure modernization with leaders from North America like Moneris, RBC, PayPal, Intuit, and Payments Canada. This event is an important part of international advocacy undertaken by ETA and the payments industry.

Additionally, ETA traveled to Mexico City in early May to represent the organization and our members at the U.S. Department of Commerce FinTech and Banking Conference. The event focused on how to assist U.S. providers of financial service products and services in capitalizing on the

rapidly developing fintech market in Mexico City. Mexican and American leaders are looking for smart ways to collaborate and clear a path for international innovation, particularly for payments technology companies.

ETA will continue to make our international voice heard by participating in and hosting policy events across the globe.

Tariffs and China

Sometimes being active on an international stage means advocating on important pieces of domestic policy that will affect the United States and the international economy. In early May, ETA CEO Jason Oxman testified before the Office of the U.S. Trade Representative (USTR) in opposition to proposed tariffs on cash registers and POS devices made in China and brought into the United States.

The current administration has proposed these tariffs as part of an aggressive stance with respect to American trade policy, on countries, particularly those that do not have “adequate and effective” intellectual property laws. The administration has identified China as a country that poses a risk of exploiting American intellectual property.

Oxman expressed ETA’s position before the USTR: that we support the administration’s goals regarding protecting American intellectual property, but that we do not think cash registers and POS devices should be included in any increased tariffs because tariffs would not be practicable or effective in curbing bad practices overseas and

would have a negative effect on the American economy.

ETA members power the U.S. economy by providing secure and reliable payments technology—like POS devices. These products drive purchases, grow small businesses, and create economic opportunities across the country. Ultimately, tariffs are taxes, and imposing them on POS devices and cash registers will be reflected in an increased cost of goods, harming American enterprise and consumers. In fact, the tariffs have the potential to raise the cost of these products by 25 percent, inflicting particular harm on small and medium-size businesses.

ETA respectfully expressed to the USTR our position that imposing tariffs on cash registers and POS devices is not an effective way of protecting American intellectual property and comes at an unacceptable cost. Though the proposed tariffs are not yet final, ETA is advocating for these devices to be excluded from the final package.

As your advocates for the payments industry at home and abroad, we will continue to be proactive in engaging international leaders and issues so that we continue to foster a positive policy environment for payments technology companies. **TT**

Scott Talbott is senior vice president of government affairs at ETA. For more information, please contact Talbott at stalbott@electran.org or Grant Hannah, government affairs coordinator, at ghannah@electran.org.

The advertisement features a central visual metaphor: a rocket ship with the USAePAY logo on its side is shown launching out of a fishbowl, creating a large splash of water. To the right, another fishbowl is shown containing several goldfish. The text 'USAePAY 20 YEARS' is positioned in the upper right, with 'ALWAYS AHEAD OF THE GAME' in a teal box below it. At the bottom left is the phone number '866.490.0042', the website 'USAePay.com' is in the center, and 'USAePay' with social media icons is at the bottom right.

Buying With Biometrics

As U.S. payments increasingly embrace biometrics for authentication purposes, new products and considerations emerge

By Christine Umbrell

The integration of biometrics into smartphone technology has sparked a slow but steady progression into U.S. acceptance of biometric payments. Just a few years ago, payments was a completely separate space from biometrics—the process by which a person’s unique physical or behavioral characteristics are detected and recorded into an electronic device or system. And while global mobile biometric market revenues totaled just \$6.4 billion annually in 2016, they are expected to reach \$50.6 billion annually by 2022, according to a recent report from Acuity Market Intelligence.



Learn more about the next generation of digital identification methods that will be affecting the payments business. Log in and listen to the “Digital Identity” educational sessions from TRANSACT. Visit www.eventscribe.com/2018/TRANSACT/login.asp for access.



Several types of biometric identifiers are being incorporated into or studied for mobile device authentication and other forms of payments—from Touch ID to contactless fingerprinting, to facial recognition and iris scanning, and beyond. It is expected that, as more biometric identifiers become available and are used in conjunction with one another, multifactor biometric authentication may become a reality. But there is still a ways to go before financial institutions, consumers, and payments professionals truly accept biometric payments as business as usual.

The Rise of Touch ID

The introduction of fingerprint identification to Apple and Samsung phones has played an extremely important role in normalizing biometric-related payments, says Jerome Ajdenbaum, vice president of fintech and business development at IDEMIA. “Apple Pay was a game changer,” he says. Before its inception, biometric technology was focused mainly on access control and border control usages, leveraged primarily by the government, police departments, and immigration officials, he explains.

When Apple incorporated biometrics into its smartphones in 2013, “it was not immediately clear whether customers would be in favor of paying with biometrics,” says Ajdenbaum. “Apple Pay totally changed that. The boom we see now has been enabled by Apple Pay.” Millions of consumers are now using Touch ID—a fingerprint recognition feature—to unlock Apple devices and make purchases.

Samsung Pay debuted soon after, allowing users to download an app to add their credit, debit, and gift card information so that consumers can use Samsung Pay at the register, authenticated with a fingerprint scan or password. In addition, Android Pay users also are being given the opportunity to leverage fingerprint biometrics as an authentication mechanism.

“There is mass consumer adoption of [these] technologies, such as Apple Touch ID and similar capabilities on Android devices, and, more recently, facial recognition, such as Apple’s 3-D-sensing Face ID on the iPhone X,” explains Robert Capps, VP and authentication strategist at NuData Security.

“In the past two years, there has been tremendous growth” in the biometric payments space, agrees Tom

DeWinter, manager of business development for Iris ID Systems. An ever-increasing number of entities are linking fingerprints and faceprints to payments.

But biometrics alone in these types of devices do not enable the payments—they are linked to a mobile device where card information is stored, DeWinter points out. Layering the technologies helps reduce fraud, he says. The biometrics associated with Apple Pay and Samsung Pay is “unlocking the device that makes the payment.” It’s “another verification tool [authenticating] that the person using the device is the individual authorized to make payments with that device,” says DeWinter.

As consumers grow accustomed to these technologies, they also become more accepting of allowing their fingerprint—and other biometric data—to be used in new ways. Now “we can start thinking about other applications” for biometrics, says Ajdenbaum. For example, during some very high-risk transactions, some banks and credit card companies are asking purchasers to take a selfie with their phones for authentication purposes—and this technology could be expanded to lower-risk purchases, Ajdenbaum predicts.

Leveraging Fingerprint Identification

With the rise of consumer acceptance of fingerprint authentication on mobile devices has come increased interest by financial institutions. At the end of 2014, just two banks offered Touch ID as an authentication option. Since then, many leading banks—including Chase, Bank of America, FIS, Citibank, and Wells Fargo—have introduced support for the technology, according to Juniper Research.

In addition, several companies are currently experimenting with fingerprint authentication of credit cards. Two different methodologies are being investigated, according to Ajdenbaum: fingerprint on the payment terminal and fingerprint on the consumer’s card.

For the latter, “some cards can embed a fingerprint reader right on a plastic card. You would insert the card normally into the terminal, then put your fingerprint on the part of the card that’s not inside the terminal, or simply hold the card with your finger on the sensor over a contactless reader,” explains Ajdenbaum. His company has introduced a product, called the F.Code, that allows customers to authorize payments via a fingerprint sensor embedded into an EMV-compliant card, instead of a PIN code. The consumer’s identity is verified when an IDEMIA algorithm matches the owner’s fingerprint to the template stored within the card. This technology is being trialed in Japan, France, and elsewhere.

“Most people prefer this method, where the fingerprint stays on the consumer’s own device,” rather than being stored in a merchant terminal or a database, says Ajdenbaum. “Banks and credit card companies are looking at these experiments to see how they go, and how consumers react,” he says.



AS FINGERPRINT AND FACIAL RECOGNITION BIOMETRICS BECOME MORE ACCURATE AND SECURE, **OTHER TYPES OF BIOMETRICS ARE STARTING TO GAIN GROUND.** VOICE BIOMETRICS, IRIS BIOMETRICS, AND BIOMETRICS BASED ON "HOW YOU TYPE" ARE CURRENTLY UNDER DEVELOPMENT.

Enhanced Security

One of the main benefits associated with Touch ID and other biometrics associated with payments is increased security. Many consider the use of Touch ID, used instead of or in addition to PIN authentication, as more secure than other types of mobile transactions, because the card information is never collected by the merchant—the services tokenize account information and authenticate it with a fingerprint stored in the device, rather than in a database.

For card companies, this feature may be considered a limitation of Apple Pay and similar payment systems used in conjunction with Touch ID because “you don’t know who is paying,” notes Ajdenbaum. “With Apple Pay, you authenticate the user, but you don’t know exactly who you are authenticating,” he says. “That piece—identification—is important to the banks, and they will want to link the fingerprint to a verified identity.” But keeping the fingerprint within the consumers’ devices allays some privacy concerns.

Still, Ajdenbaum says the use of biometrics is “a step forward” for security. Take, for example, a chip-and-PIN card. Adding in biometrics, “it’s at the same level as chip and PIN, plus there’s an increase in security since it also requires a fingerprint,” he says. “The security inherent in biometrics is never perfect, but it’s very high because with biometrics you can authenticate a cardholder, you can prove [that individual] actually authored

the transaction,” he says. Plus, he notes that it’s more difficult to steal a fingerprint than a PIN number.

Fingerprints aren’t foolproof, however, because they are left behind whenever you touch something, says Ajdenbaum. But if the fingerprint is kept within a smartphone or within a consumer’s credit card, even if a highly skilled attacker would manage to impersonate a user, a stolen print could only be used to defeat one device—rendering the scam impossible to scale.

Touch ID on mobile devices also yield higher conversion rates, says Benny Silberstein, founder of Payrix and a former ISO agent. “Using Apple Pay or Samsung Pay means the transactions are more secure,” he says. “I know that a transaction made this way was authenticated and verified by the cardholder” because the cardholder had to use biometrics to unlock the phone and make the payment on a mobile device. “So, these transactions lead to fewer chargebacks.”

Privacy Issues

The thought of linking a payment to a physical trait can create resistance to biometrics among some consumers and poses a barrier to wider acceptance. “There is a ‘perceived’ notion that something about you is being given away,” says Ajdenbaum. But individuals have already given up this information when crossing borders and for access control purposes, he notes. “When you enter a country, you will agree to leave a fingerprint—everyone accepts [that requirement] for border control.” For consumers, Ajdenbaum points out that it is a matter of each individual evaluating his or her threshold regarding privacy. “Am I ready to give my fingerprint for public transit? For payments? For other uses?” Because of Apple Pay, more people are willing to answer “yes” to these questions, he says.

Confining fingerprint data to an individual device assuages some of the privacy fears. With Touch ID Apple phones, for example, the fingerprint is stored only in the phone—not in any database, so you’re not sacrificing privacy, says Silberstein. “But the drawback is, when you get a new phone, you need to input a new biometric.”

Ajdenbaum offers a similar point of view regarding fingerprints stored within an individual card, rather than a payment card reader, and believes that consumers will increasingly understand their privacy is not being compromised with this technology.

Stronger and more secure biometric authentication is already underway in some other countries and may be possible in the United States soon, “but that also means putting additional friction on the consumer,” says Capps, “which could prevent transactions from occurring” in a country that prioritizes privacy. Biometrics integrated with payments are more common in countries that have national ID systems. Some countries in Latin America and Asia, for example, have full biometric capabilities that ensure the presence of the human and leverage a high security level for payments, says Capps. But the United States “lack[s] a central repository of authentication data” that would make such a system possible here, he says.

Privacy concerns in the United States are preventing companies from developing and deploying facial recognition solutions

in a meaningful way, says Capps. "It's unclear how U.S. consumers will feel about going and being identified solely by facial recognition," he says. More than 9.7 billion consumer records have been lost to data breaches since 2013, Capps notes, "so most companies are taking a cautious approach to make sure they deploy biometrics solutions in a secure way."

Regions with lower privacy expectations are experiencing greater innovation in biometric payments, Capps adds. "Consumers in [certain] countries have grown used to camera surveillance and Internet monitoring as a normal way of life—there's no expectation that you're not being watched," explains Capps. In China, for example, Alipay has launched a 'Smile to Pay' service in a limited trial. This service allows Alipay users to au-

thenticate their payments without using wallets or smartphones, instead using a combination of facial scanning and inputting their mobile phone numbers.

What's Next?

Right now, a variety of biometrics options and capabilities are being rolled out in the United States, says Capps. "The customer convenience of biometrics will consistently rise in some sectors, but most biometric options in the U.S. are still focused around a mobile device with a local user using that device," says Capps. "True physical verification [without a mobile device or password authentication] is not here yet."

Biometric technologies come in a wide variety of cost

Are Facial Recognition Technologies Prejudiced?

Facial recognition technologies are on the rise, used for identification, access control, and even mobile phone security and payments purposes. But some are questioning the role biases may play in today's facial recognition systems.

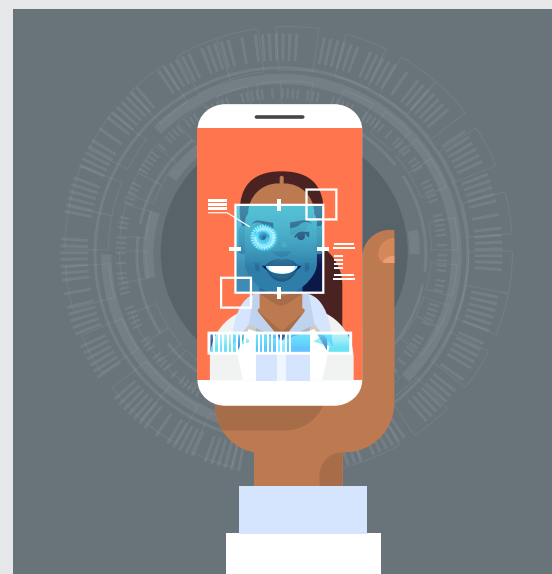
In February, researchers at the Massachusetts Institute of Technology (MIT) and Stanford University released their findings of a study indicating that three commercially tested facial-analysis programs from major technology companies demonstrate both skin-type and gender biases. Their experiments found that the programs' error rates for determining the gender of light-skinned men were less than 0.8 percent, but error rates associated with darker-skinned women were more than 20 percent for one company's program and more than 34 percent for the other two programs.

Lead researchers Joy Buolamwini and Timnit Gebru noted that the findings raise questions about how today's neural networks, which learn to perform computational tasks by looking for patterns in huge data sets, are trained and evaluated. "What's really important here is the method and how that method applies to other applications," said Buolamwini, a researcher in the MIT Media Lab's Civic Media Group. "The same data-centric techniques that can be used to try to determine somebody's gender are also used to identify a person

when you're looking for a criminal suspect or to unlock your phone. And it's not just about computer vision. I'm really hopeful that this will spur more work into looking at [other] disparities."

The American Civil Liberties Union (ACLU) also has chimed in to the conversation, noting that some systems are used without the permission of the individuals being recognized by the software. "Unlike many other biometric systems, facial recognition can be used for general surveillance in combination with public video cameras, and it can be used in a passive way that doesn't require the knowledge, consent, or participation of the subject," the ACLU said in a statement. "The biggest danger is that this technology will be used for general, suspicionless surveillance systems. State motor vehicles agencies possess high-quality photographs of most citizens that are a natural source for face recognition programs and could easily be combined with public surveillance or other cameras in the construction of a comprehensive system of identification and tracking."

In May, the ACLU released a statement calling on Amazon to stop selling its Rekognition program, a service that allows users to build applications to search, verify, and organize images. The technology is already in use in Florida and Oregon, and "government agencies



in California and Arizona have sought information about it, too," according to the ACLU. The organization said the technology is being used to power "dangerous surveillance that poses a grave threat to customers and communities already unjustly targeted in the current political climate."

As more U.S. consumers turn to mobile devices secured by facial recognition capabilities, payments professionals will need to keep an eye on the criticisms associated with the technology and ensure that only the most updated and accurate versions of the technology are being used in association with payments.

points and accuracy ratings, and are advancing all the time, says DeWinter. The fingerprint technology associated with Apple devices has grown more advanced since its initial implementation. “Every year, fingerprint technology gets better and more sophisticated,” he explains. Facial recognition technologies also are evolving, and currently range from 2-D imaging to more sophisticated infrared 3-D imaging.

Silberstein believes Touch ID phone usage will continue to grow, and mobile wallets will see increased usage as well. While it has taken longer than originally expected for mobile wallets to gain acceptance in the United States, more companies have begun introducing them, he says.

As fingerprint and facial recognition biometrics become more accurate and secure, other types of biometrics are starting to gain ground. Silberstein notes that voice biometrics, iris biometrics, and even biometrics based on “how you type” are currently under development.

In fact, iris technology—which has benefits of being both noncontact and highly accurate—has grown significantly over the past five years and has come down in price since first developed, says DeWinter, whose company is one developer of the technology. Currently popular in Europe and Asia, he says, this technology is being used “for both security and convenience” for identification purposes—for example, at border crossing checkpoints and airports. The technology is also being used in high-end health clubs and even daycare centers, as well as by “leading-edge time and attendance vendors” to offer solutions for clocking in and out and similar functions. In addition, newer Samsung devices feature iris scanning technology.

Iris solutions are beginning to be integrated with payments, according to DeWinter. “In universities and in companies, they’re tying iris technologies into dining programs, using biometrics as the authorization to authenticate and pay for food and health through a loyalty program,” he explains. Irises are linked to employee ID programs and to accounts university workers have linked with their identity.

DeWinter also notes that iris data is “very stable for a lifetime.” Whereas other biometrics—faces and fingerprints—tend to age and change slightly or degrade over time, iris data is captured behind the lens of the eye, so it remains more consistent over an individual’s lifetime.

With the various biometric technologies getting more advanced month by month, expect to see increasing acceptance and new models for biometric payments popping up in the future, says Ajdenbaum. He envisions a day when “contactless entry” popular in some access control models evolves into contactless purchasing.

For example, some stadiums currently allow visitors to enter with a wave of their hand, which is authenticated using touchless 3-D fingerprint technology. “Right now, that technology exists for access control. But maybe you could continue that biometric identification to the concessions area, and pay for concessions there with a wave of your hand—and

use it everywhere in the venue,” suggests Ajdenbaum.

He cautions that some biometrics are better than others, and more suited to particular applications. Facial recognition technologies are easy to implement when you have a camera on a phone or computer, according to Ajdenbaum—but while these technologies can be embedded in a payment terminal, they cannot be embedded in a card. He also notes that iris is a secure method but requires specific hardware for recognition.

As more stakeholders begin experimenting, Ajdenbaum predicts that several types of technologies—fingerprint, facial recognition, iris, etc.—may co-exist “until we may find a ‘winner.’”

A New Chapter for Payments Professionals

Moving forward, biometrics alone “are not the total solution and must be secured and layered with other factors depending on the risk and what is being safeguarded,” says DeWinter. But it’s important for all stakeholders to understand this new sector and where it is headed.

For payments professionals in particular, new technologies are “pushing and pulling” reluctant adopters into the market, says DeWinter. Payments professionals who seek an understanding of the latest advances will be able to educate their customers and appropriately plan for the new future of payments—one where security may be enhanced and transactions may become easier.

“Anything payments professionals can do to reduce friction and increase convenience is going to help increase transaction volume,” says Capps. “Using passive and local biometrics can help reduce risks, remove unnecessary friction, and reduce the potential of fraud.”

As changes big and small begin to impact the biometric payments space, it is important for payments professionals to follow the evolution, says Silberstein, who previously worked for an ISO. “Coming from the ISO world, we were very disconnected from the actual transaction stream—transactions went straight to acquirers. We had very little data,” he explains. “We only had the merchant credit card number. ISOs typically don’t gather real data on who’s filling out the applications.” With different types of biometrics coming to market, it has become possible to gather more data—and know more about your clients.

For payments professionals, “it’s important to recognize the value of biometrics and what it brings to the table in verifying the identity of consumers,” Silberstein says. “This will lead to a more secure payments infrastructure.”

“The rise of biometrics in payments is happening now,” adds Ajdenbaum. He encourages payments professionals to start looking at and understanding the different solutions. “Start monitoring this space. It’s the right time to get started.” **TT**

Christine Umbrell is a contributing writer to Transaction Trends. Reach her at cumbrell@contentcommunicators.com.

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Only at TRANSACT

Highlights of unique conversations, announcements, and technologies from the payments industry's premier event

The future of payments lies in stronger relationships and collaboration. That was the message from more than 200 exhibitors and 120 speakers who gathered in Las Vegas April 17-19 at the Mandalay Bay to discuss the future of commerce and technology. And while the new and existing businesses in the space face disruption from many sides, innovation and partnerships can help those companies face market forces head on.

A plethora of keynote speakers advised thousands of payments professionals from around the world on critical industry topics, including long-term business strategies for legacy companies, the role of technology and next-generation security applications in advancing commerce, and the merging of software and payments. Several prominent companies also used their time in front of business leaders to make major announcements.

In discussing the continued evolution of the point of sale to accommodate more than card transactions, Osama Bedier, founder and CEO of Poynt, and Irv Henderson, CEO and co-founder of talech, announced a partnership between their two organizations to incorporate talech's software onto Poynt terminals.

"Three years from now the majority of all terminals will be smart. Five years from now, it'll be hard to find a dumb terminal," said Bedier. "Transaction processing was one of the most transformative software capabilities in the history of man, but it's become commonplace, and now acquiring is about delivering more integrated software solutions to those businesses. And so, if you're not doing that, then somebody else who is will take over the business."

Henderson agreed: "I think it'll be very difficult five years from now for you to walk into the corner store, and that corner store not [have] a next-generation POS," he said. "Customers are demanding true experiences from the person who's walking into their stores selling them services."

Other speakers emphasized a similar resolve to provide best-in-class customer experiences. During their discussion about the future of digital payments, Jess Turner, senior vice president of digital payments for Mastercard, TS Anil, head of global products for Visa, Amy Parsons, senior vice president and head of global acceptance and customer experience for Discover Financial Services, and Garrett Goff, director of global payments, fraud, analytics for Netflix, offered their endorsement of the EMVCo Secure Remote Commerce (SRC) technical framework, and the card networks announced they will leverage EMV payment tokenization.

Mastercard has evolved the checkout mechanism on its MasterPass service to support the SRC standard, Turner said during her introduction to the discussion. She also explained that "much like a physical terminal



TS Anil, Visa



Jess Turner, Mastercard

on the merchant's counter today, [Mastercard believes] that SRC can bring together [the digital commerce] experience with one common, consistent checkout button."

Anil announced Visa's Digital Commerce Program, which builds off of the SRC standards. It's designed to create the "technology and the resources for everybody in the ecosystem—merchants, acquirers, gateways, commerce platforms—to build with us on those

standards and take the leap forward" into a standardized and secure digital commerce environment, he told attendees.

Exhibitor Launchpad

Of the 200 exhibitors at TRANSACT, many used the event as an opportunity to publicize new products and services. "We know there are a lot of influential people that come here," said Claire Gates, CEO of Paysafe's Pay Later Solutions, based in London. "They are a distribution channel that is sometimes the best kept secret in America."

Consequently, Paysafe announced the June U.S. launch of its Pay Later – In Store next-generation financing solution. The tablet-based app allows customers to apply for and secure financing at the point of sale in less than five minutes. Merchants are able to offer variable interest rates and installment plans in three, six, nine, 12, or 24 months. Consumers are educated on the process and sent the contract via email and through a dedicated portal. Merchant settlement happens the next day.

The solution also makes for a discreet customer experience. "It's very sensitive information that people are sharing," said Gates. "They don't want to necessarily do it in an open forum."

Like Paysafe, many other exhibitors took advantage of the event, including these:

- Silicon Valley-based Apptizer showcased its order-ahead mobile solution and launched its self-serve omnichannel kiosk on Clover Station, the Verifone Carbon platform, and Poynt systems.

"We want to be the de facto for order ahead in all the smart terminals," explained Dinesh Saparamadu, founder and CEO, who explained that his target end users are small-to medium-sized businesses. The company chose to showcase the announcement at TRANSACT to educate the market on how the solution enhances the existing payments ecosystem. "I think that's what a lot of the VCs and others don't understand . . . we are not really disrupting the industry so that people can go out of business," he said. "You can upsell Apptizer to current merchants, and we will actually help them with the whole solution selling process," he said. "That becomes part of their value [proposition]."

- CardFlight announced the release of its SwipeSimple Register, an additional product on top of its SwipeSimple basic line that has

been on the market for a few years. It's aimed at merchants that are "still using pretty basic point-of-sale systems," said Peter Wagener, VP of engineering. "We're trying to help people ... get to a system that they can use that's simple enough for them to be able to still take cash and credit cards but be able to join us in a new and more cloud-based world of digital commerce."

The SwipeSimple line is resold to merchants via acquirers and ISO channels; CardFlight offers customer service to those resellers and a gateway to target the credit card processors.

• Ingenico Group unveiled the Moby/C150

electronic cash register (ECR), an EMV certified, Android-based tablet POS solution. The device boasts an open architecture for integration with U.S. developers and independent software vendors' (ISVs') solutions, and merchants can download apps through third-party mobile app stores.

Ingenico is getting the Moby/C150 to market through both direct and indirect sales channels. "On the indirect side, ISVs and developers are able to leverage our mPOS EMV SDK and gateway to get to market quickly" because they are avoiding the EMV certification process, said Ryan Ahern, payments solutions manager. The company chose

TRANSACT to publicly present the ECR due to timing and because many of its ISV and developer partners were in attendance. "To have a new solution that can help further build out their offering with a tablet POS ECR made a lot of sense," said Ahern.

• Vantiv, now Worldpay, introduced the handheld PAX A920 to its line of SmartPay series terminals, which use an Android-based operating system with preloaded apps customized to a merchant's business. The line expansion "provides a different form factor for our merchants, provides a little more mobility with wireless capabilities, and also allows us with our partner AEVI to run the same software platform across the board," said Joe Pellar, SMB product manager at Worldpay.

Worldpay uses "concierge support teams" to educate bank and ISO partners on the solutions and selling. "It's a whole new world out there for all of us, and so [we're] making sure they understand those things before they really start approaching their merchant space," Pellar added.

Software as a Spotlight

With ISVs among the fastest growing sales channels for U.S. merchant acquirers, ETA's new integrated payments and software session track brought together industry leaders to discuss how software is enabling the payments industry to meet merchant needs.

While the acquiring industry as a whole has a volume growing rate of about 8 percent, the ISV distribution model is growing at a rate of 30 to 35 percent a year, according to Marc Abbey, managing partner at Accenture, who kicked off the five-session track with an overview of the evolving marketplace. "Our best guess is that the ISV distribution model now represents something like 10 to 20 percent of the volume in the industry, which is a rapid increase of just a few years ago," said Abbey.

Abbey argued that as software integration proliferates across the point of sale, developers are becoming increasingly knowledgeable about payments and monetization. Consequently, they are now emerging as a competitor as well as a new distribution channel for acquiring. That's important because it will have "a direct bearing on product development" Abbey said. "We're not too far off from all roads kind of leading through software point of sale for product enablement."

He also predicted fundamental change to sales and distribution models and long-term

Nurturing Payments: Meet the Incubators

Over the years, TRANSACT has become the hub where payments industry executives meet startups showcasing the next generation of payments innovation, and this year ETA took that one step further with the dedication of show floor space to the Next-Gen Park. The area provided space for incubator/accelerator programs and their startups to host meetings, showcase products, and network with payments professionals and ETA member companies.

This inaugural event united four distinctive programs:

Advanced Technology Development Center. Founded in 1980, ATDC is a technology incubator for the state of Georgia, where entrepreneurs "learn, launch, scale, and succeed," said Jeff Gapusan, fintech director. "We now have about 135, what I call 'accelerate companies,' which are actually launching their products. They span everything from fintech to health care to IoT concepts in the blockchain."

Comcast NBCUniversal Innovation Tech Center. Dubbed "The Farm," the program is a combination accelerator, incubator, and innovation center, said Burunda Prince Jones, managing director. "At The Farm, we actually have an incubation, we have co-working space, we have accelerator space, and we have hardware space as well." Based in Atlanta, The Farm offers a variety of programs to support and nurture select startups—primarily in the mobility, connectivity, and communications spaces—including a 12-week accelerator directed by Boomtown.

Center of Innovation and Entrepreneurial Development at Clark Atlanta University. CAU "offers undergraduate, graduate, and professional degrees as well as certificate programs to students of diverse racial, ethnic, and socioeconomic backgrounds," according to a university statement. The center collaborates with The Farm to acclimate budding entrepreneurs to the realities of the business world. "We try to get them to a point where they can actually pitch, and in some cases, we've gotten funding for their companies," said Bruce Berger, director.

Queen City Fintech. This 12-week, nonprofit accelerator based out of Charlotte, North Carolina, focuses on customer acquisition and preparing fintech entrepreneurs for funding opportunities and introducing them to beneficial networks. "We're just looking to make it a little bit easier, in whatever capacity that we can—whether it's access to capital, thought leadership, or brokering those relationships with the big banks," said Pasha Maher, associate director. "However we can help, we do."



Exhibit hall ribbon-cutting ceremony

compression in transactional revenue because these new competitors “have different characteristics and, in some cases, have pretty formidable advantages.” And, acquirers will increasingly become developers in key verticals.

Abbey likened ISV emergence to the advent of e-commerce in the 1990s: “I think we’re at that moment ... where it has a lot of the same characteristics. There are a handful of players in a meaningful position in the market right now,” he said. “But nevertheless, a relatively small community of providers who have specialization on this topic are growing very rapidly. There’s every reason to believe that this community, this distribution model, will capture outside growth over the foreseeable future.”

The emergence of payment facilitators also is a byproduct of the impact of software and technology, rendering the industry both challenging and exciting. The new payment facilitator track at TRANSACT united key business leaders, including all four card brands, to discuss how the traditional payments networks are characterizing these new entrants into the payments ecosystem.

“[Payment facilitators are] the natural progression of where our industry is going,” said Julius Alexander, head of payment facilitation and emerging markets for Discover Global Network, during the “Card Brand Strategy” panel discussion—one of eight sessions in the payment facilitator track. He explained how technology partners are offering hyper-focused business solutions, of which payments are a part. “As that continues to evolve, we’re going to see more and more verticals becoming more interested in those types of solutions over just the payments experience, because they’re

solving many other business challenges.”

Jeff White, VP of acquiring channel management at Mastercard, agreed, recounting the days of “knuckle busters” that performed a single function at the point of sale. “We’ve been able to take advantage of smart technologies ... and integrate in other solutions beyond payments to help meet the needs of businesses,” he said. “It gives us a new look in the way that we’ll interact with businesses, and it gives everybody in this audience the opportunity to become a solutions provider” and not simply a payments provider.

But with great opportunity also comes great responsibility, said Robin Leidenthal, VP of merchant sales and solutions for Visa, who reminded attendees that the traditional acquirer business model has evolved over several decades. “We know what the risks are,” she said. “As we’re thinking about new acceptance models—whether it’s a payment facilitator or something else—we’re not throwing out what we’ve learned over the decades. ... We all have our [card brand] rules, and they’re meant to maintain governance and to keep the payment system safe and to make sure that card holders have a great experience, and nobody loses their shirt.”

Because payment facilitators fundamentally are trying to solve another challenge other than payments acceptance, their existence will force the rest of the payments industry to re-examine and streamline its strategy, said Mickey Hansen, VP of global acquisition capabilities for American Express. “If you can make it simple, you can be in it. If you don’t, you’re not going to be included,” he said. “[Industry change] pushes us to look at simplifying, evolving how we think.”



Modo

Two Startups Take Home \$35,000

The 2018 Payments Pitch-Off, sponsored by Vantiv, now Worldpay, featured 10 participants who pitched their groundbreaking payments solutions before a panel of venture capitalists and payments executives.

To qualify for the Pitch-Off, startups had to offer a product that leverages software in a new and interesting way to solve a payments industry challenge. Participation was limited to companies earning less than \$5 million in annual revenue and with less than \$15 million in funding and fewer than 50 employees.

Modo, a cloud-based payments utility that works with banks, networks, payments processors, and their partners to enable interoperability between systems, was the overall winner and received a \$30,000 cash prize sponsored by Worldpay.

Menuifu, the developer of the Restaurant Go app, was voted the audience favorite and received a \$5,000 cash prize sponsored by Loeb & Loeb LLP. Restaurant Go is a contactless and human-free payment solution, enabling diners to pay at the table or anywhere in the restaurant.

Retail in the 22nd Century

As researchers and experts predict a seamless integration of digital technology and current reality, TRANSACT convened a panel of experts to weigh in on the changing retail experience, realistic timetables, and consumer behaviors. Here are the eight top takeaways from that conversation:

1 Technology is here and evolving. Over the next two to three years, the industry should expect to see new retail technologies—Internet of things (IoT), artificial intelligence (AI), machine learning, augmented reality (AR), and voice recognition—to emerge and merge, said Tara Newbould, VP of product planning and strategy for Vantiv, now Worldpay. “Artificial intelligence-enabled IoT solutions, those types of things,” she said.

2 AI can optimize back-office processes and employee retention, too. Sure, we’ve heard about AI for improving the customer experience, but what about helping out behind the counter? “We’ve talked about using voice where someone in the back, from a kitchen production perspective, could talk to Alexa or a digital assistant and say, ‘Hey, how do I make a market salad? What are the steps?’” said Patrick Bragg, digital payments lead for Chick-fil-A. The technology can help improve the employee experience and, in turn, turnover rates. “We really see the [AI] differentiators being there” for back-office solutions as well as in inventory planning, he said.

3 AI solutions will be more tiered and tied to loyalty. “Think of AI, true AI, as a rocket engine that is really big and needs a lot of fuel,” said Irfan Nasir, head of product and solutions for Ingenico. “Fuel is the data, and you need a huge analytic engine.”



Patrick Bragg, Chick-fil-A

Large enterprises will need much more data to control the supply chain and customize the consumer experience, than a small merchant that wants to track inventory and keep customers happy, he explained. “The question is going to be who’s going to generate the data? And how do you make sure the consumer is willing to share the data?” Loyalty programs are likely the answer.

4 Machines can’t do it alone—at least not for now. We’ve all had the experience of receiving an irrelevant, not-so-targeted digital ad. The reason for this is that the data engines are not “smart” enough yet, said Nasir. They are still making simple associations based on limited data.

That’s where humans come in, said Bragg, by giving merchant sites feedback when information is not relevant. “I think if we can start to get customers to get used to that concept of ‘help us better understand what’s relevant to you,’ that’s helpful.”

5 Cash will stick around for a while, but some payment types may not. People need to have “deep faith in technology” before they are willing to leave their physical wallets at home, according to Newbould. “I don’t know if anybody’s quite there yet. If your battery runs out or the terminal’s down or whatever the case may be, you’re left there with no way to pay,” she said.

Newbould predicted a convergence of payment types, specifically peer-to-peer payment services and mobile wallets. “Do we really need six different types of mobile wallets? Probably not. As a merchant, I want to be equipped with any way [customers] want to pay, but at the same time, you’re going to see some consolidation probably on the payment streams.”

Cost implications for accepting certain forms of payment also may eventually turn the tables, said Bragg. “There are just going to be payment methods that become too costly to manage. And that’s

why we're seeing some companies move away from cash."

6 "Some" adoption behavior is generational. As millennials move into the mainstream, payments technology adoption will get easier, panelists agreed. But cultural and social elements also factor in.

"Some of that behavior from the millennials is because of their ages, [and] those behaviors will change over time as they have different financial goals," said Newbould. "Some of it, too, is cultural. We're taking a very North American focus, too. But you know a lot of this, as companies are getting more global, they're going to have to be equipped to take payments any way their consumers want."

Nasir contended that progression also is a byproduct of social acceptance of technologies in other areas of life. "As we accept certain technologies, certain solutions ... it's more acceptable to have those in

for the payments themselves," he said. "In my opinion, that's just a natural evolution."

7 Hyper adoption of AR and gamification can fade to hyper abandonment.

Pokemon Go is a prime example. The panel concluded that the AR experience fell short because it was not "organic" for players. For companies that offer a "consumable product, augmented reality is going to have more of an engagement presence about it," said Bragg, who predicted traditional retailers, such as clothing companies, will have more success with the technology.

8 Differentiating service models is key.

Some people don't like to be bothered by a sales associate—either real or virtual. Others do. Eighteen to 20 percent of people who were looking for in-store help but did not find it, spent 25 percent less than others in the store, according to Nasir, who cited an anecdotal study. Knowing the difference between customer preferences and allocating resources appropriately will become increasingly necessary, panelists agreed. Self-serve kiosks are one answer to the challenge. **TT**



Catch up on what you missed from TRANSACT from the office or on vacation. Attendees who purchased a full-conference pass can download slides and listen to educational session audio recordings. Access the full event schedule at <https://bit.ly/2qc9pYv> and log in. Browse through the schedule—any agenda item with a speaker icon will have an audio recording. Click on the MP3 Audio button to listen to or download the recording. Enjoy!

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Mobile Payments in Emerging Markets

Expanding the base of the pyramid through mobile payments

By ETA's International Committee

Developing and emerging economies present a range of interesting opportunities for furthering the adoption of mobile payments. Growth in these transactions is fastest in countries like India and the Philippines, which have only recently embraced mobile payments. In fact, mobile payments are expanding access to credit, savings, and other financial tools for consumers who have never had that access in the past. Thus, one promising strategy for growing mobile payment acceptance globally is to view it as a vehicle for financial inclusion.

Mobile payment schemes look very differently depending on overall levels of economic development as well as consumer demographics and preferences. In emerging markets, mobile money products (typically SMS-based) and QR code-based mobile wallets have demonstrated the greatest traction. But why have they been so successful, and what can they teach us about the increasing adoption of mobile payments?

Consider the large base of consumers in emerging markets who relies on SMS and QR codes for high-frequency, low-value transactions. One example is M-Pesa, the mobile

phone-based money transfer, financing, and microfinancing service that is currently active in 10 countries: Albania, the Democratic Republic of Congo, Egypt, Ghana, India, Kenya, Lesotho, Mozambique, Romania, and Tanzania. India alone has a population of nearly 1.3 billion people. The other nine countries have a combined population of 362.5 million. Average annual gross domestic product (GDP) per capita across the 10 countries is \$7,410 (considered upper middle-income by the World Bank). M-Pesa launched in Kenya in 2007. In 2016, there were 23 million M-Pesa users in the country—nearly half the Kenyan population and three quarters of the world's 29.5 million M-Pesa users.

The widespread use of M-Pesa has allowed Kenyan consumers to access the global e-commerce ecosystem without needing credit or debit cards. In February, Google Play began accepting payments via M-Pesa. In April, Safaricom, a communications company in Kenya, announced a collaboration with PayPal that would allow M-Pesa users to pay online anywhere PayPal is accepted. M-Pesa transactions also have helped people access government services. For ex-

ample, *Business Daily Africa* reports that the Kenyan Ministry of Agriculture uses M-Pesa to pay out fertilizer subsidies. Mobile money is a critical tool for facilitating person-to-person, employer, and government transfers. Across the board, access to mobile money helps individuals protect against financial shocks and smooth their consumption.

M-Pesa works because it leverages a largely pre-existing network of agents—Safaricom dealers and retailers like petrol stations and supermarkets. Essentially, M-Pesa simply adds two additional services—namely account registration and cash disbursement—to those existing distribution networks. Building a network that relied on credit and/or debit card payments likely would not have worked as well in Kenya. According to 2017 World Bank data, 37.6 percent of Kenyan adults own a debit card and just 5.7 percent own a credit card. Meanwhile, 87 percent of Kenyans owned a mobile phone as of late 2016.

That success suggests that a product built on a credit or debit network has potential in markets with robust card usage. While credit card ownership is low in most low-income economies (Mozambique tops the list at 9 percent credit card ownership), debit card ownership varies more widely. For instance, a debit-based mobile payment network might work well in Mongolia, a lower middle-income economy where 75 percent of adults own a debit card. In fact, an eMarketer survey found that 63 percent of respondents in Mongolia preferred using mobile payments to other payment methods (second only to China at 64 percent). While Mongolia's largest financial institution, Khan Bank, has made great strides in mobile banking and recently launched a mobile money product, there are still many opportunities left untapped.

For consumer payments at the point of sale (POS), QR codes are one of the quickest and most cost-effective ways for merchants

M-Pesa Operating Country	Population (Millions)	GDP Per Capita
Romania	21.5	\$24,000
Egypt	97.0	\$13,000
Albania	3.0	\$12,500
India	1,281.9	\$7,200
Ghana	27.5	\$4,600
Lesotho	2.0	\$3,900
Kenya	47.6	\$3,500
Tanzania	54.0	\$3,300
Mozambique	26.6	\$1,300
Democratic Republic of the Congo	83.3	\$800

Source: CIA World Factbook

	Average Credit Card Ownership Rate (% of adults 15+)	Average Debit Card Ownership Rate (% of adults 15+)
Low-Income Economies (GNI per capita < \$1,005)	5.95%	9.04%
Lower Middle-Income Economies (\$1,006 - \$3,955)	13.27%	22.02%
Upper Middle-Income Economies (\$3,956-\$12,235)	46.09%	62.74%
High-Income Economies (GNI per capita > \$12,235)	63.11%	81.29%

Source: The World Bank

to accept electronic payments. Merchants only need to print the code on a piece of paper. But as the merchant's business grows, he or she may consider adding more functionality—perhaps an mPOS dongle that attaches to his or her phone or, eventually, a standalone terminal. By enabling QR code mobile payment acceptance, payments companies can create opportunities to bring merchants into the card system.

Consumers are rapidly embracing QR code mobile payments. China has the largest base of mobile payment users in the world at 349 million people (compared to the United States' 60 million), representing a quarter of Chinese consumers. The dominant mobile payments platforms in China, Alibaba's Alipay and TenCent's WeChatPay, are QR-based. This suggests that the majority of mobile payment transactions in China take place via a QR code.

QR code shoppers in coastal Chinese cities also want to pay with their phones while they are travelling abroad. Their increasing demand is driving mobile payment acceptance, particularly with merchants who frequently do business with Chinese consumers. For instance, Adyen and Alipay are expanding their partnership to enable retailers worldwide to accept mobile payments from Chinese customers. Any retailer currently using the Adyen POS will be able to accept Alipay payments.

Adoption of QR code payments is much lower in India, at 13.2 million users (1 percent of the population), but that may soon change. In March 2018, the National Payments Corporation of India mandated that all apps on the Unified Payments Interface (UPI) support Bharat QR, an interoperable payments acceptance solution that supports Visa, Mastercard, American Express, and

RuPay cards. UPI transactions accounted for roughly half the value of debit and credit card transactions in February 2018.

One indicator of the growing use of QR codes is the response from standards bodies. In July 2017, EMVCo released two QR code specifications: one for QR codes displayed on a consumer device and another for QR codes displayed by the merchant (and scanned by the consumer using their mobile device). In May, EMVCo created a universal QR Payment Mark so that merchants can indicate whether they accept payments via QR code. These actions indicate that QR codes are prevalent enough to raise questions about interoperability between different QR code payment mechanisms.

The conversation about mobile payments in the United States tends to revolve around high-tech solutions for high-end consumers. But the real potential of mobile payments is in expanding the so-called "base of the pyramid"—the hundreds of millions of consumers in emerging markets who may not own credit cards but who do own a mobile device. In these cases, the underlying infrastructure already exists, presenting the opportunity to build new tools for commerce on top of it. **TT**

ETA's International Committee comprises member companies interested in growing their business outside the United States. The focus of the committee is to serve as a forum to address issues of interest with respect to payments in global markets including technology matters, market opportunities, and legal/regulatory challenges.

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Michael Aminzade



In his role as vice president, global compliance and risk services, at Trustwave, Michael Aminzade leads a team of security professionals who advise businesses on how to develop and meet the objectives of their compliance, risk, and security maturity programs. He spoke to *Transaction Trends* about the European Union's recently enacted General Data Protection Regulation (GDPR) and its consequences on the payments space.

The following has been edited for length and clarity. A fuller edited version of the discussion is available on the *Transaction Trends* website.

What's the main goal of GDPR, and why was it developed?

There are three main goals: to give [EU citizens and residents] greater control, to unify data protection rules, and to make those laws relevant to today's digital landscape. ...

... I think the other drivers behind this are the ways that organizations have been utilizing the data that they captured. They were utilizing the data for their needs, not necessarily for the reasons that people gave it to them in the first place.

What is the biggest challenge GDPR presents to the payments and financial services markets?

That's a great question. One of the interesting things that I've seen personally is organizations trying to understand the regulation because it is not a standard compliance regulation. If you look at PCI DSS, which is a very good regulation for payment card data itself, it is a control-based standard. The GDPR is not a control-based standard; it's a regulation. ...

... The right to be forgotten is a huge challenge for organizations just because of understanding where their data is, so that if someone wants to execute that right it can happen. In parallel with that [is] data mapping—to be able to provide the records that you are holding on a citizen, when they request it, so that they can make any corrections or updates to those records.

... I'm also still not seeing the correct level of investment strategies against the regulation. That's an area that will continue to develop, and I think it's going to take the first organization actually being fined or made an example of be-

fore those funds are appropriately released and adjusted inside organizations.

How well prepared are companies to handle this?

I think they are one of the better prepared verticals of the whole global landscape. The reason why is due to the level of compliance regulation—whether it's privately enforced by Visa and the card brands or whether it's a government level of regulation. ...

... However, I see that well preparedness [creates] other complications. [For example,] if you try to use other compliance standards to fulfill GDPR, you can do that, but there is no single silver bullet. PCI covers a certain set of your infrastructure, and organizations have spent a lot of time reducing that footprint. ... GDPR brings the whole organization back into scope.

... The volumes of data that [payments companies and FIs] work with [are] much larger than other verticals as well. The complexity with GDPR is how do they fold that into their multicompliance programs, and which parts of those compliance programs can they already use to fulfill the GDPR requirements? ... Or if they've got a weakness in an area, how do they improve that weakness to meet the GDPR requirements?

Being PCI compliant is not enough?

No, definitely not.

Given the regulation's content and the prevalence of third-party partnerships in this space, what's your advice?

GDPR is here; embrace it. ... The cost of em-

bracing that at a later point is very large. ... And it's not just because of the fines. We've also got inside the regulation a requirement to build in privacy by design. ...

... But I also think that that part of regulation will actually restrict certain amounts of data being passed between third parties because of the audit, the right to be forgotten, the update requirements, down that chain of custody. ... At the moment, it's [easier to send an individual's entire data file] to my logistics company. ... That will then change to [sending only certain data elements]. It's actually much more convenient to pull out just those data records that they need to share because the audit and the ongoing management of third parties will outweigh the cost of maybe that new piece of development or privacy by design being built into that data transfer.

Won't that fundamentally change how businesses work together?

This regulation is going to fundamentally change how organizations set up their security and compliance teams. So, the [governance] capabilities the organizations have with inside their organization—from how they set up their compliance program, how they set up their security program, making sure that they've got the correct risk functions, making sure they've got the correct security maturing functions, as well as the correct architecture and design functions, and oversight of all that—is going to be key.

... Those capabilities being developed inside organizations are going to be big changes that we see driven by this regulation. And that will then feed into how businesses work together. **TT**

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