

# DIGITAL TRANSACTIONS

Trends in the Electronic Exchange of Value

# OUT OF THE CHIPS

And you thought the chip shortage was affecting only cars. It's driving POS terminal makers to distraction—and to innovative workarounds.

Volume Eighteen, Number Nine • [DigitalTransactions.net](http://DigitalTransactions.net) • September 2021

## ALSO IN THIS ISSUE:

The DoJ and Debit Routing

Surcharging Charges Ahead

Open Banking's Brighter Prospects

Stop Fussing With Online Checkouts!



# Everything You Need from One Family of Companies



Visit us at **WSAA • October 13-14**  
Omni Fort Worth Hotel • Fort Worth, TX



## The Companies of General Credit Forms are Ready to Meet all Your Point-of-Sale Needs

For more than 40 years GCF has been the leading single source for the merchant supplies industry — while remaining independently owned the entire time. As the industry changed, so did GCF. In reality, we often led the way. Today, our family of companies is your single source provider for business forms and distribution.

Forms, Rolls & Labels • Custom Printing  
POS Deployment, Depot & Configuration  
Revenue Generating Supply Resale Programs  
Custom Kitting, Distribution & Shipping  
Purchasing & Inventory Management



[www.gcfinc.com](http://www.gcfinc.com) • (888) GCF-NEWS



# INDUSTRY-LEADING SCHEDULE A + FREE CONTACTLESS SOLUTIONS

Boost your bottom line with the industry's best partner program!



UP TO 80%  
REVENUE SHARE



\$50,000  
PARTNER  
SIGNING BONUS



POS BONUSES  
UP TO \$5,000



15X TERMINAL  
BONUSES,  
UP TO \$5,000



\$500 MERCHANT  
SIGNING BONUS



SURCHARGING/  
CASH DISCOUNT  
SOLUTION

PLUS MUCH MORE!

## FREE MOBILE & CONTACTLESS SOLUTIONS



Free Contactless  
Payment Devices



Free SkyTab®  
Mobile Devices



Free QR Code  
Payments



Free Online  
Ordering Solution

Visit [www.isoprogram.com](http://www.isoprogram.com) or contact us to learn more.

Rich Lopez, National Sales Manager East - 800-201-0461 x 1205 or [rlopez@harbortouch.com](mailto:rlopez@harbortouch.com)  
Max Sinovoi, National Sales Manager West - 800-201-0461 x 1219 or [msinovoi@harbortouch.com](mailto:msinovoi@harbortouch.com)



**HARBORTOUCH**  
A SHIFT4 COMPANY

\*Free programs requires Merchant Processing Agreement. Terms & Conditions apply.  
© 2020 Shift4 Payments, LLC. All rights reserved.

HT4083\_12152020



# contents

SEPTEMBER 2021 • VOLUME 18, NUMBER 9

## Out of the Chips

22

The microchip shortage has caught up with POS terminal makers. Now, with forecasts that production won't meet demand until mid-2022, those makers are for bracing for more pain.

### THE GIMLET EYE Summer's Heat Is on Card Costs

4

### TRENDS & TACTICS

6

#### The DoJ on Debit Routing: a Tougher Rule, Please

Justice wants to make sure no online transaction escapes the Durbin Amendment's routing provision.

#### PayPal's CEO Is Not Your Pal

Dan Schulman is positioning his company to go after a major slice of the acquiring business.

#### Is BNPL Eating Into Credit Cards?

The financing option gains popularity as debit card holders say they want to avoid credit cards.

#### BlackBerry Revs Up Connected Car Payments

The former mobile-phone powerhouse now wants to enable commerce from your car's dashboard.

Plus, Security Notes says quantum computing's unknowns should be a flashing caution sign; and Payments 3.0 outlines how a rule from the CFPB upended the prepaid market.

### ACQUIRING

14

#### Is It Surcharging's Time?

Only two states now ban merchants from adding a charge for credit card usage. As it turns out, though, the strategy works better for some merchant categories than others.



### NETWORKS

18

#### The Key to the Future of Financial Services

Here's why the collection and sharing of data is in a second—and far better—phase.

### E-COMMERCE

27

#### Why Online Sellers Should Stop Differentiating Their Checkouts

Rather than simply performing housekeeping duties, the real payoff lies in adding functionality to the customer experience. Here's how.

### ENDPOINT

30

#### The Eight-Digit BIN Problem

Next year, a new ISO standard will expand the size of BINs by two digits, creating a security issue. Here's an approach to a solution.

Cover Illustration: Jason Smith

Digital Transactions (USPS 024-247) is published monthly by Boland Hill Media LLC, 800 Roosevelt Road, Building B, Suite 212, Glen Ellyn, IL, 60137. Periodicals Postage Paid at Glen Ellyn, IL, and at additional mailing offices. POSTMASTER: Send address changes to Digital Transactions, P.O. Box 493, Northbrook, IL 60065-3553.



**Fulfill the Promise of Secure Transactions**  
without compromising your reputation or your customers' personal information.

### Dynamag

Quickly and reliably accept digital transactions and magstripe payments with this space saving secure card reader.



### Gateway

Magensa's L3 certified Payment Protection Gateway (MPPG) works as your secure rail for sending and simplifying transactions.



### Tokenization

Magensa TokenExchange enables eCommerce, card-on-file, and manual entry, to initiate and complete secure transactions.



Scan to  
Learn More!

Discover  
TokenExchange



**FIND OUT  
MORE** ▶

☎ 562.546.6400  
✉ sales@magtek.com  
🌐 www.magtek.com



## SUMMER'S HEAT IS ON CARD COSTS

**YOU COULD BE FORGIVEN FOR NEGLECTING THE BATTLE** between merchants, on the one hand, and banks and payments networks on the other, over acceptance costs for payment cards. After all, the conflict is a long-running affair, and other issues have crowded onto the scene in recent months

But this summer that battle has grown more intense. And while much of the focus in recent months has been on debit card costs, credit cards have also crowded into merchants' cross-hairs.

You may recall the two big networks, Visa and Mastercard, last year were all set to make some adjustments in their credit card rates for 2021 after laying off any changes in 2020 in recognition of the economic pain inflicted on businesses by the pandemic. The adjustments raised a bunch of rates and lowered a few others, with a net impact of raising overall annual interchange-fee revenue for issuers by some \$889 million, according to estimates by CMSPi, a retail-payments consultancy.

Well, the two global networks postponed the rate changes again, this time to April 2022, and many observers figure they mean it this time. So, short of going to court, what can sellers do about the expected rate jumps?

Surcharging is one answer, and it's legal now in 48 of the 50 states (page 14). Acquirers have been happy to offer the tech that allows merchants to add on a bump for credit card acceptance, and no less a merchant than Amazon last month imposed a surcharge on Visa transactions in Singapore.

Other firms argue the solution lies neither in litigation nor in surcharging, but in technology. Their answer: replace credit cards with something a lot less expensive to accept. An example is Facepay Inc., which this summer made generally available a service aimed at replacing credit card payments with direct bank transfers from customers' accounts.

Ideas like this have cropped up before, but have generally failed because of their inconvenience for the customer. But Mountain View, Calif.-based Facepay, whose merchant base is largely concentrated among auto-shop owners, says its technology can ease the transition away from credit cards. The bank transfers will save repair shops anywhere from 5% to 10% of profits that otherwise would have gone to interchange, Facepay contends.

The company points to the impact of the Covid-19 pandemic and that looming \$889-million cost increase. "The time to prepare is now. It will erode all profits," a company executive warned in a press release.

That may sound dramatic. But as the long battle over card-acceptance costs—for credit and debit—wears on, costs mount, tempers flare, and gears are turning to find a way out.

John Stewart, Editor | john@digitaltransactions.net

**PUBLISHER** Robert A. Jenisch

**EDITOR-IN-CHIEF** John Stewart

**SENIOR EDITOR, DIGITAL**  
Kevin Woodward

**CORRESPONDENTS**  
Jim Daly, Peter Lucas

**ART DIRECTOR/PRODUCTION EDITOR**  
Jason Smith

**EDITORIAL ADVISORY BOARD**  
Eula L. Adams

John Elliott

Alex W. "Pete" Hart  
Former Chief Executive Officer,  
Mastercard International

William F. Keenan  
President, De Novo Corp.

Dr. Gideon Samid  
Chief Technology Officer,  
AGS Encryptions Ltd.

**DIRECTOR OF ADVERTISING**  
Robert A. Jenisch, 877-658-0418  
bob@digitaltransactions.net

**ADVERTISING SALES REPRESENTATIVES**  
Robert Mitchell, 877-658-0418, x7  
bmitchell@digitaltransactions.net  
Rob Akert, 877-658-0418, x6  
raker@digitaltransactions.net

Digital Transactions, Digital Transactions News,  
and DigitalTransactions.net are publications of  
Boland Hill Media LLC, 800 Roosevelt Road,  
Suite B212, Glen Ellyn, IL 60137

John Stewart, Managing Director  
Robert A. Jenisch, Managing Director

For advertising information, call  
877-658-0418. To subscribe or  
give us a change of address, go to  
www.digitaltransactions.net and click on  
"Subscriber Care" or call 847-559-7599.

The views expressed in this publication are not necessarily those of the editors or of the members of the Editorial Advisory Board. The publisher makes reasonable efforts to ensure the timeliness and accuracy of its content, but is not engaged in any way in offering professional services related to financial, legal, accounting, tax, or other matters. Readers should seek professional counsel regarding such matters. All content herein is copyright © 2021 Boland Hill Media LLC. No part may be reproduced without the express written permission of the publisher. Subscription prices: \$59/year for subscribers in the United States; \$69/year for Canadian subscribers. All other subscribers, \$119/year, payable in U.S. currency.

# DigitalTransactions.net

The payments market,  
all in one place.

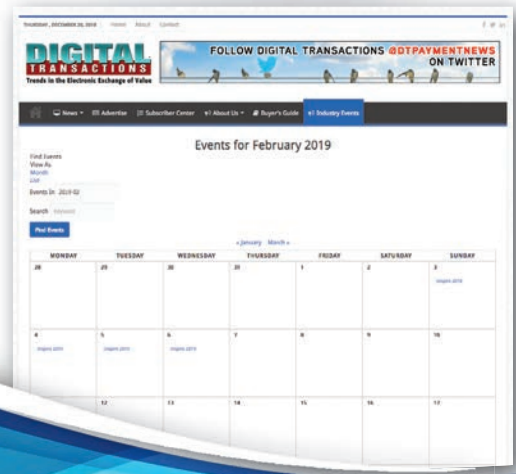
Breaking news from the  
payments market, posted daily

Concise, clean interface is easy to navigate  
13 years of payments news and analysis

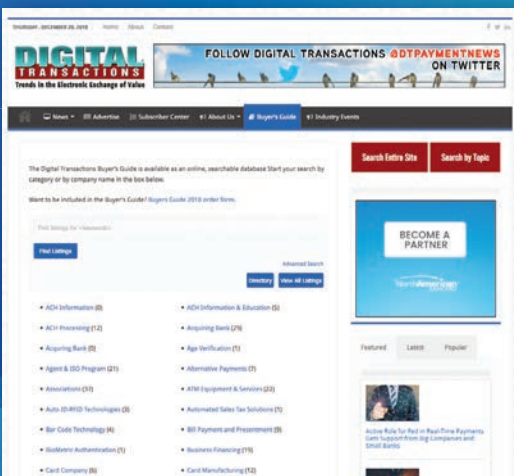


Complete  
current and  
past issues of  
*Digital Transactions*  
magazine

Calendar of  
industry  
events



Detailed  
listings of  
payments market  
suppliers



**DIGITAL  
TRANSACTIONS**  
Trends in the Electronic Exchange of Value

## THE DOJ ON DEBIT ROUTING: A TOUGHER RULE, PLEASE

The U.S. Department of Justice in August lent its weight to a proposed rule from the Federal Reserve Board that would reinforce merchants' choice of networks for e-commerce transactions arising from debit cards. At the same time, it suggested the rule could be made more stringent.

Justice's support for the proposal came as the comment period for the Fed proposal was ending. The Fed in May opened the proposal for public comment after receiving complaints from merchants that some banks were skirting a legal requirement to offer a choice of at least two unrelated networks for processing debit transactions.

The complaints focus specifically on online transactions, contending big financial institutions haven't enabled technology to send these payments to networks other than Visa and Mastercard. Debit transactions from computers and mobile apps have exploded in in the past year as consumers piled into e-commerce in reaction to the pandemic.

Justice framed its support for the Fed proposal as an effort to support competition in processing online debit. "There is limited competition to process online and other card-not-present debit transactions—which in 2019 accounted for over \$1 trillion in transaction value," said acting

assistant attorney general Richard A. Powers of the department's antitrust division, in a statement. "Consistent with President Biden's Executive Order on Promoting Competition in the American Economy, the department looks forward to working with the Board on this and other efforts to foster competition."

Justice's statement of support also comes with suggestions for improving on the Fed proposal. The department says the Fed "should consider whether the proposal is drafted broadly enough to capture all card-not-present transactions."

It also suggests the Fed's proposed rule may not go far enough. The Fed



'There is limited competition to process online and other card-not-present debit transactions—which in 2019 accounted for over \$1 trillion in transaction value.'

—RICHARD A. POWERS, ACTING ASSISTANT ATTORNEY GENERAL, U.S. DEPARTMENT OF JUSTICE, IN A STATEMENT



should “actively assess additional ways the proposed rule may be enhanced to increase competition for debit payment processing,” Justice’s notice says.

The Durbin Amendment to the 2010 Dodd-Frank Act requires that banks offer a choice of at least two unaffiliated networks to route merchants’ debit card transactions. Merchants, however, have long contended that choice has been largely ineffective with respect to online transactions, which are often entered without a PIN.

In these cases, merchants argue, at least some big banks have bypassed the dozen or so debit networks operating in the United States and have instead flowed the payments to Visa or Mastercard. The banks and the two national networks argue they have complied with the law.

—John Stewart

# PAYPAL’S CEO IS NOT YOUR PAL

PayPal’s boss made a declaration late this summer that may have been as much a warning to incumbent merchant acquirers as it was a promise to storefront merchants.

Referring to PayPal’s new transaction-pricing schedule, which went into effect Aug. 2, chief executive Dan Schulman made it clear PayPal will be playing for all the marbles.

“We’re going to be very aggressive about moving into in-store [acquiring],” Schulman told stock analysts during PayPal’s second-quarter earnings call. “If a merchant does all of its business with us, they can see their overall cost go down. We’re going after that.”

PayPal made headlines in June when it announced it planned a dramatic

increase in its online rate to 3.49% plus 49 cents per transaction from its current standard toll of 2.9% plus 30 cents—pricing that hadn’t changed in 20 years. But along with this hefty boost, the San Jose, Calif.-based payments giant also reduced its in-store rate to 2.59% plus 49 cents.

The new pricing follows PayPal’s launch last year of technology, including QR codes, to ease and speed up physical-world transactions. On the July call, Schulman said some 1.3 million merchants are now processing the codes. “Every 20 seconds, a new merchant signs up to accept our QR codes,” he added.

Now, he sees an opportunity to become the exclusive payments

## eProcessingNetwork.com

The Everywhere Processing Network®

800-296-4810

Contactless/NFC

PIN Debit

Inventory

Cash Discount

LEVEL II & III

Multi-Merchant

QuickBooks® Sync



provider to these sellers. “2.59% is going to allow us to compete aggressively for all of a merchant’s processing,” he said, though he didn’t offer any projections of volume or store increases.

The company now processes all or some transactions for 32 million merchants worldwide, it announced in July, though it did not break out brick-and-mortar from online merchants, where PayPal has traditionally found its business.

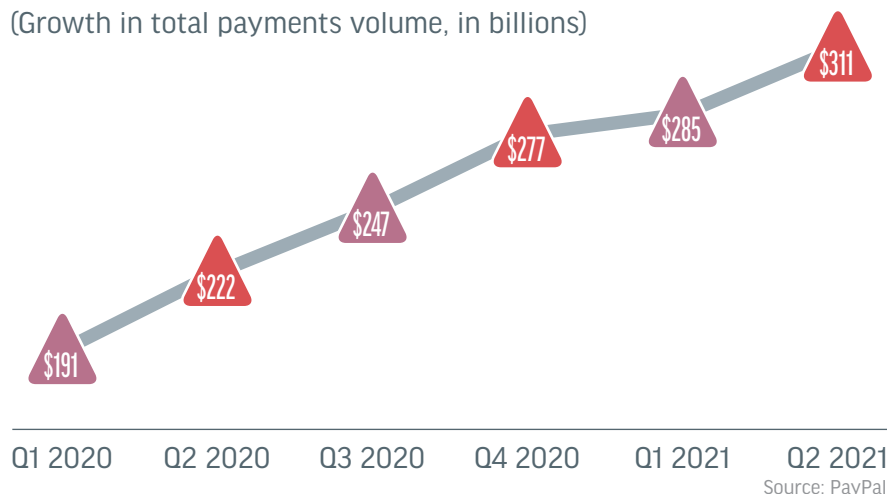
At the same time, PayPal is launching its Zettle point-of-sale technology in the U.S., devices that until now have been deployed in Europe. With the U.S. launch, PayPal is selling the Zettle card reader for \$29, with additional readers going for \$79.

Zettle transactions carry a US. rate of 2.29% plus 9 cents. The rate for QR code transactions on either PayPal or Venmo is 1.9% plus a dime. PayPal paid \$2.2 billion in 2018 to buy Stockholm-based Zettle, which was then known as iZettle.

In other updates, Schulman said coding had been completed on a

## PAYPAL TURNS UP THE VOLUME

(Growth in total payments volume, in billions)



revamp of PayPal’s digital wallet. The new Super App, as the company calls it, will include a range of financial tools not available before, including a high-yield savings account, cryptocurrency capabilities, a bill-pay feature with more available billers and aggregators, and “enhanced” messaging.

“This is the first change to the app we’ve done since I’ve been here,” said Schulman, who in 2014 joined PayPal from American Express Co.

If there is a shadow visible across PayPal, Schulman said, it’s being cast by eBay, the online marketplace that owned PayPal until 2015. eBay has for the last year been introducing a “managed-payments” platform that relies on processing from a number of providers, of which PayPal is just one.

But PayPal still controls about 60% of eBay’s checkout volume, Schulman estimated, even as its share of PayPal’s revenue has dropped from 26% in 2015 to about 3% now.

The worst effects of eBay’s defec-tion will be over by the end of the third quarter, Schulman said, but for the year PayPal expects the loss of eBay’s business to shave about \$1.4 billion off of the company’s projected revenue growth. “This is a timing issue,” he said. “The sooner eBay splits, the better.”

All in all, PayPal enjoyed a strong quarter. Active accounts were up 16% year-over-year to 403 million, a number that includes those 32 million merchants. Payment volume totaled \$311 billion, up 40% against a year-ago quarter that saw the first full brunt of the pandemic (chart). Revenue came to \$6.24 billion, a 19% increase.

—John Stewart

### MONTHLY MERCHANT METRIC

## Growth in Same-Store Sales Year Over Year

Annual volume change/growth of retained (non-attributed) accounts for given period divided by total portfolio volume from same period of the prior year.	Quarter	Percentage
	Q2 2020	-9.99%
	Q3 2020	2.61%
	Q4 2020	1.55%
	Q1 2021	8.64%
	Q2 2021	36.29%

Note: This is sourced from The Strawhecker Group’s merchant data warehouse of over 3 million merchants in the U.S. market. The ability to understand this data is important as small and medium-size businesses (SMBs) and the payments providers that serve them are key drivers of the economy. All data are for SMB merchants defined as merchants with less than \$5 million in annual card volume.

Source: The Strawhecker Group © Copyright 2021. The Strawhecker Group. All Rights Reserved. All information as available.







# SUMMER'S ENDING, DEALS ARE HEATING UP.

**FUEL TO THE FIRE - UP TO \$500 UPFRONT PER ACTIVATION**

Near-instant onboarding for submissions at all levels of risk through our seamless partner portal, Stratus. High risk industries include: Adult, Ammo, Bail Bonds, CBD, Credit Repair, Debt Consolidation, Firearms, MLM, Nutra, Telemed, and much more!

\*Less than 5 activations earn \$250 for each account. 5+ activations earn \$350 for each account. 10+ activations earn \$500 for each account.

Restrictions may apply.

**Ask us for more info! 877-401-4040**  
**becomeapartner@paymentcloudinc.com**



# IS BNPL EATING INTO CREDIT CARDS?

A majority of U.S. consumers in all age groups—76%—would like to decrease their use of credit cards as they seek to avoid debt, are wary of their ability to pay off their balances each month, and have concerns about making the minimum payments, according to a survey from GoCardless Ltd., a London-based global fintech for account-to-account payments.

These figure are even higher for younger consumers, with 84% in both the 18-25 and 25-40 age groups wanting to leave their credit cards in their wallets at the point of sale. Even 63% of those 57 years old or more would like to use their credit cards less. No data was provided for those between 40 and 57.



*'The pandemic ... likely accelerated the move away from credit cards. But this is part of a larger trend.'*

—HIROKI TAKEUCHI, CO-FOUNDER AND CHIEF EXECUTIVE, GOCARDLESS

What do they want to use instead? Debit cards and no-interest installment payments found a lot of favor. In the 18-25 age group, 89% would rather use a debit card, as would 87% in the 25-40 group. That dips to 54% for those 57 or older. Regardless of age group, 78% would choose a debit card instead of a credit card.

No-interest installment payments, which are becoming more widespread

online and in-store, are also viewed by many, particularly younger consumers, as a credit card alternative, with 87% in both the 18-25 and 25-40 groups preferring it over credit cards. That dips significantly—to 43%—among consumers 57 years old or more. Overall, 70% of consumers would choose buy now, pay later services. GoCardless surveyed more than 1,000 adults this summer.

The Covid-19 pandemic was a major factor behind these results, according to GoCardless. “The pandemic put people in tough positions financially, and that likely accelerated the move away from credit cards. But this is part of a larger trend, particularly among young Americans,” Hiroki Takeuchi, co-founder and chief executive of GoCardless, said in a statement.

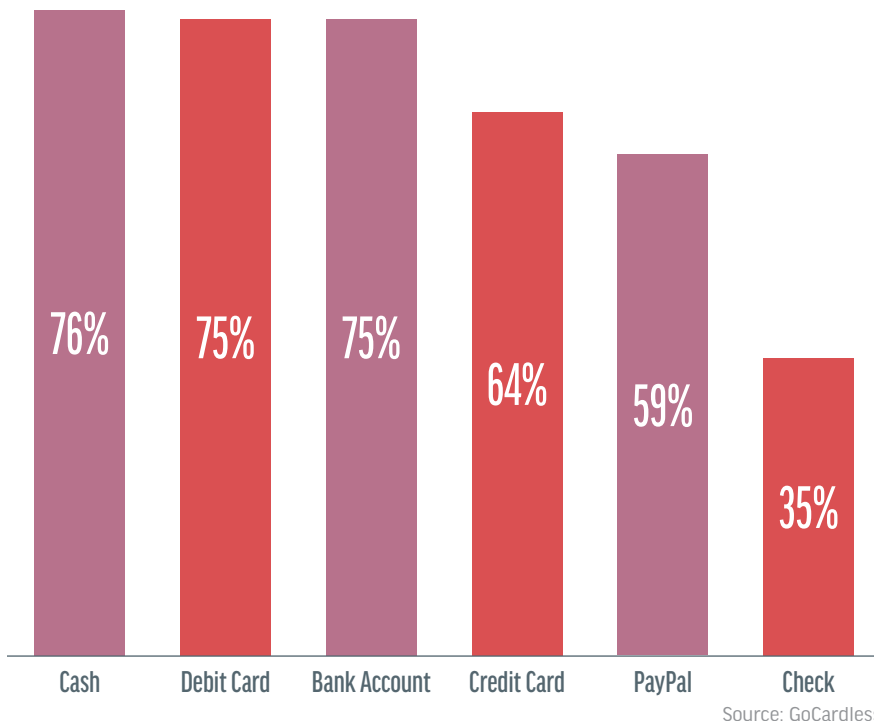
“Alternative payment methods such as buy now, pay later are booming, and Americans are also discovering the benefits of account-to-account payments such as ACH debit, which have been popular in other parts of the world for years,” Takeuchi continued. ACH is a reference to the automated clearing house payment system.

And, given the number of younger consumers wanting options other than credit cards, Takeuchi suggests a “seismic shift” in credit card use could be under way.

—Kevin Woodward

## CASH IS STILL KING—BARELY

(Payment methods by average number of consumers with access to them across the U.S. and seven other countries)





# BLACKBERRY REVS UP CONNECTED CAR PAYMENTS

Vehicle-based payments got a boost last month with BlackBerry Ltd.'s introduction of a new app to enable secure payments from a car's dashboard.

The app, which leverages the concept of the connected car, acts like a mobile wallet that connects to a payment network to enable a variety of transactions, including fuel purchases, toll, parking and insurance payments, as well as paying for vehicle maintenance.

The app, developed in partnership with Car IQ Inc., an Oakland, Calif.-based provider of financial technology, connects a vehicle directly to a merchant and payment network, as well as the consumer's bank or card issuer, to facilitate payments.

Data from the car is used to create a unique ID for each vehicle that allows Car IQ to validate the vehicle to initiate a transaction. Car IQ's technology leverages BlackBerry's IVY platform, a cloud-based system that allows automakers to read vehicle-sensor data and gain insights about the vehicle from it. BlackBerry's new app connects the car directly to the merchant and the consumer's bank simultaneously.

"Our ability to see into the car adds another layer of benefit for the bank, the car owner, and the merchant. They can see exactly who the car is

and if it is authenticated to pay, and they can validate the service the car is requesting," Car IQ chief executive and founder Sterling Pratz says by email.

"For example, when a car purchases fuel, our platform can see the car, the size of its gas tank, and the number of gallons inside. We use this information to tell the merchant the maximum amount of fuel the car will receive, then check back in with the car after fueling to verify how much it actually received."

BlackBerry's and Car IQ's technology enables consumers to initiate payment for fuel, tolls, and services from the dashboard of their vehicle without a credit card. "Vehicle payments are easier to use, more secure, and [five] times faster than [physical] credit card payments," Pratz says.

BlackBerry's application is part of the connected-car concept that makes automobiles part of the Internet of Things by allowing the vehicle to share Internet access and data with other devices inside and outside the vehicle ("Hitting the Accelerator," January 2019).

Transactions initiated through connected cars are projected to reach more than \$620 billion annually by 2030, according to Ptolemus Consulting Group.

Ptolemus expects fuel purchases and parking payments to be the primary transactions made by consumers driving connected cars. Content subscriptions, software updates, electric-vehicle charging, and food-and-beverage and grocery purchases are also expected to be common transactions.

"Major auto manufacturers are building commerce and entertainment functionality into their vehicles' tech platforms while at the same time Apple, Google, and now BlackBerry are offering connected-car functionality through their devices," Thad Peterson, a senior analyst for Aite-Novarica Group, says by email.

Although the facilitation of payments through the connected car is still evolving, the addition of payment capabilities is a logical step, according to Peterson. "Linking the device that the customer uses all the time is a logical capability for a smart phone to deliver and it potentially creates less friction for the user than having to access the vehicle's platform," he says.

BlackBerry, which was once a major player in the mobile-phone market, has expanded its business beyond phones in the past decade to intelligent security software and services for enterprises and governments around the world.

The company leverages artificial intelligence and machine learning to deliver cybersecurity and safety and data-privacy technology, as well as endpoint-security management, encryption, and embedded systems. **DT**

—Peter Lucas

'Vehicle payments are easier to use, more secure, and [five] times faster than [physical] credit card payments.'

—STERLING PRATZ, CHIEF EXECUTIVE, CAR IQ

# QUANTUM UNKNOWN: A CAUTIONARY TALE

**WHEN AUTOMOTIVE VEHICLES CAME ON THE ROAD**, they were described as “fast horses.” When the transistor replaced the vacuum tube, it was described as a “smaller switch.” And now that quantum computers are in the offing, they are being described as “faster computing machines.”

We know very well that the reality that unfolded from automotive vehicles was much more than “fast horses,” and the revolution unleashed by integrated circuitry is much more than a smaller vacuum tube. Similarly for quantum computers. They represent a bold new way to harness the enormous computing power of nature for the benefit of mankind.

When banks set up a “quantum-safe” digital-money system, or when payment companies build a “quantum-resistant” payment system, what they say is that their solution is safe against the published quantum papers. They claim resilience against algorithms that were devised in the last century.

No sooner did it become clear that quantum is so powerful, than its leading edge became veiled and hidden from public view. What is most concerning is the fact that we know very little about how effective quantum computers have become against the security of public/private keys.

Central banks around the world are moving to digital currencies. Most of them, impressed with the



BY **GIDEON SAMID**

[gideon@bitmint.com](mailto:gideon@bitmint.com)

sustained success of Bitcoin, are opting for a Bitcoin variant that is free from the most disturbing Bitcoin attributes. These newly cast national currencies, in most cases, hold to the intellectually intriguing idea whereby a financial account is no longer a statement written in a well-protected database, but rather is a string of alphanumeric characters known to the public at large.

This public key has a matching private key, which, so the theory goes, is known only to the account holder. And this private key is all that is needed to drain the account. You don't need a name, or picture, or fingerprint.

The builders of these currencies believe that quantum computers will not advance to threaten their design, and also that that no mathematician will be innovative to the point of discerning a deductive algorithm for this task.

Unfortunately, many central bankers, while being very smart financially, are not very well educated on cryptography. They rely on the expressed confidence of the currency designers, and are enticed to migrate the wealth of humanity out

of protected databases and into public account keys.

One thing is for sure: Global terrorists are smiling beneath their hoodies. No longer do they need to assemble half a dozen atomic bombs to render the globe into ashes. All they need to do is to find this hidden algorithm. Then, overnight, they could drain all the money trusted to public keys.

The solution that BitMint and a few others promote is to achieve the desired capabilities of digital money, but with the assumption that, over the life of the system, the state of the art in computing will advance dramatically. Specifically, we say: Since the public-key account identifier does commit to its matching private key, then, over the life of the system, someone will find out how to deduce the latter from the former.

This notion applies to regular encryption, too. All the prevailing ciphertexts commit to the plaintext that generated them. So we must assume that, soon enough, someone will be able to extract the plaintext from the ciphertext. The solution is conceptually simple: Use ciphertexts that don't commit to their generating plaintext.

A payment system, and more so a digital-money system, is an enduring and expensive project. It should be designed with a cautious attitude towards the not-yet-known capability of quantum computing. **DT**



# HOW THE PREPAID RULE TIPPED THE MARKET

**THE PREPAID MARKET** has been upended and shrunk by the Consumer Financial Protection Bureau's prepaid accounts rule.

Prepaid cards were a popular money-management tool for low-income Americans. And even though the cards never generated many complaints, the bureau decided they needed to be heavily regulated. Now, direct-to-consumer prepaid cards are being replaced by digital bank accounts offered by the same companies that once offered prepaid cards.

Examples abound. In January, Green Dot Corp., once one of the biggest providers of direct-to-consumer prepaid cards, launched "Go2Bank," a digital bank account that offers access to payroll two days early, access to credit, and a high-interest savings account.

In June, Green Dot converted its Walmart money card from a prepaid product to a demand-deposit account product, saying in a press release the new product would help customers by offering more money-management tools, lower direct-deposit amounts to waive monthly fees, and overdraft protection up to \$200.

Netspend last year created its own "All-Access Account," which is a digital bank account that offers banking features. The company has had DDA products since 2017.

A little history can help explain why products are evolving this way.



BY BEN  
JACKSON

[bjackson@ipa.org](mailto:bjackson@ipa.org)

Despite being in development since 2012, the prepaid rule only went into effect in 2019. Early versions appeared to apply primarily to disclosures for general-purpose reloadable cards sold directly to consumers. Gift cards had been covered already by provisions of the Credit Card Accountability Responsibility and Disclosure Act of 2009. And the Federal Reserve had given full Regulation E protection to payroll cards as of July 2007.

But instead of focusing on disclosure, the final rule tried to cover every possible type of consumer payment, while remaining vague about what a prepaid account is. It does specify that person-to-person products and mobile wallets that store money are included, but it adds the traditional pooled-account structure need not be present for an account to be considered prepaid.

Nonetheless, virtually every deposit-focused fintech launched in recent years has avoided being prepaid and worked to make sure customers (and regulators) know it offers a DDA. So-called neobanks like Chime, Dave, Revolut, N26, and Robinhood have largely avoided the regulatory scrutiny the prepaid industry faced. They have also escaped the ire of consumer advocates, who decry

every prepaid program that offers an overdraft option, but who ignore or cheer on digital-banking apps that do.

The rule went into effect in April 2019. In December, PayPal filed a lawsuit alleging the rule "requires PayPal to make misleading and confusing disclosures about the fees and functionalities of its products and places unreasonable restrictions on consumers' abilities to link certain credit products to their PayPal accounts."

On Dec. 30, 2020, Judge Richard Leon of the U.S. District Court for the District of Columbia handed down a summary judgment in the case. The ruling on its face was narrow, but it deregulated a lot of financial services. Whether it will hold up on appeal adds an element of uncertainty for the industry.

A road paved with good intentions can lead to a dark place. The CFPB in effect picked winners and losers by placing heavier requirements on prepaid deposit products, while limiting their ability to earn revenue by restricting their scope to offer credit. Meanwhile, the bureau has not, to date, scrutinized the new products that came up in the market. The problem is that consumers who feel prepaid is a better option find themselves with fewer choices.

The lesson? Policymakers should consider rules that create a level playing field for all deposit products and give consumers an equal level of protection and access. **DT**

# acquiring

## IS IT SURCHARGING'S TIME?

Only two states now ban merchants from adding a charge for credit card usage. As it turns out, though, the strategy works better for some merchant categories than others.

BY KEVIN WOODWARD

**DOWN TO JUST TWO STATES**, bans on surcharging credit card transactions have eased. Does this herald further adoption? If so, how is the payments industry readying for this next phase?

It's been eight years since the card brands changed their rules to enable surcharging on credit card transactions for merchants that want to recover the fees they pay on each sale. In that time, several providers have emerged, but, perhaps important, all but two states now allow merchants to add surcharges. There had been three until this summer, when Colorado's governor signed legislation allowing the practice.

The central questions now, with just Connecticut and Massachusetts retaining surcharging bans, are: Where does the practice stand now? Are merchants ready to adopt it? Will consumers accept it?

Proponents consider the timing right. Others wonder why now, if the practice has had eight years to take hold in a majority of states.

On the plus side is that merchants, long bemoaning their credit-card acceptance costs, can pass these costs along to consumers choosing to use credit cards. Surcharging only applies to credit cards, as the card brands do not permit the practice on debit card transactions.

The potential negative is fear of the reaction from consumers using credit cards, which could lead some merchants to shy away from the practice. While surcharging may not be for every merchant or every merchant category, it can be a fit for many.

### A 'MUST-HAVE'

Advocates tout surcharging's impact on merchant revenue. "Surcharging as a merchant service is great and offers an opportunity for small-business owners to keep costs low," says Ben Griefer, chief operating officer at Maverick Payments, a Calabasas, Calif.-based payments provider.





“As our industry has become so price competitive, it can be difficult to continue to invest in solid support, technology development, and so on, so with a service like surcharging, it minimizes costs for the merchant while allowing us to invest as needed,” Griefer adds. “Given the bigger margins into value, [this] ultimately helps the merchants scale their business and differentiates our resellers. It’s a win-win for everyone.”

Some acquirers discussing surcharging with their merchants view it as essential.

“Acquirers are telling us that they see surcharging as a must-have. There are certain verticals where surcharging is becoming an industry standard, and any acquirer who wants to sell into these verticals has to offer a strong surcharging solution,” says Michael Tomko, chief operating officer of Chicago-based CardX, a specialist in helping merchants adopt surcharging.

Merchant awareness of surcharging is increasing, Tomko says. “Merchants are much more familiar with surcharging than they were even two or three years ago,” he says. “Many of them have seen surcharging as buyers of goods and services, and they’re often familiar with other companies that have adopted this model.”

Griefer says merchants are open to all options when it comes to their payment card processing. “There is ample opportunity for agents and sales organizations to educate their merchants on changes and optimizations to programs like surcharge or cash discount, especially with how much the payments landscape has changed in the last eighteen months,” he says. Some merchants offer cash discounts to customers who use a form of payment other than credit cards.



<p style="font-size: 1.2em; font-weight: bold;">Credit</p> <p style="font-size: 0.8em; font-weight: bold; text-align: center;">3.5% FEE</p>	<p>To cover the cost of credit card acceptance, we pass on a <b>3.5% credit card fee</b>.</p>
<p style="font-size: 1.2em; font-weight: bold;">Debit</p> <p style="font-size: 0.8em; font-weight: bold; text-align: center;">NO FEE</p>	<p>This fee is not more than the cost of accepting these cards. There is <b>no fee for debit cards</b>.</p>

A CardX terminal with suggested language explaining the surcharge policy to card users.

A divergent point-of-view, however, asks if merchants truly are interested in surcharging. “I don’t see many [merchants] doing it,” says Thad Peterson, senior analyst at AiteNovarica, a Boston-based advisory firm. While some merchants, like those with a reasonably small volume where the cost of the transaction is significant, may use surcharging, it’s not likely to spread across most merchant types, he argues.

Peterson also suggests Connecticut and Massachusetts legislators may not be in a hurry to lift their surcharging bans. Peterson agrees dropping the ban could be a business-friendly action, but legislators may see that so few other merchants are adding surcharges in other states that they may need a push, such as a large retailer adopting it, to make a change.

One big merchant, albeit for just one of its Web sites, is trying a surcharge strategy. Amazon.com Inc. was to begin imposing on Sept. 15 a 0.5% surcharge on Visa credit card transactions made on its Singapore e-commerce site.

## ‘THE DEFAULT OPTION’

Relaxation of state bans has meant more small businesses and customers have freedom of choice, Griefer says. “With the new post-pandemic economy emerging, businesses will be looking for multiple ways to save money and strengthen their profit margins. States providing clear legislative and educational resources to business owners and consumers will be best positioned,” he says.

Advocates acknowledge that surcharging is not applicable to all merchants or even all merchants in the same category.

“In certain markets, it will become commonplace,” Griefer says. “Merchants are being more proactive when it comes to eliminating overhead. Value-driven consumers will understand the opportunity for savings offered.”

Merchants with higher variable costs per transaction are well-matched for surcharging or cash-discount programs, Griefer says. Cash

discounts offer consumers using cash a discount off the stated retail price.

“Higher-risk businesses, or merchants with lower ticket purchases tend to have higher costs associated per transaction,” he says. “Being transparent with consumers and offering options leads to a more loyal customer base and more predictable costs.”

There’s no doubt in Tomko’s view that surcharging’s U.S. growth has been a vertical-specific story. “We believe that the program rules simply don’t work for the restaurant and retail market,” he says. “A merchant who accepts primarily debit cards isn’t going to realize major savings with credit card surcharging, and—even worse—debit cards might be as expensive as credit cards for small-ticket transactions.”

---

## ‘Being transparent with consumers ... leads to a more loyal customer base and more predictable costs.’

—BEN GRIEFER, CHIEF OPERATING OFFICER, MAVERICK PAYMENTS

“In contrast,” he continues, “for the large-ticket, credit-heavy verticals like business-to-business transactions, professional services with invoice payments, recurring subscription payments, and logistics and freight, surcharging is quickly becoming an industry norm and merchant retention has been extremely strong.”

Business-to-business payments, in particular, hold a lot of promise for surcharging providers, Tomko says. “It appears almost certain that surcharging will become the default option in many of the industries where it has been a strong fit. Within three to five years, we expect that broad sectors of the American economy where card payments are not yet common—especially in business-to-

business payments—will significantly increase their card payment volume by introducing surcharging.”

“At the same time, we don’t expect that more price-elastic businesses like retail, or small-ticket businesses like convenience stores, will embrace surcharging as a norm,” he says. “Businesses in these verticals are more likely to see equal splits between debit cards and credit cards, so eliminating the cost of credit cards will be less impactful for them.”

## ‘PROVEN AT SCALE’

A big wild card, however, is consumers. Their reluctance to pay surcharging fees, especially in hotly competitive arenas like retail or quick-serve

dining, deters these merchants from adopting the practice.

“Customer reception still seems to hinge on how effective and clear the communication about the surcharge is,” Tomko says. “We’ve heard anecdotally about merchants using certain providers that, in addition to skirting the rules, frustrate customers by failing to proactively disclose the surcharge or itemize it on a receipt. Merchants using these providers often have to refund customers to avoid complaints.”

Griever reiterates the importance of transparency and messaging when it comes to consumers and surcharging. “Most people understand there is an inherent cost to using cards, and whether they are choosing to use a card, or not, and when properly

informed, appreciate the choice,” he says. “Additionally, businesses, specifically small businesses, benefit from this and cardholders can see it as a way to support their local businesses.”

Surcharging also may, in a way, open new markets for card acceptance, Tomko says. “Many merchants we work with have historically not accepted cards or only accepted them through limited channels (like a call center), and they view surcharging as a way to put card payments forward as a primary option while keeping their costs manageable.”

And concerns that surcharging may spur consumers to use cash may not be as prominent as once thought. “While there were initially questions about whether surcharging might steer customers to cash, as the surcharging market has matured it has become clear that the more salient story from the card-brand perspective is net-new volume,” Tomko says.

“Emerging verticals, especially in B2B and invoice payments, that have traditionally not accepted cards are now using surcharging and seeing a rapid increase in the volume of payments made by card,” he continues.

With all but two states permitting credit card surcharges, there is now an unprecedented opportunity to prove how well surcharging works, Tomko says. “Merchants throughout the country are recognizing that surcharging not only is here to stay, but has been proven out at scale—and is becoming the norm in certain verticals.”

He continues: “These state-law victories have created significant demand among merchants who operate nationally with customers in multiple states, as they’re able to provide their payers a consistent pricing model and realize more savings.” **DT**





**ONLY ONE** OF THESE BIRDS CAN  
GIVE YOU THE LATEST NEWS  
IMPACTING THE **PAYMENTS MARKET**

Today and every day follow

**DIGITAL TRANSACTIONS**

**@DTPAYMENTNEWS** on Twitter

**DIGITAL**  
**TRANSACTIONS**

Trends in the Electronic Exchange of Value

## THE KEY TO THE FUTURE OF FINANCIAL SERVICES

Here's why the collection and sharing of data is in a second—and far better—phase.

BY PAUL DIEGELMAN

Paul Diegelman is vice president, aggregation and connectivity, at Fiserv Inc.

**IN TODAY'S INTERCONNECTED WORLD**, consumers want to be able to access information when, where, and how they want. Financial information is no exception.

Given its nature and importance, however, the sharing of financial data comes with a unique set of considerations for both consumers seeking convenience and better financial management and sources of data seeking to protect information from fraud, theft, and illegal use.

Our company, Fiserv, is in a unique position as both an aggregator of

financial data, and a data source supporting the infrastructure of almost 4,000 banks and credit unions, a position that allows us to offer a holistic view of the current landscape for connectivity and aggregation, and what's to come.

With that in mind, here's a look at the state of data aggregation, and the move toward what we can call "data aggregation 2.0," as we consider how this trend will play a key role in enabling the future of financial services.

### A POWERFUL TOOL

Data aggregation is financial data brought together—that is, aggregated, with consumer permission—from multiple sources, including banks and credit unions, credit card platforms, consumer bills, wealth and crypto platforms, and other data sources.

But aggregation does more than get data where consumers want it to go. It also makes that data a powerful tool that wealth, tech, fintech and financial institutions use to benefit consumers.

Initially, data aggregation enabled traditional personal financial management. We first saw it come to life in simple pie chart graphs breaking





down investments in stocks and bonds into different categories. Those capabilities then evolved to show monthly savings, cash flow, progress against financial goals, debt management, and more.

While data aggregation made these personal financial-management features possible, they are now fairly common. Indeed, they have created the foundation for the next wave of opportunity—driven by data aggregation—to wash over the financial landscape.

Aggregation now enables the fulfillment of the open interactions that are the future of financial services. As it evolves, aggregation is no longer simply bringing information together in one place (aggregating). It's now also transforming how financial institutions, tech platforms, apps,

and consumers interact in singular activities such as targeted offers, payments, and lending.

In 2020, the spotlight fell on data aggregation with the announced, then scuttled, acquisition of Plaid by Visa and the announced, then closed, acquisition of Fincity by Mastercard. These industry movements signal the importance of data aggregation and connectivity, both of which will continue to grow and mature as the use cases for consumer-permissioned data sharing continue to expand.

The Consumer Financial Protection Bureau underscored this importance when it announced an advance notice of proposed rulemaking related to Section 1033 of the Dodd-Frank Act. The proposal aims to codify consumer rights to access financial records.

## DIRECT CONNECTIONS

Today, what's driving the ongoing evolution of data aggregation is largely the growth of consumers' interest. Consumers want to share data from their financial-services providers—often their bank or credit union—with an array of other financial providers that can use that data to create some form of opportunity for the consumer.

At the same time, consumers want to access and share their data when, where, and how they want. Enhanced data aggregation can drive fintech, business, and banking relationships when those expectations are met.

The industry's march toward this new era of open banking will also lead to the decline of a historical method of data aggregation: "screen scraping" or "harvesting."

# THE ONLY MAGAZINE COVERING THE TOTAL PAYMENTS MARKET



In 2019, there were 150.2 billion digital transactions in North America. *Digital Transactions* magazine covered them all. It is the only publication addressing the total market.

Subscribe today by going to [Bolandhill.omedacom/dtr/](https://Bolandhill.omedacom/dtr/) to start tackling the ever-changing payments market.





# At least once a week, I get a call or an email from someone with an aggregation or connectivity use case we haven't seen yet.

Screen scraping can be inefficient, as it can burden the technical infrastructure of data sources. That, in turn, can slow Web site performance or hinder the mobile-app experience for consumers. It's also often viewed as a less secure practice, as it relies on the sharing of usernames and passwords.

Many organizations are moving away from username-based screen scraping in favor of token-based direct connections that also offer more insight into who is accessing data and when, along with improved privacy and consent management for consumers.

The concept of what we can call Data Aggregation 2.0 has enabled, and also transformed, the ways consumers interact through technology, including the apps they have come to know and love. The basics of data aggregation have also given rise to new consumer empowerment in managing their finances.

And for technology and service providers, the ability to aggregate data gives them the insights they need to operate, make decisions, and better serve customers. This is especially critical for processes that require gathering large amounts of data, such as loan applications.

## EXACTING CRITERIA

The potential of Data Aggregation 2.0 and the connectivity it brings rely on two key facets: standardization of processes and robust security. In the

best interest of all parties involved, data-management practices should be designed to protect consumers.

For that reason, organizations like Financial Data Exchange (FDX) and the Financial Data and Technology Association (FDATA) are at the forefront of bringing together industry leaders to advance standardization, security, and consumer consent, all of which will be necessary to further facilitate the sharing of financial data.

This movement is critical in part because payment and financial-services providers have exacting criteria for data aggregation. For VoPay, a digital-payments service provider that connects businesses to the banking and payment ecosystem, standardization and security come by partnering with an aggregator.

VoPay chose one that would verify contact information in support of broader Know Your Customer (KYC) and fraud-prevention purposes, verify funds before initiating EFT/ACH transfers, and confirm when a transaction has occurred.

The company also insisted on wide coverage of financial accounts, consistent data security and integrity, and quick and reliable data access for the best user experience.

Another example is FinLocker. Homeownership can be daunting for anyone, but especially for those in underserved communities. FinLocker, a personal finance-management tool, helps consumers of varying ages and

incomes start, track, and complete their homeownership journey.

By partnering with an aggregator, FinLocker enables lenders within their network to incorporate financial data aggregation and personal financial-management tools into the loan-preparation process.

This lets consumers see and manage all of their financial information in one place so they can better prepare for their financial futures well in advance of a loan application. And it also improves the process for lenders.

## STAYING AHEAD

At least once a week, I get a call or an email from someone with an aggregation or connectivity use case we haven't seen yet. There's so much potential beyond today's data aggregation applications. That's the future of Data Aggregation 2.0.

Data aggregation is experiencing very high growth across many use cases. The proficiency with which financial institutions, other data sources, and technology firms share data can determine how consumers view their solutions, while speed and convenience will remain key.

Working with a partner that can reliably aggregate data from the widest array of sources, with built-in adaptability and data security, will help organizations stay ahead—ultimately enhancing consumers' experiences and earning their long-term loyalty. **DT**





# Digital Transactions News

We deliver the payments industry news to your email inbox daily!

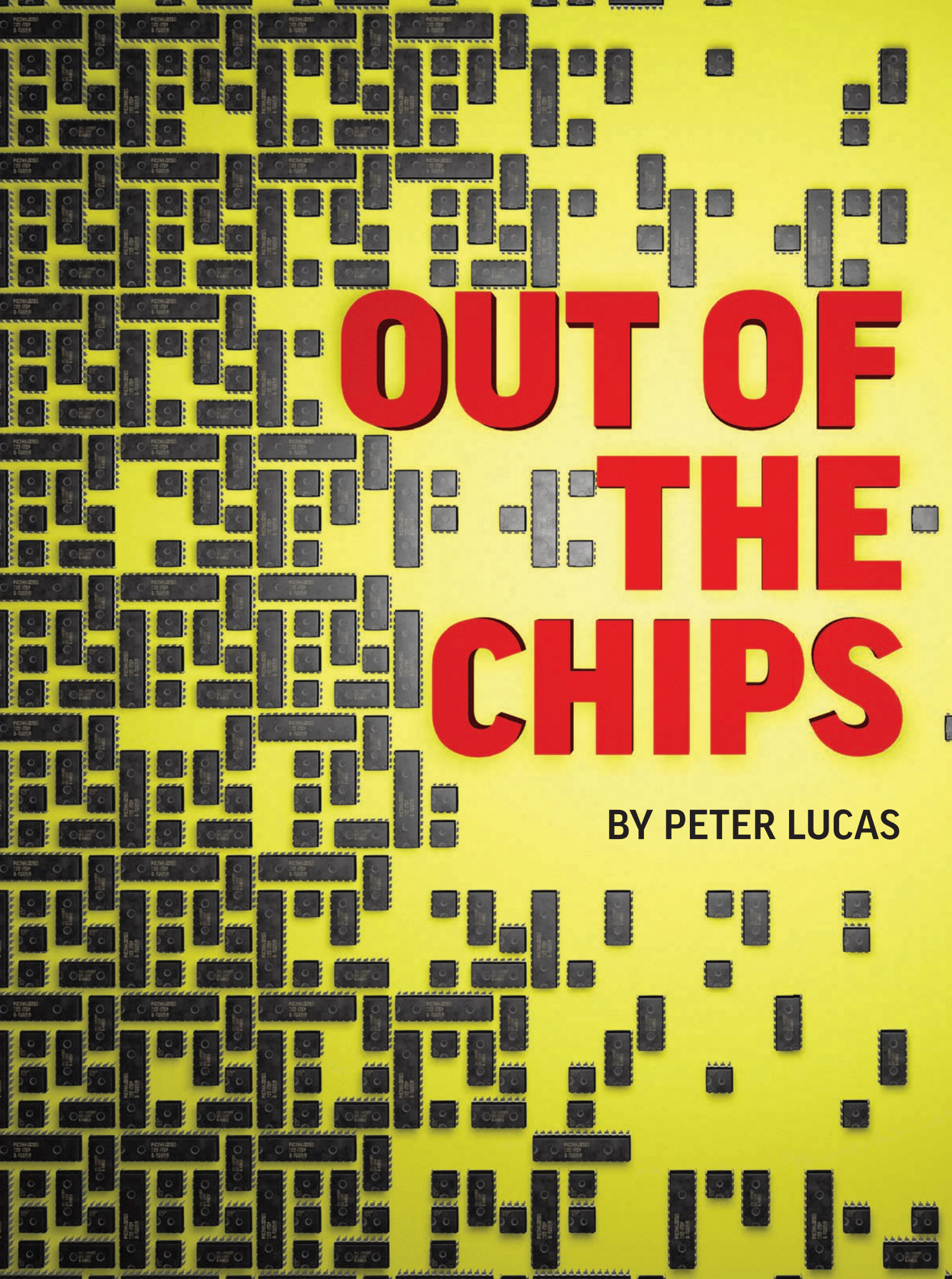
Digital Transactions News is packed with news and information from the \$123.4 billion transaction industry:

- ▶ Two original stories every issue
- ▶ Trending stories, so you know what our subscribers are reading
- ▶ Links to Digital Transactions magazine
- ▶ Calendar of events
- ▶ **PLUS!** "In Other News" The most complete listing of announcements from the payments community

Subscribe today at [Bolandhill.ameda.com/dtr/](http://Bolandhill.ameda.com/dtr/)  
or email publisher Bob Jenisch at [Bob@digitaltransactions.net](mailto:Bob@digitaltransactions.net)







# OUT OF THE CHIPS

BY PETER LUCAS



The background of the left sidebar is a vibrant yellow, decorated with several black microchips of various shapes and sizes scattered vertically. The text is in a bold, black, sans-serif font.

The microchip shortage has caught up with POS terminal makers. Now, with forecasts that production won't meet demand until mid-2022, those makers are for bracing for more pain.

**SINCE LATE 2019**, when the incipient Covid-19 pandemic first throttled back or temporarily shut down microchip production in China, manufacturers like mobile phone and auto makers, whose products rely on the tiny squares of silicon, have been feeling the pain. POS terminal makers are no exception.

In the nearly two years since the chip shortage began, it has spread to manufacturers across the world. Now, lead times for POS terminal orders remain on the rise as manufacturers scramble to raise production to meet demand.

During the past year in particular, lead times for orders have jumped dramatically. In some cases, terminal distributors are quoting 26 to 30 weeks for orders that, pre-Covid, took 12 weeks to fill, says Andrew Dark, executive chairman for Miura Systems, a United Kingdom-based provider of mobile-payment technology with offices in Timonium, Maryland.

The shortage, which is largely centered on the microcontrollers within POS terminals, has become so acute that some terminal makers have reportedly run out chips for specific models for a quarter of the year or longer.

Some makers are turning to the spot market—and, reportedly, even the gray market—to secure chips at a premium, which they either absorb

or pass along to their customers. Premiums paid to chip suppliers in these channels can reportedly run as high as 100% or more over retail prices.

### '18 MONTHS OF PAIN'

Not surprisingly, the shortage is starting to force some payments-technology providers to lose business. In July, new POS implementations were down by 10% as a result of the shortage, says Alfred “Chip” Kahn, chief executive and founder of Boomtown, a provider of consulting services for POS equipment installations.

With deployments down and no end to the shortage in sight, terminal makers are putting more resources behind their production forecasting to temper customer expectations. One reason is that customers may only be able to order 50% of what they need while the shortage continues.

In terminal makers' minds, it's better to tame expectations up front than

to tell clients at the 11th hour prior to delivery that only a portion of their order can be filled, payment experts say.

Making matters worse is that the chip shortage is not expected to show any easing until mid-2022, at the earliest. Some forecasters, indeed, warn it could last longer because of disruptions in the supply chain for the raw materials needed to produce microchips.

“As one terminal manufacturer told me, it’s been 18 months of pain,” says Sam Shawki, chief executive for MagicCube Inc., a provider of technology that enables smart phones to work as payment terminals. “We expect the situation to get worse before it gets better.”

## ‘NEEDLE IN MY SIDE’

How well terminal makers have managed the chip shortage so far depends on a variety of factors, including inventory levels before the shortage began and the demand for particular terminal models.

“Different manufacturers—and different models or product lines at a manufacturer—can have very different amounts of product availability,” says Derek Webster, chief executive and founder of New York payment applications provider CardFlight, Inc. “For some of the models we sell, including some of our most popular products, we have significant supply on hand and are able to fulfill orders without disruption. Other models have experienced stretched lead times.”

Tempering customer expectations with highly accurate production forecasts is the strategy terminal makers are pursuing. “The key to managing customer expectations is transparency,”



says Peter Stewart, executive vice president, North America, for Ingenico.

Accurate production forecasts start with having strong relationships with chip manufacturers to determine their actual monthly output. Even then, terminal makers can struggle to minimize the disruption to their business. “Even though we have good relations with all our manufacturing partners, we are still feeling the effects of the shortage, and at times have had to turn to other sources,” Stewart says.

While sourcing components from a new supplier as needed can help terminal makers keep up with demand, it is not always a practical solution as POS terminals have to meet processor and payment-network certification requirements. If a chip sourced through a new supplier does not meet those requirements, it can

take months to receive certification, which only slows production further.

When Ingenico turns to the spot market to secure components in a pinch, it deals only with suppliers that meet its quality and certification standards. “Any component we purchase has to meet our quality and technology requirements, even in good times,” says Stewart.

But backlogs in chip production aren’t the only problem feeding the overall shortage. Freight carriers have had their business disrupted by the pandemic, too, which in turn is slowing delivery not only of chips but of terminals, as well.

While sea and rail carriers, many of which were idled for weeks or months at the outset of the pandemic, are returning to normal operations, a lack of available space and cargo containers, as



well as increased shipping timeframes and costs, are feeding the shortage.

“The freight sector remains challenged by the pandemic and is still impacted by capacity constraints and higher costs,” says Stewart. “We continue to have open communication and collaboration with our freight carriers.”

Such constraints also extend to the delivery of the raw materials used to manufacture microchips. The problem began at the outset of the pandemic in late 2019, when China, a major manufacturer of microchips, imposed restrictions on in-country travel and freight movement. These rules significantly impacted the country’s chip production.

“At the outset of the pandemic in China, components and materials could not move within the country, which meant components couldn’t get to assembly points and raw materials to manufacturing plants,” says Miura Systems’ Dark. “While the chip shortage initially impacted the electronics industry, it quickly moved to other industries, such as the terminal market. The shortage has been a needle in my side for nearly a couple of years.”

### ‘COMPLEX AND DYNAMIC’

One problem starting to rear its head for payment-technology providers is how to service a new customer, especially one that comes over from a competitor, without hurting their existing core customers. “That is something we have to take into consideration,” says Rob Hayhow, vice president, North America for device provider Equinox Payment LLC.

Given how far-reaching the pandemic’s tentacles are when it comes to disrupting chip production and

availability, it’s no wonder payment industry executives refer to the shortage as a cascading problem. Not only are microcontrollers in short supply, there is a shortage of chips for terminal screens and even raw materials for other components, such as resins to produce plastic, which is used for various parts of a terminal in addition to the body.

“Whether it’s materials, shipping, or manufacturing, the supply chain is stressed,” says Hayhow. “You can shake every tree to find an alternative supplier, but you just can’t change a supplier without first ensuring quality standards.”

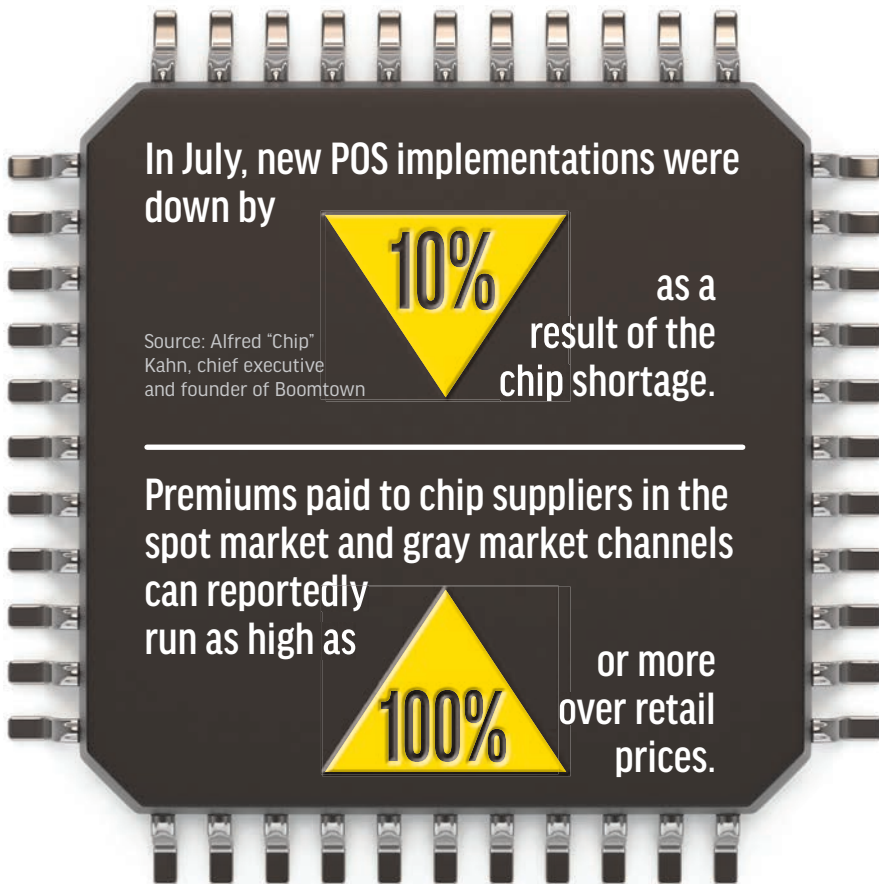
Indeed, it can take more than a year to certify a chip or component from a new, uncertified supplier, which, under the current market conditions, makes the component unsaleable, Dark says.

Switching suppliers for any terminal component can also lead to production delays that can subsequently cause delays on the freight side, because the manufacturer literally missed the boat when it came to meeting its freight carrier’s shipping schedule.

This can happen even though the manufacturer eventually got its hands on the components to produce the terminal, according to Hayhow. “The chip shortage is a complex and dynamic issue,” he says.

While the shortage has impacted production of other terminal components, such as cable and accessories, the good news is that the shortage of those items is less severe than that for chips, says Ingenico’s Stewart.

Another consequence of the shortage has been an increase in prices for



used terminals. “The used terminal market is thriving on marketplaces like Amazon, eBay, and other technology-focused marketplaces,” says John Jakobe, market intelligence manager for the Strawhecker Group, a payments consultancy.

Faced with high demand, many chip manufacturers have begun to ramp up production either by expanding capacity at existing plants or by bringing new plants online. But there is still a significant lag time before those efforts start to bear fruit.

“Even with more manufacturing capacity coming online, it takes months for new plants to be built and ramp up production, and existing plants to deal with the current backlog of orders,” says Dark, who adds he has not seen this kind of backlog in microchips since the 1990s

“Back then, it took ten months for new plants to come online,” he continues. “While we see a continual push in demand, we don’t see a corresponding expansion in production or availability.”

## A WILD AND BUMPY RIDE

Despite the bleak near-term outlook for chip production, the shortage has not had a crippling effect on the payments space, says Jakobe. Nevertheless, to weather the logistical issues and production delays the chip shortage is causing, there are several steps terminal makers, distributors, and especially payment-technology providers that sell terminals, can take.

The first step is preparation. “For many years, we have maintained extra inventory on hand and placed orders with our suppliers well in advance



to help ensure minimal disruption to our customers from any supply-chain challenge,” says CardFlight’s Webster. “Having supplies on hand has made it easier to work through any short-term disruptions.”

In addition, all parties in the terminal supply chain must get in the habit placing orders further in advance to accommodate longer lead times. “The ‘just-in-time’ purchasing model has significant challenges during times when supply is tight, like the present,” Webster says.

One strategy CardFlight has used to cope with the chip shortage is to modify its software to support additional terminal types and models. This can increase the range of options available if any terminal a merchant needs is out of stock but viable substitutes are in stock.

Looking ahead, payment experts expect many of the changes terminal makers, distributors, and buyers have made to cope with the chip shortage to stick once it eases. If anything, terminals makers will continue to put more resources behind obtaining accurate chip forecasts and encourage their customers to order using longer lead times.

“While there’s no question the chip shortage has put a strain on our whole organization, some of the changes we’ve made to cope will be kept,” says Hayhow. “Some of these changes have made us a more cohesive organization and also strengthened customer relationships.”

But until the shadow the chip shortage has cast over POS terminal production lifts, payment experts advise buckling up for a wild and bumpy ride for at least another nine months. DT



## WHY ONLINE SELLERS SHOULD STOP DIFFERENTIATING THEIR CHECKOUTS

Rather than simply performing housekeeping duties, the real payoff lies in adding functionality to the customer experience. Here's how.

BY **UDO RAUCH**

Udo Rauch is chief sales director, Emporix AG, Cham, Switzerland.

**ONLINE SHOPPING IS MORE COMPETITIVE THAN EVER**, yet many companies spend large portions of their budget just maintaining capabilities that do not give them any competitive advantage whatsoever.

Let's get specific. Do you consider your shopping-cart functionality a part of what differentiates you online? The answer should really be a resounding "No." That's because every online business has a shopping cart, and there's nothing inherently unique or advantageous about having one.

Of course, you might choose to interact with your customers differently on the checkout page, perhaps by displaying unique offers or promotions that are specific to a certain customer.

But what we're talking about here is a tailoring of the customer experience rather than an inherent benefit of simply having a checkout page. The basic cart functionality itself is really nothing special, and the same could be said for a number of other payment-related services.

This isn't necessarily bad practice. In fact, it's more common than you might realize. Many e-commerce companies use the same technology as their competitors so they can avoid having to build everything from the ground up.

An application programming interface (API) allows developers to easily access and combine a range of digital assets and services in different systems, even if those systems were developed entirely separately and were never meant to integrate. It's how one piece of software talks to another piece of software.

In a consumer-facing world, APIs are the bridge that allows data to flow from one app or service to another. It's an API, for example, that connects your bank account to a third-party digital wallet.

So if customers opt to pay for something via PayPal on an e-commerce





Rauch

# New-car manufacturers don't go about reinventing wheels. They instead add layers of value and functionality on top of those wheels.

store, they'll click on a "pay now with PayPal" button that's powered by an API. That ensures the end application can only do what it needs to, without being exposed to sensitive data.

## BUILDING FUNCTIONALITY

Just because two businesses share the same checkout technology, however, does not necessarily mean their solutions are carbon copies of one another or that their customers receive exactly the same experience.

In fact, it may surprise you to learn that, by using standard frameworks and capabilities—such as cloud-platform providers, containerization, and orchestration—an e-commerce business can enjoy benefits and efficiencies that allow it to focus more of its time, money, and effort in building functionality, rather than simply performing housekeeping.

So, while there's no need to reinvent the wheel, container-orchestration tools like Kubernetes can help you grab the wheel and steer your business toward success. Kubernetes is a container-orchestration tool originally designed by Google and now maintained by the Cloud Native Computing Foundation.

Here's how it works. In the 1940s, physical cargo containers revolutionized shipping. All of a sudden, deploying and transferring goods was quicker, safer, and more secure than it had ever been before. Digital containers work in much the same

way, making the deployment of applications used by your business fast, effective, and seamless.

These digital containers can be thought of as a kind of "digital packaging" that comes complete with everything a particular application or service needs to run. These digital packages can then be deployed wherever and whenever they're needed, reducing operating costs.

If we think of a group of standard services as an orchestra made up of many different instruments, Kubernetes would be the conductor that gets them all playing together in harmony. That allows a business to deploy a variety of services in a way that's efficient and tailored to the unique needs of its customers.

## MORE OPTIONS

It's never really been a question of whether a business does everything itself, but rather what technology stack it employs and whether it allows for sophisticated interoperability of standard components.

On their own, these standard functional components, such as a cart or checkout, don't look different from one business to the next. Effectively, they become a commodity that is simply delivered with the most reliable and lowest-cost method possible.

Having containerization as part of a technology stack, however, gives businesses far more options in terms of how it packages and deploys

functions. Containerization allows businesses to essentially mix and match third-party services like payments providers, allowing them to streamline and scale at will.

In theory, any business could write and manage its own technology to do this containerization. But in reality, why should it? There is no competitive advantage, and it would simply incur a large overhead as well as the burden of maintaining the containerization code itself.

Instead, most businesses opt simply to use one of the common toolsets available on the market to deliver this capability to their teams—such as Kubernetes—and let someone else worry about the maintenance.

In the same way, there is really no competitive advantage for a business to build and maintain its own version of a shopping cart. Instead, it can simply use one of the many payment services that are available on the market that, thanks to containerization, APIs, and Kubernetes, will be more or less plug-and-play compatible.

## LAYERS OF VALUE

If retailers were able to tap into all of this functionality as part of an all-encompassing e-commerce solution, the benefits would be huge, and would largely fall into two key areas:

1. It would enable a business to focus all of its available resources on building and driving genuine differentiating



qualities in the customer experience, rather than trying to take care of basic housekeeping functions like payment systems and checkouts;

2. It would reduce a company's costs by removing the need for it to maintain the large number of services necessary to carry out basic functions. That frees up resources to deliver actual benefits.

It's high time businesses started to view these basic components for what they are—the wheels on which e-commerce now operates. New-car manufacturers don't go about reinventing wheels. They instead add layers of value and functionality on top of those wheels, improving on the technology by adding to it and enhancing it.

This is precisely the approach that retailers need to take now. Instead of constantly reinventing basic services,



Much like physical cargo containers revolutionized shipping in the 1940s, digital containers make the deployment of applications used by your business fast, effective, and seamless.

use the foundations that have already been developed through years of trial and error, and build and adapt from there.

In other words, put your precious resources into the things that can truly differentiate your business in a crowded marketplace. **DT**

# Co-Branded E-Mail Marketing

## Get the Results You Need

### Here's how it works:

You select the part of *Digital Transactions'* subscribers you want to reach, sorted how you need it, by function, location, or title. Just ISOs? No problem. Just executives on the East Coast? No sweat. Just CEOs? No worries. Or choose our entire circulation base. **It's up to you!**

You give us your HTML creative.

We create both a text version and a Web version of the e-mail deployment.

After the deployment, we track deliveries, opens and clicks, and give you all the stats.

### It's really that easy!

To get started, contact Publisher Bob Jenisch today: 877-658-0418 bob@digitaltransactions.net



Trouble in the cards.

# endpoint

## THE EIGHT-DIGIT BIN PROBLEM

Next year, a new ISO standard will expand the size of BINs by two digits, creating a security issue. Here's an approach to a solution.

BY **ALEX PEZOLD**

Alex Pezold is the chief executive of TokenEx, Edmond, Okla.



**A CARD-IDENTIFICATION STANDARD SET BY** the International Standards Organization mandated that banks switch over from the current six-digit Bank Identification Number (BIN) to eight-digit BINs on all new credit and debit cards issued after April 2022.

It's straightforward enough for banks, credit unions, and other card-issuing institutions to shift to an eight-digit BIN. It's not quite so simple for merchants that want to continue to enjoy the business benefits of a BIN but still need to comply with the Payment Card Industry Data Security Standard (PCI DSS).

So I wanted to bring some clarity to what a BIN is, why it is important, how it relates to PCI DSS compliance, and why a shift to an eight-digit BIN is happening.

### A TOUGH CHOICE

A BIN refers to the first set of numbers that appears on payment cards. It is generally four to six digits and is used to identify the institution that issues the card, among other things. BINs are key to the process of matching transactions to the issuer of the payment card.

BIN ranges are crucial for the payment process because they not only allow merchants to accept multiple forms of payments quickly, but they

also help merchants assess their card transactions. This provides value because it allows for in-depth cost analysis to take place and enables merchants to perform real-time analytics with their BIN ranges to identify theft or fraud, as well as origination.

Merchants can determine other crucial information from the BIN range as well, such as their card mix, which can help clarify the cost impact of interchange fees based on the types of cards they accept.

The PCI DSS is an industry requirement for securing cardholder data around the world. A category of the PCI DSS requires organizations to protect cardholder data, which includes the primary account number (PAN). To maintain compliance with the PCI DSS, organizations are allowed to use only the first six digits of a PAN—which contain the BIN—as well as the last four digits.

Because expanding the BIN would exceed the maximum number of visible digits allowed under the PCI DSS, organizations starting next April will no longer be able to access the entire BIN while remaining PCI-compliant.

If BINs are necessary for the payment process and other critical business operations, how will the shift to eight-digit BINs affect merchants when the PCI DSS only allows the first six and last four digits of a PAN to be revealed?



# HELPING BUSINESSES INCREASE PROFITS WITH CASH DISCOUNT PROGRAMS

There's no doubt last year's pandemic crippled sales and brought hardship to many businesses, and unfortunately, many had to close their doors for good, while others had to impose additional surcharges to stay afloat. While credit cards are extremely convenient for businesses and customers alike, the convenience comes at a cost to the business. Business owners needed a way to increase profit without alienating customers.



By John Buchanan  
Vice President  
of Sales, Agile  
Financial Systems

To help, many businesses implemented a cash discount program to cash-paying customers as a way to increase profit. Giving a discount may sound like faulty logic, but it's completely possible with cash discount. And honestly, who doesn't love a discount?

## WHAT IS A CASH DISCOUNT PROGRAM?

Cash discount is exactly what it sounds like. It's offering a discount to customers who pay with cash or check instead of paying by credit card. With this method, businesses can avoid most of their credit card processing fees by incentivizing their customers to pay by cash. Cash discounting is a win-win for both the merchant and the customer, as long as the customer has cash on hand. If the customer chooses to pay by card, then they will not receive the discount. This ultimately affords businesses the ability to be more flexible in pricing their products and services, while maintaining a competitive advantage.

## CAN ANY BUSINESS OFFER CASH DISCOUNTING?

The short answer is, yes! Cash discount programs are legal in all 50 states, unlike surcharging which varies from state to state. There are a few guidelines regulated by the card industry that owners must adhere to in order to implement a compliant cash discount program.

## PROS & CONS OF CASH DISCOUNTING

There are both pros and cons for a business to move to a cash discount program. Obviously, the biggest positive factor is eliminating almost all of the credit card processing fees, which provides an immediate boost to the bottom line. Other positive factors include the flexibility when pricing products and services.

Negative factors include potentially rubbing some customers the wrong way, those that may not be accustomed to carrying cash. Additionally, some businesses may not be comfortable with their employees handling a larger volume of cash, this should also be taken into consideration when deciding if cash discounting is right for each business.

## ARE CASH DISCOUNT PROGRAMS THE WAVE OF THE FUTURE?

Although it's not for everyone, the idea is worth considering. By businesses offering customers a cash discount, even a minimal one, it can be advantageous for both the owner and customers. Businesses looking to build a strong customer base, can provide a little extra incentive for customers to pay with cash, and even stand out from the competition, it might be worth the time to consider a switch to offering cash discounts to customers.

The short answer is that it makes merchants choose between being compliant with the PCI DSS or having access to the full eight-digit BIN range for business operations. Due to the International Organization of Standards' (ISO) expansion of BIN ranges, merchants are placed in an uncomfortable position unless the PCI DSS decides to accommodate the first eight digits of the PAN.

So, why doesn't the PCI DSS just alter its requirements to allow for the exposure of eight-digit BINs? Because that would negatively affect the security of the cards. Although the BIN is gaining two extra digits, the length of the PAN itself is not changing. As a result, the masked portion of a PAN (the numbers between the first six and last four) would be losing two digits, making it much less secure.

## A POSSIBLE SOLUTION

So it's impossible for the PCI DSS to permit the use of an eight-digit BIN without compromising the additional protection those two extra digits provide.

But why the shift to eight-digit BINs in the first place? It's due to an insufficient number of BINs available with only a six-digit range. Simply put, the industry is running out of six-digit numbers with which to continue providing BINs. So, to ensure a sufficient supply of BINs for future product innovation, card brands are looking to evolve to an eight-digit format for all new BINs.

Visa and Mastercard have already begun the transition, and Visa is requiring newly issued BINs to be eight digits after April of 2022, though the use of current six-digit BINs will still be supported after this deadline.

A possible solution here—and one that includes additional revenue-enhancing benefits such as reduced fraud and increased conversion rates—is the use of network tokens. Network tokens are tokens created by the card brands that can be used throughout the token life cycle and eliminate the need to expose the PAN.

Network tokens are especially useful because they contain additional details about the card (such as the issuer and

card color) that can be accessed without requiring the BIN to be revealed.

However, network tokens can only be used with participating issuers and processors. So in the instance that merchants are trying to process a payment for or with an entity that doesn't accept network tokens, eight-digit BINs could still present an issue.

Regardless of how merchants choose to handle this shift, they need companies to support them with whatever solution they deem to be the most beneficial to their organization. I recommend partnering with a vendor that offers a solution built for maximum flexibility.

It is true that, today, these types of providers won't be able to completely resolve the conflict between the PCI DSS and ISO. But they can help organizations that want to maintain control over how they navigate the evolving landscape of security and compliance. DT

*John Noltensmeyer, chief technology officer at TokenEx, contributed to this article.*

## ADVERTISER INDEX

<b>Digital Transactions</b> ..... Pages 5, 17, 19, 21, 29 877-658-0418 ..... <a href="http://www.digitaltransactions.net">www.digitaltransactions.net</a>	<b>Humboldt Merchant Services</b> ..... Back Cover 855-767-0685 ..... <a href="http://www.hbms.com">www.hbms.com</a>
<b>Electronic Merchant Systems</b> ..... Inside Back Cover 866-596-8829 ..... <a href="http://www.emsagent.com">www.emsagent.com</a>	<b>MagTek</b> ..... Page 3 562-546-6400 ..... <a href="http://www.magtek.com">www.magtek.com</a>
<b>eProcessing Network</b> ..... Page 7 800-296-4810 ..... <a href="http://www.eprocessingnetwork.com">www.eprocessingnetwork.com</a>	<b>PaymentCloud</b> ..... Page 9 877-401-4040 ..... <a href="http://www.paymentcloudinc.com">www.paymentcloudinc.com</a>
<b>AFS Agile Financial Systems</b> ..... Page 31 888-708-8019 ..... <a href="http://www.go-afs.com">www.go-afs.com</a>	<b>General Credit Forms</b> ..... Inside Front Cover 888-GCF-NEWS ..... <a href="http://www.gcfinc.com">www.gcfinc.com</a>
<b>Harbortouch, a Shift4 Company</b> ..... Page 1 800-201-0461 ..... <a href="http://www.isoprogram.com">www.isoprogram.com</a>	



# DOES YOUR PROCESSOR WORK AS HARD FOR YOUR MERCHANTS AS YOU DO?

*Work more efficiently by becoming an  
EMS Agent.*

## **No Good Merchant Left Behind**

EMS has the most sponsor banks in the industry. Through these relationships, we'll get more of your merchants approved. Period.

## **Solutions Designed to Sell to All Merchants**

With tablet-based solutions to more robust server-based solutions, EMS is equipped to serve any merchant from a food truck to fine dining room.

We provide comprehensive solutions for all your CNP and eCommerce merchants.

EMS even offers a pay-as-you-go model for micro-merchants.

## **Solutions for our Agent Community**

Multiple Pricing Options

Tablet to Server-Based POS Solutions

Transparent Reporting to Better Manage Your Portfolio

Latest Cutoff Times in the Industry

Marketing Assistance to Help You Build Your Brand





**emsagent.com | 866.596.8829**



# Our commitment to your success is a reflection of who we are.



At Humboldt Merchant Services, we are committed to helping our partners and their merchants succeed. After all, we know that your success is our success. That's why we help you grow your portfolio with industry-best payment solutions for retail, ecommerce, and specialty merchants. All while giving you anytime access to our secure, online Sales Partner Portal so you can keep tabs on your merchants' activity and your profitability.

 <b>Specialized chargeback reporting.</b>	 <b>A full suite of anti-fraud services.</b>
 <b>Multi-currency conversion.</b>	 <b>A boutique client experience.</b>

**We offer solutions to merchants in a wide range of industries.**

 Adult Content	 Bail Bond Issuers	 Business Opportunity	 Buying Clubs	 CNP Tobacco
 Dating	 Direct Marketing	 E-Cigarettes	 Firearms & Ammunition	 And many more

## Since 1992

**Join the 29-year industry leader.  
Become a Humboldt Sales Partner.**

**HBMS.COM**