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THE OFFICIAL PUBLICATION OF THE  
ELECTRONIC TRANSACTIONS ASSOCIATION

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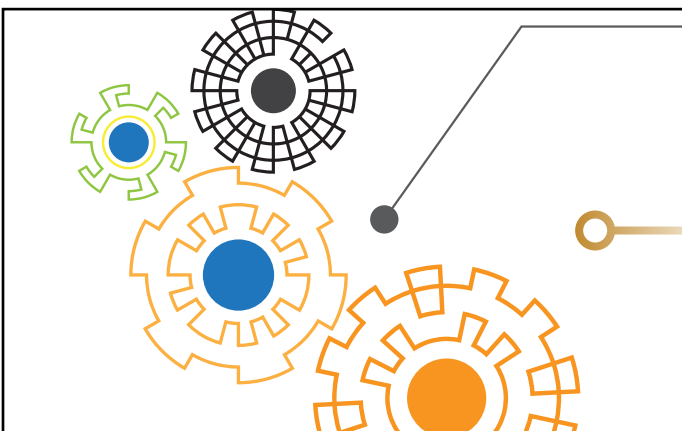
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## ETA Is Proud To Represent the ISO Community

ISOs are vital to the payments ecosystem, and ETA is proud to be the premier trade association representing the ISO community. ETA's ISO membership is advancing the payments industry, and we're continually deploying new education, networking opportunities, and advocacy initiatives to assist ISOs in their growth. Let's take a look at what ETA is doing to ensure our ISO membership's continued success.

In recent months, the Department of Justice, Federal Trade Commission, and Consumer Financial Protection Bureau have charged several ISOs with violations of federal law for having merchant customers that engage in fraud. These ISOs are being targeted for merchant misdeeds, and ISO liability can be in the millions of dollars. ETA is responding decisively by lobbying opinion leaders and law makers in Washington to end this misguided law enforcement campaign. Further, ETA makes available to its member companies the ETA "Guidelines on Merchant and ISO Underwriting and Risk Monitoring," a best practices document that will help all ISOs address the law enforcement threat as it stands today. On page 24, you can find a detailed summary of that document and links to an online quiz to earn ETA CPP continuing education credits. This is yet another benefit to reading each issue of *Transaction Trends*.



Speaking of continuing education, ETA provides the tools needed to stay current in our industry, and also crafts accessible educational materials for customers. ETA's new merchant website, [www.sellSAFEinfo.com](http://www.sellSAFEinfo.com), has the best information about EMV, tokenization, security, and more—all in one place for ETA members and the merchant-customers they serve. ETA University and the ETA CPP program are the industry's only full-service education programs for payments professionals. And, free webinars offered every month—exclusively for ETA members—deepen your business savvy about the changing payments landscape.

ETA member-companies are always looking to engage the best ISOs and agents to sell to merchants, and they use ETA as the organization to find them. Networking and engagement through ETA committees such as the ISO Committee, and through attending ETA offerings, including free member events throughout the country each year, are the best opportunities to make the necessary connections for business. Our new Retail Technology Committee connects ISOs to independent software vendors, value-added resellers, and other software partners that can help provide deeper engagement with merchant customers.

We look forward to continuing to represent ISOs large and small, processors, acquirers, and every facet of the payments ecosystem for the next quarter century and beyond.

Jason Oxman  
Chief Executive Officer  
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## Acquirers and ISOs Spot Emerging Payment Trends



Sixty-four U.S. merchant acquirers, ISOs, and other payments organizations of various sizes recently participated in the “ETA-Goldman Sachs (ETA-GS) Merchant Acquirer & ISO Survey—Spring 2015.” Their insights revealed the following trends emerging in the payments industry:

- **Payment volumes will accelerate.** Sixty-four percent of respondents expect consumer payment volumes to grow at an accelerated rate in the first half of 2015, compared to the first half of 2014. Just 6 percent cited decelerating volume trends. The outlook is consistent with ETA-GS analysis of U.S. retail data, which points to sustained volume improvement. New entrants, such as Square and Intuit, and smaller acquirers and ISOs were the most frequently cited drivers of lost business. The data indicated that smaller acquirers and

ISOs may be gaining share, potentially with lower pricing.

- **Apple Pay is still a low priority for small merchants.** Despite significant market expectations around Apple Pay, small merchants still have limited inbound interest. Separately, ETA-GS data suggests novelty (“cool factor”) is the main driver of merchant interest. Although most merchant acquirers and ISOs are still uncertain as to whether new entrants in payments represent threats or potential partners, Google is increasingly seen as a viable partner compared to prior surveys.

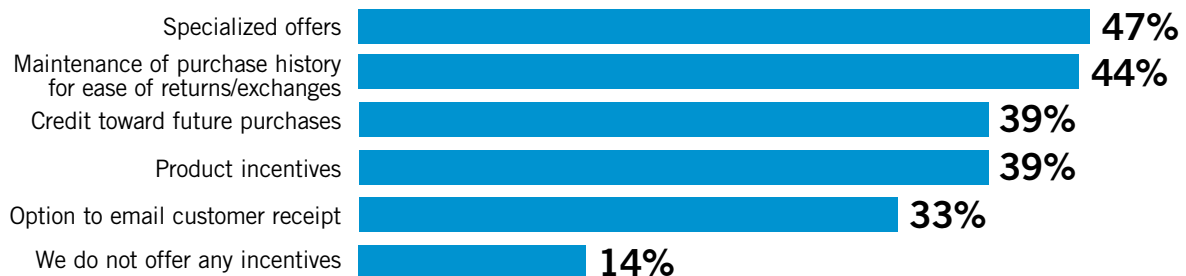
- **Digital currency adoption is growing considerably.** Digital currencies such as Bitcoin have shown a significant uptick in adoption among merchant acquirers and ISOs when compared to the prior ETA-GS survey, in part driven by perceived lower cost of merchant acceptance. Eleven percent of merchant acquirers and ISOs now support Bitcoin payments (compared to 2 percent in fall 2014), and 23 percent expect to support Bitcoin payments within three years.

- **Integrated payments gain further momentum.** Merchant adoption of integrated payments technology solutions is increasing relative to the prior ETA-GS survey. Sixty-one percent of respondents indicated that 15 percent or more of their merchants are using iPOS solutions today, compared to 43 percent in the prior survey.

- **Nearly half of merchants will adopt EMV this year.** EMV terminal adoption remains consistent with respondents’ prior expectations: They expect approximately 45 percent of merchant locations to be enabled by the end of 2015. The survey noted no meaningful change in expectations of EMV adoption following the launch of Apple Pay.

## Infographic

How Top North American Retailers Collect Customer Information



Source: Boston Retail Partners, “2015 CRM/Unified Commerce Survey”



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### 'Cutting Out' Third-Party Fees One Way To Improve Customer Experience, Execs Say

A payments survey of more than 1,100 executives from leading banks, retailers, and billing organizations around the world revealed that many in the payments ecosystem want to provide a richer consumer experience and slash costs by cutting out fee-collecting intermediaries—including ISOs, card networks, merchant acquirers, and processors.

Forty-four percent of firms that participated in the four-part “Global Payments Insight” study, conducted by ACI Worldwide and market research firm Ovum, said they are “already taking steps to, or would like to eventually, reduce the number of intermediaries in the payments value chain,” according to a press statement. Up to 90 percent of banks also want to work directly with retailers and billing organizations.

Other findings from the study, which was intended to gauge participants’ experiences, perceptions, and expectations of payments and how payments are shaping their behaviors, include:

- More than 50 percent of respondents cited security risks as the top issue preventing payments investment.

- More than 50 percent of respondents view banks as the best provider of payment technologies. However, if they don’t deliver the customer experience, they are at risk of losing market to third-party payment specialists (such as PayPal), telecom providers, and large software companies creating mobile wallets, such as Apple and Google.

- Banks also are regarded as the most capable providers of payment products and services: contactless cards (68 percent), real-time clearing and settlement (66 percent), mobile apps (46 percent), and mobile QR codes (48 percent).

“For banks, retailers, and billing organizations, the key takeaway is that the customer experience is the primary imperative and this will not change. All of these players must satisfy shifting consumer demand and enhance their payment capabilities,” says Paul Thomalla, senior vice president, ACI Worldwide. “This means lowering payment costs, offering new value-enhancing services, and, most importantly, ensuring that security measures are being taken.”



### Fast Fact

In 2014, 2.5 times more consumers were notified that their PII had been compromised in a data breach than in 2013. As a result, **consumers spent more than \$1.4 billion on ID protection subscriptions** between late 2013 and 2014.

Source: Javelin Strategy & Research, “2015 Identity Protection Services Scorecard—Direct-to-Consumer Market”





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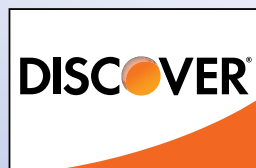
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## Nearly Two Thirds of Businesses Still Store PANs

Businesses continue to struggle with the prohibited storage of unencrypted customer payment data, according to SecurityMetrics' fourth study on unencrypted card data released this spring.

The firm's card discovery tool PANscan found that 61 percent of businesses store the unencrypted 16-digit sequence on the front of credit cards, also known as the primary account number (PAN)—a clear violation of the new PCI Data Security Standard 3.1 (and previous versions). However, in five years, PANscan has found more than 1.2 billion unencrypted card numbers on business networks.

"Unencrypted storage continues to be an issue among merchants, even with new technologies like EMV," says Gary Glover, director of security assessment. "EMV-enabled payment terminals can still be used to make a payment transaction using an optional mag-stripe swipe process, which means there's still an opportunity for misconfigured software to inadvertently capture and store full track data."

The study, which encompasses 204,332 gigabytes of data on 3,627 computers, found:

- a total of 332,263,315 unencrypted payment cards
- a 2 percent decrease in the number of businesses that store unencrypted PAN data since the 2014 study
- full magnetic-stripe data, including PIN, CVV, service code, expiration date, cardholder name, and PAN, stored by 7 percent of businesses
- an average of 91,608 payment cards per computer.

"I expect the trend of unencrypted card data storage to steadily but slowly decline each year," says Glover. "The sooner businesses implement point-of-sale encryption technology like P2PE (encrypt at swipe), the sooner stored unencrypted data will become a thing of the past."



### Fast Fact

Only 6 percent of retailers currently can identify consumers upon entering the store, but **53 percent plan to do so** within five years.

Source: Boston Retail Partners, "2015 CRM/Unified Commerce Survey"

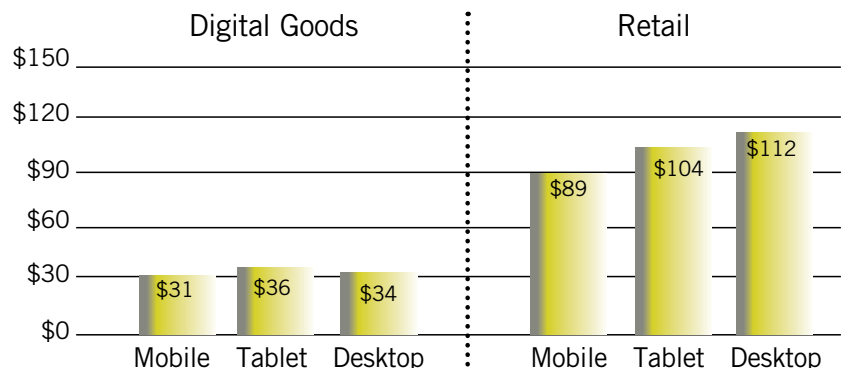
### Fast Fact

U.S. retail e-commerce sales estimates for 1Q 2015 was **\$80.3 billion (7 percent of total sales)**, up 3.5 percent from 4Q 2014.

Source: The Census Bureau of the Department of Commerce

### Infographic

Average Web Transaction Value By Device, 1Q 2015



Source: Adyen, "Adyen Mobile Payments Index April 2015"

Note: Based on Adyen's global mobile web payment transactions data and does not include in-app mobile payments.

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ETA testifies before the U.S. House Financial Services Committee

## Taking a Stand for Security

By Scott Talbott



ETA CEO Jason Oxman explains how payment verification flexibility is key to a seamless payments ecosystem.

On May 14, ETA CEO Jason Oxman testified before the House Financial Services Committee on the need for better payments security. He outlined the ways in which the payments industry is embracing multilayered security and adopting industry-led, multistakeholder guidelines to keep consumers' data secure. His testimony stressed the need for a uniform national standard for data breach notification that would preempt the patchwork of 47 existing state laws, as well as robust data protection standards for consumers' private information. Other witnesses on the panel included representatives from the financial services, retail, and technological sectors.

Although fraudulent transactions only account for a very small percentage of transactions by volume (about 6 cents for every \$100 processed), the payments industry is deploying new technology to address fraud. We are leading the migration to EMV (chip cards). EMV makes counterfeit card fraud virtually impossible. We also support the use of point-to-point encryption, whereby card data is encrypted starting from the moment the card is swiped or tapped and ending at final authorization, and tokenization, which replaces card data with a unique alphanumeric identifier (a "token") that is only valid for a single transaction. It works like a code substituting symbols for important information like the credit card number.

A retail industry witness on the May 14 panel called for the adoption of chip-and-PIN, which would require customers to enter a PIN for every transaction, rather than the more ubiquitous chip-and-signature in use today. While

**Editor's Note:** A copy of Jason Oxman's written testimony to the House Financial Services Committee is available at <http://1.usa.gov/1Fb368v>.

# No two companies will experience data breaches in the same way, and it is critical that policy remains flexible, yet technology- and industry-neutral.

PIN has merit in certain transactions (like ATM withdrawals), we maintain that flexibility is vital. Issuing banks should be able to choose their method of verification, whether that involves a PIN, a signature, biometrics, or some other form of verification. A static standard may prove too burdensome for smaller merchants, whose consumers benefit from moving quickly through checkout lines with “swipe and go.”

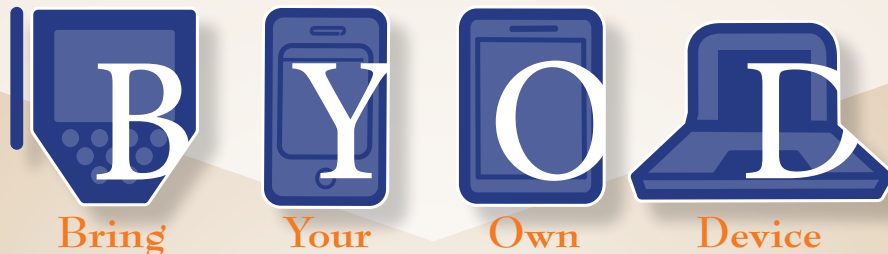
We applaud the data breach notification bill (H.R. 2205, The Data Security Act) introduced by Rep. Randy Neugebauer (R-Texas), chairman of the House Financial Services Subcommittee on Financial Institutions and Consumer Credit, and Rep. John Carney (D-Delaware). This bill would create a uniform national standard for data breach notification and impose robust data protection requirements. This standard can be scaled according to the size of the company and the scope of its operations. No two companies will experience data breaches in the same way, and it is critical that policy remains flexible, yet technology- and industry-neutral.

The payments ecosystem is fast, seamless, and secure. The industry is working hard to keep it that way. **TT**

*Scott Talbott is senior vice president of government affairs for ETA. Reach him at [stalbott@electran.org](mailto:stalbott@electran.org). For more information, contact Jaime Graham, senior manager of government affairs, or Grant Carlson, government affairs coordinator, at 202/828.2635.*

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Statistics show that merchants see value but need to conquer fear, complexity, and information silos

# Big Intentions for Big Data

By Julie Ritzer Ross



In the not-too-distant past, most retailers considered “Big Data” a cluster of historical information with limited use, at best, and something to be feared, at worst. However, opinions are rapidly changing as merchants begin to recognize the benefits of leveraging Big Data and analytics for their businesses.

Statistics support this. For example, 58 percent of merchants queried for a study released last fall by Accenture Analytics deemed Big Data “extremely important” to their organization, and 36 percent said they consider it “important.” Nearly 70 percent of respondents cited a need to remain competitive as a driver for using Big Data, and 82 percent concurred that Big Data is altering the way they interact with and relate to customers.

Similarly, 38 percent of merchant participants in a similar survey—this one conducted by 1010 Data—characterized Big Data as “important” to maintaining a competitive edge. Thirty-five percent described it as “very important,” 23 percent said “moderately important,” and only 4 percent said that Big Data initiatives are of “little importance” or “unimportant.”

But this is just the beginning of the story: When asked about which processes would be most impacted by Big Data technology, merchants queried by 1010 Data pointed to the creation of targeted offers and programs (50 percent); demand forecasting and supply chain modeling (49 percent); the practice of customer-centric merchandising (43 percent); and loyalty program management (35 percent).

“Retailers have lots of data being tracked—in their payment systems, loyalty club tools, online sites, direct marketing environments, and even large call centers,” and are thinking seriously about putting it to good use, says Amir Orad, CEO of Sisense, a business analytics software provider.

Examples that showcase the power and widespread applicability of Big Data and analytics abound:

- Not long ago, Express Oil Change & Tire Engineers, an automotive service provider with more than 200 locations across 13 Southeastern states, introduced a loyalty program to attract customers who forget to get oil changes or did not care where the job was done. The program was built on a foundation of Big Data analytics, including customers’ spending patterns and levels, the number of previous visits to an Express Oil & Tire Engineers location, the date of last visit, and

more. Several groups of consumers were identified and now receive targeted promotions and offers that remind them not only to get their oil changed, but also that their local Express Oil Change & Tire Engineers franchise is their “car maintenance partner.”

Since its inception, the EOC VIP program, as it is known, has decreased the duration between customer visits by 21 percent. Revenue per transaction is up by 2.5

WITH THE PROMISE OF BIG DATA AND ANALYTICS COME SIGNIFICANT OBSTACLES: FORTY-SIX PERCENT OF RETAILERS NEED A BETTER UNDERSTANDING HOW BIG DATA CAN SOLVE THEIR BUSINESS PROBLEMS TO JUMP ON THE BANDWAGON.

percent and the number of transactions per store per day, by an average of 5.5 percent.

- Home goods retailer Pier 1 is engaged in a Big Data pilot project with Microsoft Azure Machine Learning, a fully managed Cloud service. The merchant is harnessing data mining and Big Data analysis to predict what patrons will buy next, based information from across the enterprise.
- One of Sisense’s customers, a large chain pharmacy, as-

signed its security department to combine Big Data analytics and data discovery with what Orad calls “gut-based intuition” to identify and stop shoplifting and problematic behavior in its in-store pharmacies. Another Sisense customer discovered, through Big Data analysis of transaction and POS information, that certain brands always sell and never need to be discounted, while other brands move off the shelves only when prices are slashed.

### Obstacles and Challenges

But with the promise of Big Data and Big Data analytics come significant obstacles. Some appear to be roadblocks to adoption itself. Statistics from the 1010 Data survey bear this out: Forty-six percent of retailers need a better understanding how Big Data can solve their business problems to jump on the bandwagon. Forty-two percent said the cost and/or complexity of implementing Big Data solutions “needs to come down” before they venture forward, and 30 percent want to see Big Data solutions that

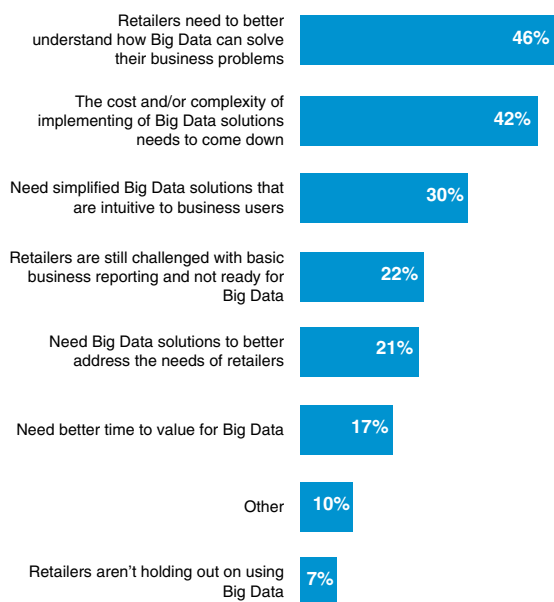
are “intuitive to business users” prior to doing so. Other rationales cited encompassed ongoing basic business reporting challenges and lack of preparedness to utilize Big Data (22 percent), a need for available Big Data solutions to “better address the needs of retailers” (21 percent), and a need for “better time to value for Big Data” (17 percent). Ten percent of merchants have other reasons for avoiding Big Data and Big Data analytics, and 7 percent said they “aren’t holding out” on using it.

Then, there are the challenges of obtaining and utilizing Big Data for those that have taken the plunge. Part of the problem stems from the fact that many merchants continue to maintain separate silos of individual types of data, with transactional data residing in one silo, supply chain data in another, and so on. “In many retail organizations, different groups are highly protective of their data, and they don’t see the benefit of sharing it for the greater good,” says Damon Ragusa, CEO of ThinkVine, an integrated marketing technology and services provider. “In these cases, the directive to break down the barriers has to come from the top.”

Andy Zimmerman, chief marketing officer of website personalization services provider Evergage, and Oliver Guy, retail industry director at Software AG, agree. Based on conversations with merchant customers, they also point out that the rapid rate at which the volume of data grows also causes merchant angst.

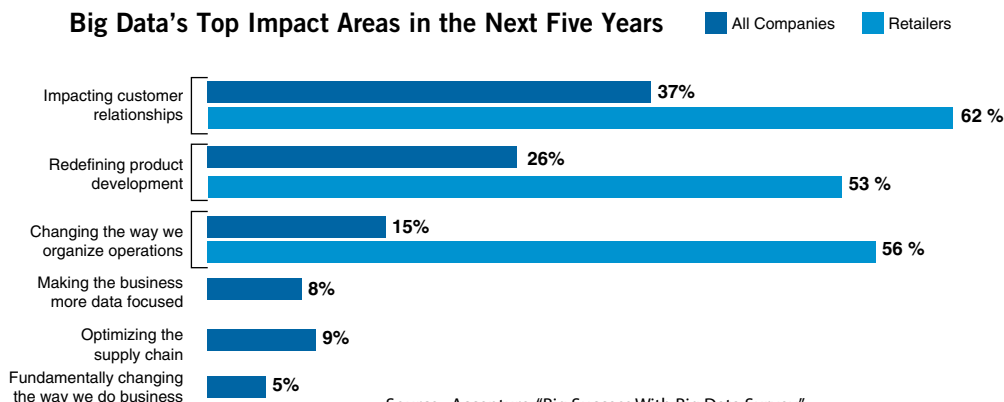
Many merchants erroneously assume that they must hire data scientists to harness Big Data, according to Zimmerman. In truth, he says, although this is helpful for certain functions and in offline analysis, retailers that are primarily looking to improve sales and the customer experience only need to deploy a scalable solution that processes data and responds in real time. Just as important, the solution should integrate with other technologies in merchants’ toolboxes—from customer relationship management (CRM) systems and marketing automation solutions, to analytics applications.

### Obstacles Preventing Retailers From Using Big Data



Source: 1010 Data, “2014 Big Data in Retail Study”

### Big Data’s Top Impact Areas in the Next Five Years



Source: Accenture, “Big Success With Big Data Survey”

Note: Retailers were asked to rank their top three areas of impact.

“Often by the time a piece of analysis has been completed, it is too late to act upon it—and as more data are collected, the problem will grow and grow,” says Guy, whose company is a provider of Big Data, integration, and business process solutions. “This is where technologies like real-time analytics are crucial to generate value from Big Data.”

Guy also points out that the use of Big Data currently appears to focus on conducting analyses after events have occurred (looking at sales data to understand the impact of a promotion) and applying the information gleaned to create predictive models (such as those that would help project the impact of a future promotion). This is all well and good, he contends, but the “holy grail will come” when merchants have in hand tools that enable them to analyze data in real time and automatically respond. “For example,” Guy explains, “in the event that a product is selling ‘too fast’ during a promotion and there is a risk of running out before the next shipment arrives, (real-time) Big Data analytics would trigger an automatic adjustment of some type to ensure overall customer service.”

For some merchants, Data-as-a-Service (DaaS) or Big-Data-as-a-Service (BDaaS) may be the answer. Players of all sizes, proponents say, are increasingly opting for gleaned Big Data insights from DaaS and BDaaS for marketing purposes, without a major investment in implementation. Under this umbrella, statistical analysis tools and data are delivered by vendors through the Cloud, in the same way as occurs with Software-as-a-Service (SaaS).

Delivered data comes in three flavors: foundational, onboarded, and fast. In a blog post, Larisa Bedgood, marketing manager of solutions provider DataMentors, notes that foundational data is “internal data combined with demographic” and other external data aggregated from different sources. For example, the external component of an apparel retailer’s foundational data might include online specialty apparel websites or spend data on businesses by subcategory. Offline data, meanwhile, have been “transformed into addressable online identities” that can be used “to reach customers and prospects in the digital universe.” A specialty retailer might use onboarded data to target key groups of customers with display ads designed to cross-sell another product, she says, while an auto dealer may use it to find and convey messages to individuals whose vehicle leases are up for renewal. Fast data “aggregates event and behavioral-driven data to determine purchase intent as it occurs.” As examples, Bedgood cites “social purchase signals,” like social media posts (“Excited about the new baby” or “Taking a vacation”) and keyword searches (“stroller”) or indications that a discretionary purchase is imminent.

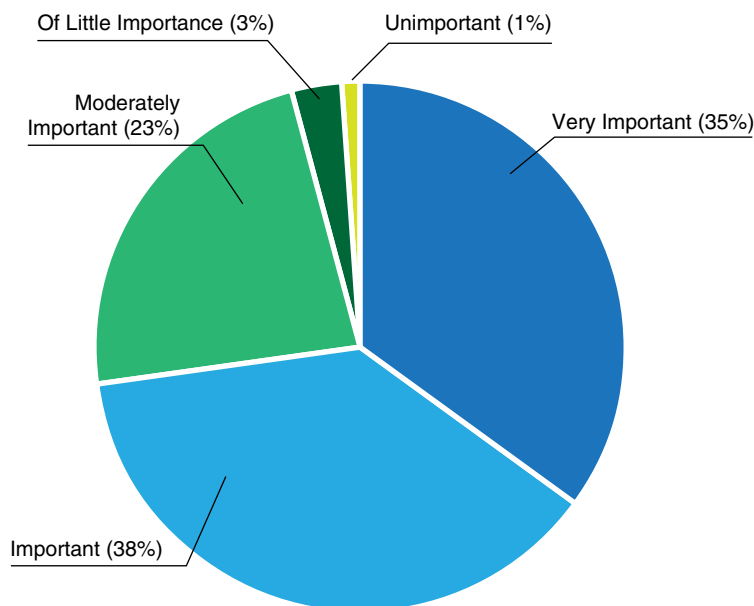
“DaaS appeals to merchants of various sizes because it opens doors to a wealth of data from almost any source,” says Ashish Thusoo, CEO of Qubole, a DaaS provider. He cites as examples not only online and offline transaction data, but also public records, web searches, and more.

The Cloud will have increasing influence on merchants’ ability to overcome Big Data obstacles and take greater advantage of analytics going forward. Two out of three retailers that use Big Data leverage the Cloud for analytics purposes or intend to do so, according to a study by Gigaom Research. Conducted for Cazena, which offers solutions for managing Big Data in the Cloud, the study reveals that only technology companies have a higher ratio of willingness to launch Cloud-centric Big Data analytics initiatives, outpacing the finance, manufacturing, and health-care industries. Twenty-six percent of retail participants in Gigaom’s research said they will move Big Data workloads to the Cloud within the next 12 months; by contrast, an average of only 11 percent of technology, finance, manufacturing, and health-care industry players have similar plans in place.

“Retail’s biggest drivers of Big Data analytics in public Cloud adoption are cost reduction and agility,” says Cazena CEO Prat Moghe. “The industry’s thin margins mean retailers typically work with limited resources, including IT staff. There is a strong need for cost efficiency, and committing millions of dollars to support a quickly aging infrastructure with costly hardware and software goes against that.”

Additionally, merchants are being driven to Cloud-based Big Data analytics platforms by the need to be more responsive, especially in the face of escalating consumer demands for elevated levels of service that are increasing at the same rate at which Big Data is evolving, says Moghe. While the current Big Data infrastructure is

### Retailers’ Opinion of Big Data’s Importance to Staying Competitive



Source: 1010 Data, “2014 Big Data in Retail Study”

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“slowing retailers down and cutting into razor-thin margins,” the Cloud has the potential to reduce costs and speed business results across all functions and lines of business, he elaborates.

### The ISO's Role

ISOs, too, have and will continue to have a role in supporting merchants' use of Big Data analytics. Notably, it is incumbent upon the ISO community to remove the fear of Big Data from merchants' minds. They need to be educating them about where it comes from and “how things add up—processing data, plus cash data, plus (SKU-level) POS data, plus customer demographic data that is deciphered—so that they gain some clarity around the mechanics,” says Rishi Chhabra, vice president, information and analytics solutions, First Data.

ISOs also may help merchants apply Big Data to identify trends of different payment models and methods. For instance, Chhabra notes, if Big Data analysis demonstrates that ability to use NFC and Apple Pay boosts store traffic and/or basket size, an ISO can assist merchants in marketing themselves to reflect the trend. Similarly, if shoppers are found to spend more in a given store when they pay with a credit card, as opposed to a debit card, ISOs can help the merchant decide when and where to disseminate appropriate offers.

Brandon Levey, CEO of inventory control solutions provider Stitch Labs, counsels ISOs to remind merchants that although “everyday tools exist to make it easy to track and store data,” separating the meaningful insights from the noise of huge volumes of data is crucial. “It can...be a challenge to know exactly what metrics and how to look at them will lead to making the most sense of data,” Levey explains. A common set of key performance indicators—such as revenue, profits, and costs—may be helpful, but “to really use Big Data in every aspect of the business, it is critical for merchants to understand not only the current value (such as profit), but how it is changing over time, and for a common set of products,” he says.

What's more, significant opportunities exist for ISOs to facilitate—legislation permitting—the sharing of information between organizations, according to Guy. For example, ISOs may be collecting a very broad picture of a given customer's purchasing habits (multiple retailers frequented and services used), but an individual retailer has only a perspective of what the customer spends in its store(s). Sharing and combining information could create an interesting proposition, with ISOs providing useful insight to assist with retailers' promotions and other activities, he says.

Clearly, merchants are making inroads into Big Data and Big Data analytics. There will be bumps along the way, but as Thusoo puts it, they should be worth enduring for the end result. **TT**

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# Reducing Fees, Not Income

By Ed McKinley

**I**n their never-ending quest to provide added value to their products and services, acquirers can endear themselves to merchants by rooting out unnecessary interchange expenses. But trimming those bills isn't always easy. Banks or ISOs have to pore over a merchant's monthly statement to find savings. Think of that as the micro approach. Bigger merchants require a more macro approach, and that's where Big Data can help.

Backed by in-depth analysis, Big Data recently helped slice more than \$100,000 from a transportation-services company's \$700,000 monthly interchange bill, according to Kiran Jain, vice president of analytical solutions for Digital Management Inc. (DMI), the company that helped realize the savings. He declines to name the transportation company, but says it handles fares for bus and subway systems.

DMI began the project in 2013 by studying a mountain of information and discerning patterns. "When we started looking into the data, we uncovered the magnitude of the problem," Jain says.

To help make sense of the data, the company brought in a payments expert, Mary Winingham, president of Mir-

ror Consulting. Her years of experience with interchange helped shape and refine the analysis and recommendations. "All the data in the world won't get you there if you don't ask the right questions," Winingham says of the project.

## Data Discovery

Winingham and DMI confirmed the largest of the client's problems: It already realized it had not been prompting for address verification, but what the client didn't know was the heavy price for the omission. Failing to record that information was creating a monthly expense of more than \$100,000 in a combination of downgrades from the card brands and surcharge fees from the processor.



## How data—big and small—can help acquirers cut clients' interchange costs

“That justifies the ROI for technology to come in and change that prompt,” Winingham says of the discovery. “That was one of the huge outcome of this.”

Specifically, face-to-face transactions were downgraded to riskier, higher-fee e-commerce status. “The fix for that was easy—a change to the merchant master file for the merchants that were affected by that,” she says.

The client also failed to collect enough of the other transaction information that can hold down fees by reducing downgrades, Jain says. To correct that, DMI and Winingham recommended adding fields to digitized forms to collect information such as card verification value, or CVV.

Another problem arose for the merchant because it was categorized as a small-ticket business—one with transac-

tions of \$15 or less. However, many of its fares, such as monthly passes, exceeded that cutoff. Starting at \$15.01, transactions downgrade for small-ticket merchants, so reclassification made sense. In addition, DMI recommended collecting batch files at the end of the day and including tax information with them, Jain says. The company urged the client to hold regularly scheduled meetings with its processor, one of the nation's largest, to stay informed of changes in interchange rules, he says. It also provided the client with a computer dashboard to monitor transactions and help detect and correct problems.

During the project, Winingham says she was amazed by the speed of Big Data. When an anomaly surfaced, she had access to information in minutes instead of the days

or weeks required not long ago. “When you have to wait until a week from Wednesday, you sort of lose your mojo.”

That speed facilitates research, which is based partly on drill-down questions, she says. Once an analyst spots a trend, such as face-to-face transactions downgrading to e-commerce, he or she can take a deeper look for reasons why.

Trouble can start when the merchant profile is “built” on the processor’s platform, says Winingham. “You

know—name, address, where do we send the money, what kind of merchant are you?” Leaving out a piece of information in that process can result in costly mismatches.

Errors occur because of the complexity. Some merchants operate online, others conduct business face-to-face, and others rely on kiosks. With so many profiles, it’s easy to make a mistake. Merchants often know they’re paying too much in interchange fees but aren’t aware of the magnitude of the problem, Winingham continues.

## Can **Big Data** Defuse Breaches?

**W**hen stickup artists knock over a liquor store, they get in and get out as quickly as possible. Even beginners know to keep the engine running in the getaway car. But hackers are different. They typically linger in their victims’ computer systems—sometimes for months—stealing sensitive credit and debit card information at their leisure.

Cyber crooks have that leeway because the good guys haven’t been able to detect their presence very quickly. But that’s changing, according to Randal Cox, “chief scientist” at Rippleshot, a Chicago-based startup that’s using Big Data to reduce the time needed to discover data breaches.

“We can change a complete disaster into a brush fire,” says Cox. In one example, Rippleshot managed to ferret out the infamous recent Home Depot breach four months before the retailer alerted the public to the problem. That earlier detection could have spared some consumers enormous grief, he adds.

Rippleshot begins by collecting transaction data from card issuers. The firm then uses its algorithms to trace cards that crooks have used fraudulently back to a



common point of purchase—the retailer that’s been breached. The company doesn’t need direct contact with merchants’ software to work back to the breach, which is how it was able to detect the activity at Home Depot.

The path Rippleshot is following isn’t new, Cox says. Larger banks have been working this way for a while. But he maintains that even big banks have only small teams working on breach detection. He also describes their methods as “manual” and much slower than the approach at his company, which works with a number of issuers, giving it more data than a single bank could have. More data, he says, speeds up detection.

Rippleshot has been offering its

service for just a few months but got its start two years ago at I871, a Chicago tech breeder named for the fire that consumed much of the city that year. Since then, it was among 10 finalists to compete for the ETA E-Pay Innovation Award during the Payments Pitch-Off at TRANSACT 15. It also won the 2014 Midwest Acquirers Association “Shark Attack” competition and the Merchant Risk Council META Emerging Technology Award for startups.

Rippleshot views early breach detection as a new endeavor, and Cox expects competition to heat up. “Detection is the new prevention,” he says. “There’s no way we can beat all of the hacker attacks, but we should be spending more time detecting and not just preventing.”



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## BECAUSE OF SMALL MERCHANTS' RELUCTANCE TO READ THEIR STATEMENTS AND LEARN THE INTRICACIES OF INTERCHANGE, ACQUIRERS MAY STEP IN AND HELP MONITOR THE SITUATION.

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Because the scope of the problem remains unknown and its financial cost is shrouded in mystery, merchants often postpone action.

Sometimes, the nature of a business changes in ways that affect interchange. For example, the pricing may increase, or the quantity that consumers buy may rise. Either could affect the fees of a small-ticket merchant. That's why merchants should benchmark their fees and watch for changes, experts suggest.

### Stepping Up

Although merchants are responsible for detecting and correcting problems that inflate interchange, some processors have become more proactive than others in helping merchants locate and fix errors, says Winingham.

"It's commonly said in our world that merchants don't read their statements," which should break down their monthly transaction expenses. "The statements are incredibly complicated, and understanding them isn't their business. They're in the business of doing something else, whether they're a jewelry store or a florist."

Small merchants who examine those statements could find the data they need to understand their interchange fees, says Winingham. But because of small merchants' reluctance to read the statements and learn the intricacies of interchange, acquirers may choose to step in and help monitor the situation.

That's where an ISO like Madison, Wisconsin-based Wind River Financial comes in. Wind River uses pass-through pricing—which is sometimes called cost-plus—simply charging its merchants the interchange fee the card brand assesses, plus a little extra to cover the ISO's costs and add some profit, says Dan DeBaal, Wind River business services consultant.

The ISO bases that extra assessment on the amount of the transaction, not on a percentage of the interchange fee, so lowering interchange doesn't hurt its bottom line. "Since we don't make anything on the interchange, it behooves us

to help them keep interchange as low as possible."

To that end, Wind River uses three methods to help merchants avoid downgrades.

First, it trains new merchants to make the right decisions to get the best rates for card-not-present and card-present payments.

Second, Wind River runs monthly data reports to help it monitor clients. If less than 90 percent of a merchant's transactions qualify at the lowest rate, the ISO calls the merchant to find the root of the problem, DeBaal says. It could result from an improperly trained new employee who is not gathering the information necessary to keep rates low, or it could be a change in the merchant's software. Changes in the card mix could also raise rates and might require further analysis to hold down interchange. "We're very proactive about monitoring that in our portfolio and reacting when we see anomalies that could be corrected," he says.

Third, the ISO watches for opportunities to take advantage of Tier 3 line item detail, where adding information to the transaction can earn a lower interchange rate. That category often applies to business-to-business or business-to-government transactions and can include line-item product, invoice, and shipping information.

"It can be easy if you're typing one product in, or it can be difficult if you have hundreds of units of measure," says DeBaal. Tier 3's complexity is sometimes more than the merchant can handle, he admits, but the ISO is willing to work with the merchant to achieve the savings. "I do a lot of that," he says.

The three-pointed approach requires a team effort at the ISO, but it pays off for Wind River. "Our merchants appreciate us reaching out and helping them save money anywhere they can," he says. "It's how we differentiate ourselves and add value to the relationship." **TT**

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# Full Exposure

## Consider these benchmark practices for risk self-assessment and liability mitigation

The ETA whitepaper, “Guidelines on Merchant and ISO Underwriting and Risk Monitoring,” is designed to help eliminate prohibited and undesirable merchants from entering into or remaining in the card acceptance ecosystem. Its goal is to create industry benchmarks for practices that have consistently shown more favorable results for risk mitigation.

The guide breaks down the whitepaper into three sections, and a number of lessons from each section will help banks, ISOs, and processors police themselves and stay in the good graces of government regulatory agencies. Remember, no policy takes the place of any laws, regulations, or guidelines. Payments professionals also should remain mindful of privacy, data security, business continuity, and contingency planning.

The following is neither a standard nor a requirement, but rather is intended to provide a supplementary basis for self-assessment.

### Underwriting a Merchant

An important reason for the development of the ETA guidelines is to prevent rogue merchants from opening merchant accounts. It is essential to know who has merchant accounts and the kind of business the merchant is running.

Every bank, ISO, and processor should create its own underwriting policies. These policies should clearly state the goals of the business, and the policies should be written to support those goals. The objective is to identify the merchant—both the principal and the business—and to understand whether or not the business has the credit to support the activities that it is requesting.

Policies should be tiered so that requirements are more strict for high-risk merchants and less so for lower-risk ones. Policies and procedures also should place a greater focus on overall merchant activity when possible.

Processors should use both qualitative and quantitative

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elements when defining how to underwrite a merchant. Processors' underwriting policies should include a merchant's chargebacks and credits. When dealing with larger merchants, it is necessary to take into account their advertising and marketing methods to ensure that a merchant is not making false claims.

One of the more important steps in rooting out a rogue merchant is determining whether the business actually exists. Policies must make clear how to determine the extent of risk that a merchant might pose. Criteria should include credit, fraud, compliance, regulatory, and reputational factors, and these factors should be used with different intensities at different tiers. Policies should avoid ambiguity and should clearly identify when exceptions can be made and who has the authority to approve each level of business.

Other key elements to consider:

**Reserves.** Merchants that have a future or delayed delivery exposure or a high or fluctuating chargeback or refund volume will present more of a risk than other merchants. To protect themselves from a merchant's financial troubles, account providers should retain a non-interest-bearing reserve fund. The guidelines document defines three ways to calculate reserves: one based on time and processing; a second based on the future delivery exposure presented by the merchant; and a third for the highest-risk merchants, which might require a 1-to-1 ratio of reserves to processing volume.

It is important to note that reserves never take the place of proper merchant management. The FTC can take a negative view if it discovers a processor has taken reserves to protect its own interests, rather than to manage the merchant. The FTC also can seize reserves if it determines the merchant has acted unethically.

Defining risk tolerance is critical to the development of a solid policy. Demographics, processing volume, card acceptance methods, risk exposure, product type, merchant category code (MCC), and the merchant's history are all determining factors. The higher the risk factors, the more diligent a processor should be.

**Review parameters.** The card brands require periodic reviews, and it's smart for businesses to do so, too. Size or risk parameters are examples of ways in which processors can define who to review. The "what" of the review could include updated financial information, a current process evaluation, and a six-month trending evaluation—both in terms of dollar volume and the number of transactions. Online reputational reviews are good information to include.

**Reporting and tools.** Management reporting is essential in understanding the metrics of underwriting. Good ways of doing this are by sales channel or by vertical market.

A strong policy should define reporting that at a mini-

mum shows accounts submitted, approved, and declined. Banks should list all ISOs or large agents separately, and ISOs should list sub-ISOs, value-added resellers, and agents. These reports help to manage risk and ensure that everything is submitted as required.

To research merchants, the Internet offers scores of resources. Black Book Online is a free public records search site in which investigators can select by state. Melissa Data supplies information to verify nonprofits. Finaid.org and UPS's website help to verify street addresses. Social media sites such as LinkedIn and Facebook can help to identify if information on a business is consistent with what the merchant presents to processors.

### **Merchant Risk Monitoring**

The merchant risk-monitoring portions of the ETA guidelines help banks, ISOs, and processors to maintain a greater focus on overall merchant processing activity, including chargebacks, refund statistics, marketing methods, and other potential indicators of consumer issues.

Every bank, ISO, and processor should create its own risk-monitoring policies. These policies should clearly state the goals of the business and the policies should be written to support those goals. The objective is to identify and investigate merchant activity that deviates from the norm of expectations based on underwriting, as well as from industry norms for general merchant processing and defined verticals for that particular merchant. The policies should also support the identification of suspicious activities that might be related to illegal activities (such as money laundering and terrorist financing) and file a Suspicious Activity Report with the Financial Crimes Enforcement Network when appropriate.

Other key elements to consider:

**Tools, strategies, and communications.** Members should establish expected time frames for review and merchant notifications of review and/or adverse actions. It is recommended that reviews occur daily for transactions and at least monthly for overall merchant activity and trending. Banks, ISOs, and processors also should develop standards for adverse actions toward merchants, such as when funds will be held, when accounts will be temporarily suspended, and when an account will be terminated, during investigations.

The guidelines recommend that all departments—possibly including underwriting, risk, compliance, chargebacks, and collections—within an organization meet on a regular basis. Teams should share information on identified fraud or loss trends with the goal of earlier detection and mitigation of potential issues.

**Daily monitoring.** Based on a merchant's record, banks, ISOs, and processors should create approved parameters and demographic information to establish system flags for unusual activity. In particular, restricted mer-

chants should have strict thresholds set to monitor any deviation from approved activity.

New merchants (generally those that have begun processing within the past 90 days) are an important category. A majority of fraud will occur within the first month or two of the establishment of a new account. Compare new merchant activity to average processing activity for the assigned MCC or merchant vertical, if applicable.

A strong policy document also should have clear-cut information covering the handling of chargebacks. The policy should include the definitions of the card brand programs and should require action to be taken prior to a merchant entering a program.

DEFINING RISK TOLERANCE IS CRITICAL TO THE DEVELOPMENT OF A SOLID POLICY. DEMOGRAPHICS, PROCESSING VOLUME, CARD ACCEPTANCE METHODS, RISK EXPOSURE, PRODUCT TYPE, MCC, AND THE MERCHANT'S HISTORY ARE ALL DETERMINING FACTORS.

**Monthly monitoring.** Monthly reporting keeps leadership informed on operations and flags potential high-risk merchants. There are two types of monthly reports: Those used by the investigators and those given to management. Management reporting should be designed to keep senior leaders informed on merchants that are causing issues or may cause issues.

In both report types, verticals should be reviewed on a six-month rolling basis with significant increases and decreases investigated. Merchant exceptions for restricted-business- types should be summarized at the end of the month for senior-level risk management staff to review.

Refund exception threshold trending reports (as well

as monthly chargeback exception reports) also should be reviewed more often for portfolios with merchants that generate more consumer complaints.

**Chargeback monitoring and investigations.** To minimize risk, merchants must be closely monitored. After identifying an issue, a clear policy must exist to correct the issue, with actions defined up to and including termination.

Banks, ISOs and processors should establish a dedicated team of investigators to monitor chargebacks separately from transactions. Higher-risk portfolios should be monitored by senior investigators. When conducting a detailed chargeback review, define and identify fraudulent charges, merchant errors, and UDAPP violations. Review chargebacks for fraud, operation issues, and customer dissatisfaction.

Investigations should focus on whether factors that have flagged an account for review indicate a likely risk of financial loss, the processing of illegal transactions, or the use of potentially deceptive marketing practices. Investigators should always document when they take action. It is also important to document repeated exceptions for the same type of activity and the rationale as to why no action was taken.

**Merchant remediation.** Banks, ISOs, and processors need to assess whether remediation is possible. For example, if an issue is customer-service related, it may be possible to fix the issue by upgrading systems, enhancing training, or adding staff. However, if the issue is consumer deception, remediation may not be possible.

In all circumstances, the policies should outline time frames for remediation in 30-day intervals, with the goal being to see improvement within 60 to 90 days. It is strongly recommended that merchants with issues requiring more than six months for correction be terminated.

**Merchant reserves.** ETA recommends that reserves be used if a merchant's financial situation is tenuous. Reserves should not be used to manage merchants who engage in unfair, deceptive, or abusive consumer practices. In those situations, banks, ISOs, and processors should deny a merchant the ability to continue processing.

Implementing a reserve during an investigation can be acceptable, and investigators should use their best judgment for making that decision. Monthly management reporting is key to ensure appropriate senior-level oversight of the day-to-day activities within risk management.

**Enhanced due diligence and marketing review.** Merchants that require enhanced due diligence are more labor intensive and may require additional monitoring and staffing responsibilities. Working with these merchants may involve complying with additional card scheme-mandated

requirements, employing a more knowledgeable staff, and assuming higher probability of reputational risk.

Banks, ISOs, and processors can use consumer feedback websites or conduct secret shopping to investigate higher-risk or larger merchants to verify compliance with card scheme requirements and merchant account conditions. Investigators should analyze and clearly document their findings. For policies involving online merchants, website content monitoring is critical and should be done at least every 30 days to ensure merchants are not selling prohibited or illegal items.

Affiliates are generally responsible for directing consumers to merchant websites for purchases. ETA guidelines recommend that merchants monitor processing statistics for each affiliate. Periodically, the bank, ISO, or processor should request information from the merchant about its affiliate monitoring.

### **Sponsoring, Underwriting, and Monitoring ISOs**

Every bank, ISO, and processor should create its own underwriting and risk-monitoring policies for third parties. These policies should clearly state the goals of the business and the policies should be written to support those goals. The objective is to identify third parties' financial condition, marketing goals, and oversight knowledge and ability. These guidelines are further meant to prevent merchants from engaging in practices that are unfair, deceptive, or harmful to consumers. Active oversight of ISO merchant portfolios can result in earlier detection and mitigation of issues that might present loss exposure or consumer harm.

Regulatory agencies like the Federal Deposit Insurance Corporation (FDIC) have made it clear that organizations that sponsor ISOs are expected to perform due diligence and risk assessments. All policies regarding ISO sponsorship should have strong objectives outlining goals for the use of ISOs, including market segments and inherent risks. Policies should outline how the ISOs will be selected, underwritten, and overseen. Staff with the necessary expertise, authority, and accountability should be assigned to oversee and monitor ISOs. Clear escalation requirements and procedures should be defined.

Other key elements to consider:

**Due diligence of ISOs and background investigations.** Banks, ISOs, and processors should be responsible for their ISO relationships and must make sure to take care of the following concepts: validating sponsoring entities, understanding their businesses, assessing their financial condition, performing in-depth due diligence, and escalating additional scrutiny, if warranted.

The Office of the Comptroller of the Currency (OCC) and FDIC have recently published guidelines to help identify risk with respect to third-party entities. The risks are of the following nature: operational, compliance, cred-

it, legal, strategic, reputational, and ones of concentration.

Investigatory staff should reference principals named on formation documents against databases maintained by the state of formation, looking for prior or additional business involvement. An extremely useful tool is to search for lawsuits that have been filed by and against the third party being reviewed for the possibility of entering into a business relationship.

All principals with an interest in an ISO should be investigated and their criminal backgrounds checked. While minor crimes can be ignored, major crimes should be investigated, and financial crimes represent a likely cause for rejection. (The background check should include verifying the principals' names against the Specially Designated Nationals List published by the Office of Foreign Assets Control.) Background checks should be extensive and include the most recent three years' complete financial statements. Review complaints that have been made to the Better Business Bureau, Federal Trade Commission, or states' attorneys general.

Finally, be sure to conduct a review of the ISO's portfolio. On-site inspections of current and prospective ISOs also are recommended.

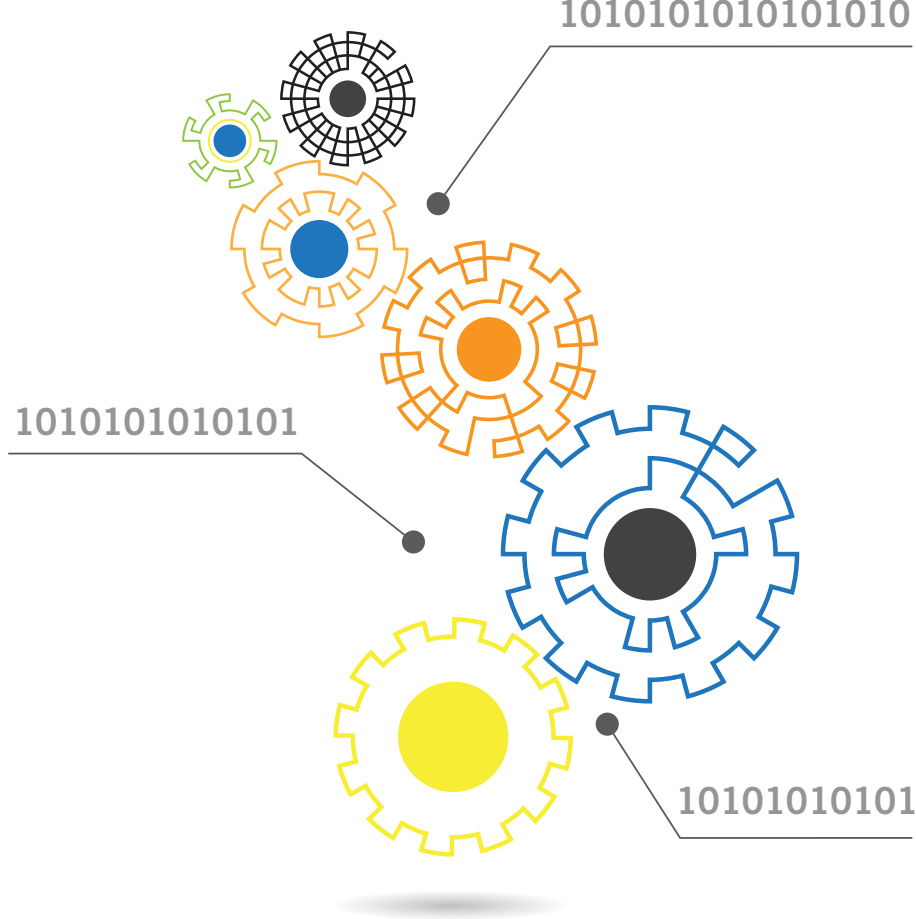
**ISO and merchant portfolio monitoring.** Sponsoring entities should perform some level of daily oversight and monitor metrics to help understand when a more intense review of an ISO may be necessary. Create processes for ongoing quality checks of an ISO's merchant underwriting and risk-monitoring practices.

Sponsoring entities should evaluate the ISOs they work with to understand their portfolio statistics and determine appropriate monthly monitoring thresholds. Regulatory authorities such as the OCC have expectations that sufficient documentation and reporting exists to facilitate proper oversight, accountability, monitoring, and risk management.

Termination of the ISO relationship is an extreme measure. The sponsoring entity should consider this option only if the ISO is not remediating as agreed. If the sponsoring entity chooses to terminate an ISO, the ISO should be reported to the card schemes.

Although this summary is not exhaustive, it should put ETA members at all levels of any organization on the path to safely underwriting, monitoring, and managing merchants and ISOs at varying levels of risk exposure. **TT**

*The information provided here is based on the whitepaper "Guidelines on Merchant and ISO Underwriting and Risk Monitoring," developed by a working group consisting of risk professionals and other personnel from various ETA member companies. Readers should refer to legal or other counsel for complete guidance. ETA members can login and download the full whitepaper for free at <http://bit.ly/1C4oiid>.*



## Big Data and Processing

Opportunities, challenges, and recommendations for implementing solutions

By Sunny Dronawat, PhD

**B**ig Data is already changing the way business decisions are made: The convergence of powerful computing, advanced database technologies, wireless data, mobility, and social networking is now making it possible to bring together and process Big Data in profitable ways. It puts information into the hands of entrepreneurs and small merchants, and it enables merchants to tailor their services or products to meet customers' needs.

Data access also levels the playing field. Big Data solutions attempt to cost-effectively solve the challenges of large and fast-growing data volumes and realize their potential analytical value. For example, trend analytics allow users to figure out what happened, while root-cause and predictive analytics enable understanding of why it happened and how likely it is to happen in the future. Meanwhile, opportunity and innovative analytics can be applied to identify opportunities and improve for the future.

Small businesses and consumers who use

mobile devices and social media will soon become the drivers of Big Data adoption by merchants and processors. Small business owners with their Cloud-based POS systems and electronic gift and loyalty programs, coupled with consumers armed with tablets and mobile devices, have the potential to revolutionize economic activity.

Big Data opportunities and challenges loom large for payment processing, but recommended solutions and technologies exist to help the industry take advantage of this burgeoning trend.

### Social Media and Shopping

Data from mobile devices and social media is a new type of raw material—on par with capital and labor. The large amounts of data produced by families and small businesses on Twitter, Facebook, LinkedIn, and other sites are becoming the new sources of Big Data.

Small businesses that use data intelligently can do business better. They can improve pricing and just-in-time supply chains.

They also can find cheaper suppliers that are closer to their location and offer more price transparency. Small businesses can use data to tailor products and services to individual customers. Big Data allows merchants to bring back personalized service by giving greater insight into consumer preferences using digital footprints when customers use their mobile devices, use a credit card, or post on Facebook or Twitter. It's the same information that shopkeepers once collected and memorized from behind the counter. Modern merchants can now gather that data digitally and use it to deliver the goods and services customers want. The result? More loyal customers and higher sales.

Social media also boosts communication among customers, providers, and communities, connecting customers with similar tastes and merchants with similar specialties. This not only will globalize and democratize payment processing, but also will be a potentially important source of Big Data. Still, social networking data poses challenges, including

the volume of data, lack of structure, velocity, as well as issues concerning integration and accuracy. For example, if a group of customers is discussing a merchant, those customers likely never will have total consensus of opinion because customer experiences differ and biases exist based on service provided, misunderstandings, and other factors. The challenge will be to create useful information out of this collection of data, such as merchant ratings and improvement guidance.

Some products currently on the market enable merchants to bring together all the information from POS data, labor metrics, and accounting numbers and mesh that data with social media data and processing data. In addition to the data collected and analyzed during the consumer shopping experience, acquirers and processors also can use real-time data analytics to direct payment transactions to the least-cost method and steer cardholders to lower-cost payment methods, ultimately helping merchants reduce transaction costs. (See page 20 for information about Big Data and downgrades.)

## Big Data Challenges

The problem in payment processing isn't the lack of data, but rather the lack of informa-

tion that can be used to support decision making, planning, and strategy. The challenge for most businesses also isn't the lack of data; it's the ability to analyze and convert data into a tool to help grow their business. As an example, a customer transaction can generate hundreds of data elements, including payments, loyalty, gift, discounts, and coupon and buying preferences. These need to be validated, processed, and integrated into a large data source to enable meaningful analysis. Multiply this by the number of purchases made by customers across multiple retailers, processors, and issuers, and combine it with the large number of points where data is generated and stored, and the scope of the Big Data challenge begins to emerge. This is only a small part of the payment processing data landscape.

Because of the complexity and the regulatory and compliance issues, payment systems can be slow to redefine and redesign processes and tend to be a laggard in adopting technology that affects the payment processing system, outside of some specific areas such as underwriting. In addition, the payment processing technology landscape includes vast areas of legacy technology, causing further complications.

Big Data challenges are compounded by the fragmentation and dispersion of data among the various stakeholders, including issuers, processors, merchants, marketing companies, ancillary vendors, data vendors, and standards organizations. No single provider has access to all facets of the transaction data. Solutions for Big Data will break the traditional model, in which all data is loaded into a warehouse. Data federation will emerge as a solution in which the Big Data architecture is based on a collection of nodes within and outside the enterprise and accessed through a layer that integrates the data and analytics.

The biggest obstacle to effective use of Big Data is the nature of payment processing information. Issuers, processors, gift and loyalty vendors, and other constituents all have their own silos of data. These are fundamentally difficult to integrate because of concerns about privacy and propriety, the complex and fragmented nature of the data, as well as the different schemas and standards underlying the data and lack of metadata within each silo. Even if everyone shared their data, there would be enough challenges integrating it within the silo, much less outside it.

With so much data being generated, what

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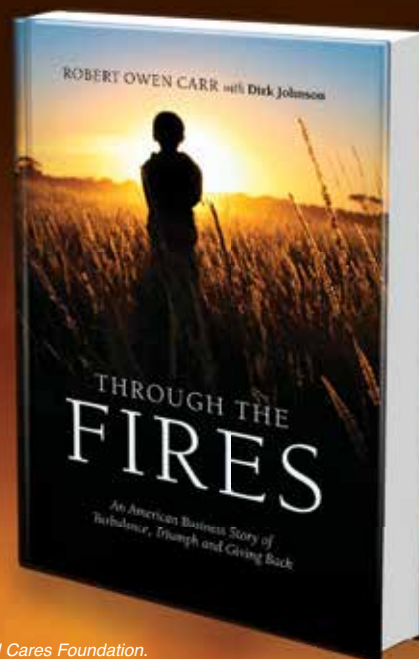
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**Robert Owen Carr** is the founder and chief executive officer of Heartland Payment Systems.

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Proceeds from this book will be donated to the Give Something Back Foundation and the Heartland Cares Foundation.

## COMMENTS

are small and large merchants to do with it? Big Data promises to simultaneously increase customer spending, improve customer service, and reduce operating costs; however, the amount of information and how to use it can be overwhelming for most merchants. While merchants and acquirers are unlikely—and in most cases unable—to share their data with competitors, the opportunity is there for acquirers and processors to help merchants better understand their data and provide the analysis for their merchants to help them run their businesses.

Industry groups such as ETA can facilitate the exchange of payment processing data; otherwise, adoption will be slow and use of Big Data will face numerous roadblocks. The entire payment processing system can realize benefits from democratizing Big Data access.

The Cloud is a technology solution that makes exposing and sharing Big Data easy and relatively inexpensive. To make it work, however, applications that securely utilize Big Data to provide tangible benefits to all stakeholders are required. Additionally, significant security and privacy concerns exist, including those focused on PCI compliance and personally identifiable information. A credentialing process could facilitate and automate this access, but there are complexities and challenges. Because merchants, customers, and other interested parties such as marketers need secure access, data access should be controlled by group, role, and function.

## The biggest obstacle to effective use of Big Data is the nature of payment processing information. Issuers, processors, gift and loyalty vendors, and other constituents all have their own silos of data.

Finally, the security of the data once it leaves the Cloud also needs to be assured. Big Data can be used to identify patterns and irregularities indicating and preventing security threats, as well as other types of fraud.

### Recommendations

To successfully identify and implement Big Data solutions and benefit from the value they can bring, payment processing organizations need to devote time and resources to planning and keeping the merchant's needs in the forefront. Recommendations include:

- defining a goal for using Big Data
- establishing a business intelligence center of excellence with a focus on Big Data
- deciding on an appropriate Big Data strategy based on the organization's current and target business and technological maturity and objectives
- assessing the various Big Data initiatives

that can be deployed to meet overall corporate objectives, focusing initially on quick wins

- working with a partner that understands the full range of Big Data technologies and implications, including trends, security, internal and external system integration, hosting and development platforms, and application and solution development.

These suggestions will provide the foundation needed for strong execution. Without preparation, merchants will not realize the envisioned benefits of Big Data and will risk being left behind by their competitors. **TT**

*Sunny Dronawat, PhD, is CEO and co-founder of POS on Cloud in Louisville, Kentucky. He also is a member of the ETA Technology Council.*

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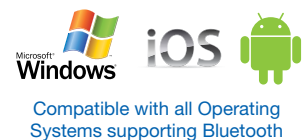
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# Viktor Mayer-Schönberger



Viktor Mayer-Schönberger is a professor of Internet governance and regulation at the University of Oxford and is co-author of *Big Data: A Revolution That Will Transform How We Live, Work, and Think*. He recently discussed how Big Data affects merchants and the payment space.

### What are the challenges for merchants in obtaining Big Data?

There are two core challenges: scale and trust. Merchants may only get to see a small subset of a dataset. That subset may, by itself, be too small to offer many insights and must be pooled with other subsets to be of value.

However, the larger a dataset, the more likely it is to contain errors, and the less likely it will be to carefully clean each and every datum point within it. Still, even massive, error-prone datasets are more reliable than pristine, but limited, samples. Any particular reading of a “messy” dataset may be incorrect, but the aggregate of many readings will provide a more comprehensive picture. In other words, the “messy” whole can outperform tiny accurate subsets.

As for trust, people will only use a payment infrastructure or service if it is trustworthy, and if there is a guarantee that all sensitive transaction data will be used responsibly and protected carefully. If the trust is lost, customers switch to other services.

Obviously, for a payment entity to say it complies with privacy laws is insufficient after [the Edward Snowden leaks]. For trust to be established and maintained, it will require stakeholders to go beyond regulatory compliance and to offer clear guarantees to customers that they will be responsible users of the data they have.

### What are the best uses for Big Data?

Today, harnessing Big Data is often seen as a way to improve the marketing of existing products. But the best users are already em-

ploying Big Data to develop new products and services—applying insights gleaned from data to enable innovation.

The use of transaction data to better predict credit worthiness is an example. In gauging credit worthiness, vast, fine-grained transaction data analysis may be far superior to what FICO and other scoring companies currently can provide.

In the past, small sample surveys were used to predict sales and key figures. It was a crude way to do this, and detail was lacking. By contrast, with Big Data, we can “now-cast” predictions of the economic health of retailers, sectors, regions, and economies—and greatly aid decision making at all levels.

### What impact will Big Data have on new payment models?

Right now, the emphasis for new payment models is to deploy widely, make it cheap and easy to use, and ensure privacy, security, and overall trust. All of these are probably necessary to get people to switch models.

But as some of the transactional data created by these new payment infrastructures becomes available, it will provide breathtaking insights at an amazing level of detail—insights that won’t be primarily about what an individual customer buys, but about merchants, what they sell, and where they sell it. This will lead to changes in business models. It will also give rise to a whole new layer of “data intermediaries” that will offer novel services—including payment services—based on the insights gleaned from data analysis.

### What about Apple Pay and Google Wallet specifically?

Apple designed Apple Pay from a consumer point of view; as such, it allows payments to be handled at a lower cost and with more consumer benefits than existing digital payment options. With the way in which credit card information is entered, to security and privacy—including not collecting any transaction information that can be tied back to an individual consumer—Apple Pay is a payment infrastructure that gets ease of use and trust right. However, doing so limits the volume of Big Data available to be analyzed and, in turn, any impact Big Data may have on Apple Pay going forward.

Google Wallet seems to me to be on the opposite end. Google can’t offer as much in terms of trust, because they see the value in the data and want to reap it. The more Big Data payment data there is to use, the more value that data will yield—and the more disruptive the payment model will be. The jury is out on whether Apple Pay or Google Wallet will win, but it’s going to be a very important battle to watch.

### Where will Big Data be applied next?

That’s hard to predict because there is so much variety and experimentation going on. However, my sense is that transactional data may be paired with contextual data to tell merchants more about future services they could provide. This has the power to reshape the industry, and to force some big players into the defensive. **TT**

—Julie Ritzer Ross

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