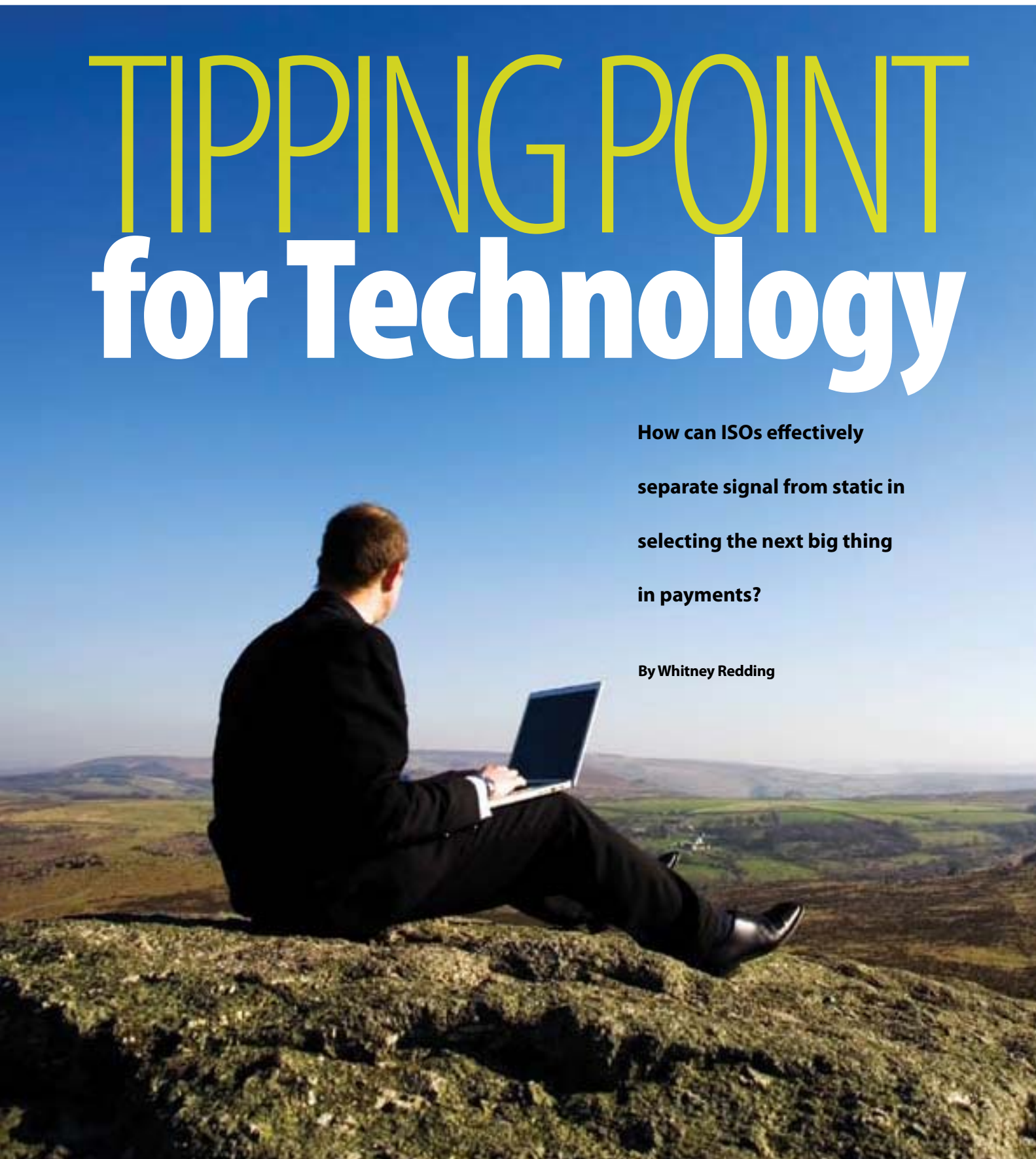


# TIPPING POINT for Technology

**How can ISOs effectively  
separate signal from static in  
selecting the next big thing  
in payments?**

**By Whitney Redding**



In the 1990s, smart cards were supposed to revolutionize the electronic transactions industry in the United States. They didn't. Then a few years ago, biometric authentication was supposed to lead the way to a more secure future. That didn't happen either. Now, contactless cards have found a niche at the corner McDonalds, pay-at-the-table technology promises to outsmart the card skimmers, and mobile phones seek to replace the wallet for the Blackberry crowd. Are the days of the lowly magnetic stripe payment card finally numbered?

The writing may very well be on the wall for the ubiquitous swipe card. The challenge for today's ISOs is to determine which new options will have staying power, deliver durable advantage, and improve their bottom line. Consumer preferences, security issues, the impact on the processing infrastructure, the advantages for merchants, and cost are all factors to consider when adopting these new product offerings to your portfolio.

### Smart Origins

Smart card technology has been around for decades. Unlike magnetic stripe cards, each "smart" card contains a chip that allows it to do more than store data. It acts like a mini computer processor, complete with memory, logic, and software applications.

The so-called "contact" smart cards—chip cards that require the user to insert the card into the reading device and enter a PIN—are now commonplace in Europe and Asia due largely to the added security they afford. This technology has helped to minimize credit card fraud in countries where it is used. But an attempt to introduce a chip card in the United States in the 1990s failed to catch on. The advantages of inserting the card in a reader, versus swiping a mag-stripe card, seemed negligible to consumers and merchants who were not overly affected by fraud at that time.

"They hoped to convince merchants to replace mag-stripes, but merchants didn't buy in because they weren't convinced it would do well enough to justify the cost," says Randy Vanderhoof, executive director of the Smart Card Alliance.

But now America's northern neighbor has joined Europe and Asia in embracing these cards. Canada's migration from magnetic stripe to smart chip-based cards will take place over the next seven years. By the end of 2010, most Canadian cardholders will be issued chip-enabled cards, and the country's ATMs will stop accepting mag-stripe cards by 2012. If all goes as planned, full implementation at the point-of-sale is expected by 2015.

### Cash Replacement—A New Frontier

Until a few years ago, most industry insiders didn't believe smart cards would become widely accepted in the United States. But several recent innovations seem to overcome the stumbling blocks that prevented them from gaining a foothold.

Instead of competing with the highly successful mag-stripe cards at the check-out counter—a doomed prospect, given the previous history of smart cards in the United States—contactless smart cards have quickly found a niche. By replacing cash in transactions less than \$25, contactless cards are being used in venues such as fast food restaurants where speed and convenience are paramount.

"Merchants and consumers like it. Consumers just tap their cards and they're done," says Mohammad Khan, president and founder of ViVOtech, which offers contactless readers, software, as well as add-on technology for merchants to enable contactless capabilities on their existing mag-stripe readers.

Credit card companies also have invested heavily in contactless cards. MasterCard rolled out its PayPass card in 2002, followed by American Express's ExpressPay and Visa's PayWave. Discover is expected to launch its own version this spring. By the end of last year, 33 million contactless smart cards had been

## KEY NOTES

- ▶ Credit card companies are heavily investing in contactless cards and applications. MasterCard, American Express, and Visa already offer smart cards, and Discover will launch its version this spring.
- ▶ By the end of last year, 33 million contactless smart cards were issued and 95,000 merchant locations were accepting the new technology worldwide. They're now used in transit systems, taxis, vending machines, grocery stores, theaters, and more.
- ▶ Using cell phones to pay for tickets and small transactions appeals to younger generations accustomed to using their phones for multiple tasks.
- ▶ Adoption of pay-at-the-table technology would get a boost if U.S. consumers embrace NFC-enabled cell phones.

issued and 95,000 merchant locations were accepting the new technology worldwide. While this represents a fraction of the cards currently in circulation, some banks, such as Citizens Bank and Key Bank, have already started to convert their entire portfolio of new cards to contactless. Other banks, such as leader JP Morgan Chase, have focused first on specific regions. The majority of contactless cards and merchant locations so far are in the United States.

“We see this as a very strong investment to replace cash in a substantial way,” said Toni Merschen, group head of MasterCard’s Chip Center of Excellence. According to Merschen, use of the contactless chip card

has reduced store checkout times by 15 to 20 percent, and drive-through times at McDonalds by 40 percent. In addition, customers who use the cards for fast and easy cash transactions are starting to use it for more expensive sales. MasterCard reports that year-over-year spending on cards featuring PayPass has increased more than 30 percent.

Use of the technology has expanded to transit systems, taxis, vending machines, grocery stores such as Wegmans and ShopRite, sports venues, theaters, office supply stores, and big box chains such as BJ’s Wholesale Club.

“We’re seeing this gradual expansion of

the market beyond the narrow niche of the convenience stores and fast food,” says Vanderhoof, adding that many are merchants that offer express lanes.

Up to now, eastern U.S. banks have been among the biggest boosters of smart cards, so the prevalence of contactless cards has been higher there than in the rest of the country, says Vanderhoof. But with large chains such as McDonalds and 7-Eleven stores now accepting the cards nationwide, the rest of the map is starting to fill in. For example, California-based Wells Fargo Bank has issued more than one million contactless cards since 2006.

Where does that leave ISOs who may be wondering when to embrace this payments type? Proponents of the technology advise monitoring the local market in terms of the availability of contactless cards. ISOs in areas with a higher penetration of contactless cards can find relatively inexpensive upgrades for mag-stripe readers that will allow them to also accept contactless cards. They also should start to look into contactless readers for merchants whose current leasing contract is due for renewal.

“That’s the time ISOs should recommend upgrades—before customers lock themselves in for the next three or five years,” says Vanderhoof. “By that time, the whole market could have picked up and passed them by.”

### Cellular Wallet

The marketing pitch for contactless cards is usually about speed and convenience; “tap and go” is a message that rings well in the convenience-store niche. But it takes more than speed and convenience to persuade other merchants that they need to upgrade their equipment, according to Paul Rasori, vice president of global product marketing for VeriFone Inc., the largest global provider of electronic payment systems. “It’s kind of a stretch to think that I can tap faster than I can swipe,” he says. “Unless they lower credit card rates for contactless use, what’s the incentive for merchants to use it?”

ViVOtech and VeriFone’s response to that question, at least in part, has been to invest in bringing the technology to cell phones.

Near Field Communications (NFC) is a standards-based, short-range wireless connectivity technology that enables two-way interactions between electronic devices. The technology is primarily embedded in



## Targeting Emerging Technology to Customers

When it’s time to figure out which new technology to adopt, the best strategy may emerge from your customer list. Each new technology addresses specific needs for a particular kind of merchant or consumer.




Pay-at-the-table technology (basically wireless terminals) applies to situations beyond restaurants—in fact, anywhere today’s transaction requires that consumers lose sight of their cards. It’s also attractive in situations where taking the terminal to the customer can help merchants increase sales by accepting cards where they couldn’t before. An example: stadium concessionaires, drive-through car washes, or even taxis.

Contactless cards are designed for convenience and speed. Merchants who benefit when customers can pay quickly and be on their way are the ones to target. Those who mainly have average transactions of \$25 or less, where consumers aren’t required to sign for purchases, are the best targets, as are merchants looking to increase checkout capacity without increasing the number of POS devices and personnel.

Mobile and NFC also are designed for speed and convenience, but they’re likely to be an easier sell to merchants to younger consumers and the merchants who cater to them. Quick service restaurants, vending machines, convenience stores, and specialty retailers are good bets.

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mobile phones. Users can interact with other NFC-enabled devices for payment transactions and other data transfers, and loyalty programs can be highly customized.

The notion of loading a credit card onto a cell phone and waving it at an NFC-enabled reader at the subway turnstile or in a supermarket has gotten a lot of attention because of the tremendous convergence it offers. Phone companies are starting to embed the technology onto the phone, itself, essentially turning the device into a payment card (or cards) capable of being used even if the battery runs out. (No account information is transferred through the cellular network.)

Using cell phones to pay for tickets and small transactions may appeal especially to business people and younger generations who are accustomed to using their phone for everything from making calls to sending e-mails to surfing the Internet. "The cell phone is more at hand than a wallet. If you look at the trend of what the cell phone used to be and what it is now, no one ever predicted what we're able to do on our phones today," says Rasori.

Ultimately, any merchant location that accepts contactless cards will have the capability to accept NFC-enabled phones, which are in the pilot stage. In one of those ongoing trials, a select group of commuters in San Francisco received Sprint phones enabled with ViVOtech's wallet software to use to pass through the turnstiles at any Bay Area Rapid Transit station.

"ISOs have been hearing about mobile payments for years," says Khan. "Finally, all of these different pilots have happened and the big commercial rollout will be next year. This is a very important time for ISOs to get on board and educate themselves."

### Table Service

Another emerging technology in the U.S. market, so-called "pay-at-the-table," features portable card terminals that can be carried right to customers. In a restaurant, for example, the waiter brings a handheld device to the table, and customers complete the transaction themselves, much like they do during supermarket checkout. They follow simple prompts on the device to swipe (or wave) their cards, enter their PIN (if necessary), and add the tip. The payment card stays with the customer at all times, which greatly speeds table turnover and reduces inflated tips and card skimming.

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—Paul Rasori, vice president of global product marketing, VeriFone Inc.

Pay-at-the-table technology can process credit cards, PIN debit cards, loyalty cards, and smart cards. It can be installed using either WiFi or Bluetooth communications technology and can be integrated into existing POS systems.

Although widely used in Europe and Canada, pay-at-the-table is just starting to appear in the United States. In addition to adding greater convenience, speed, and security to traditional payment methods, pay-at-the-table can also reduce credit card fees for restaurants because customers have the option of using a PIN debit card. "The motivation for merchant sales representatives to pay attention to this is that pretty much every restaurant in the country takes credit cards," Rasori adds. "Sixty to 70 percent of all credit cards are actually check cards."

Adoption of pay-at-the-table would receive a boost if U.S. consumers start to embrace NFC-enabled cell phones, according to ViVOtech's Khan. "You don't want to give the cell phone to the waiter," he notes.

Some ISOs have yet to be convinced that pay-at-the-table will catch on. Unlike in Europe, where the tip is included in the bill, the amount of tip left on the table at U.S. restaurants is at the discretion of the diner, who may not want a waiter watching while he or she completes the transaction. "I still think it is a little bit awkward," says Matt Freedman, COO of Total Merchant Services. According to proponents, however, the advantages to consumers of greater

security, a built-in tip calculator that allows customers to choose the percentage, and a speedy exit will outweigh any perceived disadvantages.

VeriFone and a number of large restaurant chains will begin to roll out the new technology by the middle of this year. According to Rasori, the company learned from a previous attempt to introduce pay-at-the-table 12 years ago and has created a secure product that can also withstand being dropped or spilled on.

"Generally speaking, this type of application has been talked about for many, many years. Various ISOs have become jaded to it and we've seen some resistance," he says. "The market wasn't really ready for it then, but the market has turned."

### Security Selling Point

Securing customer data has become the bane of many merchants' existence. Each year, they are required to wipe their systems clean of credit card account information, in compliance with increasingly rigid industry security standards. Further, they must frequently upgrade their systems and hardware, usually on their own dime.

"Magnetic stripes are the least secure way to store secret information," says Rasori. "They are easily read by very, very low-cost devices. Every time a chip card is used at a terminal, on the other hand, it creates a unique transaction code that must be authenticated. As other parts of the world make the switch to chip technology, fraud rings are migrating to areas where mag-stripes are still the norm."

Yet it's hard to predict if and when the domestic market will replace magnetic stripes with the more secure chip cards altogether. While other countries have embraced it, there has not been enough fraud in the United States to motivate credit card companies to require chips. "We started putting chip card readers out there in 2002 and 2003, but it fizzled out," says Rasori.

Some payment processors question whether the mag-stripe is truly on its way out. "I have seen technology come and go. What is really the most important thing today is transaction security, not the technology," says Kiran Gandhi, vice president of business development for MagTek Inc.

MagTek and VeriFone each have created card-reading technology to better safeguard mag-stripe cards' transaction information. For example, as the card gets swiped, the

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information gets encrypted and becomes useless to anyone who doesn't have the encryption key. Both companies also offer add-on technology that enables mag-stripe readers to accept contactless cards, thereby taking advantage of the new benefits that go along with contactless.

ViVOTech offers hybrid technology as well, but opted to forgo the new mag-stripe encryption technology altogether. "The mag-stripe still has a weak point," Khan explains. "The chip, itself, is more secure. It's not just about the reader."

### What's Next

Whether chips replace mag-stripe, or contactless supplants traditional cards, ISOs find themselves alternately trying to anticipate which products will gain traction and making sure their merchants are covered no matter what catches on. Many are taking small steps in one direction or another, while waiting for the larger players in the industry to put a stake in the ground and back a particular approach. For example, Total Merchant Services has distributed the new contactless readers to about 5 percent of its merchant base free of charge as a sign-on incentive, but it's unclear how many customers are using their contactless cards as such at these locations, according to Freedman.

## "This technology may only tip or take off when cell phones and PDAs are used to make payments."

—Matt Freedman, COO,  
Total Merchant Services

At this stage, Freedman says it is unlikely his merchant clients would demand the new terminals if his company did not give them away. Freedman would like to see more evidence that contactless cards are making a dent in the marketplace. "People don't switch just because we're offering a free terminal," he says. "I think [issuers] lose the momentum quickly if they don't get them out fast."

To successfully change consumer behavior to embrace the pay-by-wave concept, Freedman adds, the success of both contactless cards and mobile wallets may very well be interlinked. "The tipping point is when people actually use their cell phones as a mobile wallet," he explains, noting that if the consumers do not try to utilize the

contactless readers, the merchants will think they serve no functional purpose and will remove them from their point-of-sale systems.

"It's going to be difficult to get consumers to use these cards, because they are so much in the habit of handing their cards over to the merchant," he continues. "That's why this technology may only tip or take off when cell phones and PDAs are embedded with credit card information and used to make payments."

Regardless of when these emerging technologies go mainstream, ISOs that specialize in a particular type of merchant will likely have the edge because they can tailor the products accordingly, according to Kurt Strawhecker, managing director of The Strawhecker Group. Emerging technologies also offer opportunities to find a new niche, such as health-care co-payments or cab fares.

"I firmly believe you'll be most successful if you choose a narrow target audience [rather] than a very broad one," he says. "Go pick something to be really good at, and go own that vertical." **TT**

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