

# DAY 1

## EMV IN THE US: CURRENT STATE AND WHAT'S NEXT

— A PYMNTS.COM REPORT



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## DAVID THOMAS WORTHINGTON

PRINCIPAL CONSULTANT, PAYMENTS & CHIP TECHNOLOGY, BELL ID

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

DW: For the U.S. ecosystem I would go for “Satisfactory.” The reasons for that, if you compare the U.S., the last major economy to migrate to EMV, to other markets that migrated previously, at the time of EMV Liability Shift then the U.S. has similar numbers in terms of EMV activity. That's issuers that are EMV capable, the proportion of EMV credit cards already deployed in the market, and acceptance in terms of larger merchants and acquirer processors that support EMV. Talking to larger U.S. merchants, you'll find already for many that over 60 percent of their credit card transactions are EMV. U.S. EMV debit is another issue.

Even so, it might have been “Performance Improvement Needed” if there hadn't been some very large scale data breaches in the U.S. last year to focus all of the industry on the underlying need to get EMV in place before the pain – reputational and financial – worsened. Add in other high-visibility initiatives that also run on the same EMV infrastructure, such as Apple Pay, and the last 18 months have seen significant efforts by all of the U.S. payments industry.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

DW: From an industry perspective, the elephant in room has from Day 1 been U.S. EMV debit and the impacts of The Durbin Amendment. Other countries, such as Canada, Saudi Arabia, etc., have also had parallel implementations of national EMV debit with regional EMV Liability Shift dates, but these were comparatively easy. Meanwhile, the U.S. spaghetti of multiple debit networks and impacts of the legal requirements of The Durbin Amendment has taken the industry a couple of years to come to a workable solution, and only then through the facilitation of the U.S. EMV Migration Forum.

From a specifically Bell ID perspective, for the U.S. market, adding on top of EMV migration, Apple Pay and cloud-based mobile payments, as well as tokenization, that really played to Bell ID's unique strengths and complete solution set. Enabling Bell ID to successfully engage with multiple new customers, and expand on existing customer relationships in the U.S.

### **What made the migration in the U.S. different from your experiences in managing this process in other countries?**

DW: The Durbin Amendment for debit cards and the lack of any national body responsible for specifying what that meant in terms of EMV in the U.S. and exactly how debit EMV would be processed and switched. Fortunately, the U.S. EMV Migration Forum was formed as a cross-industry body to discuss issues, and despite any explicit responsibility or authority, with the effort of its members, it was able to facilitate a way forward.

Apple Pay being launched last year in the U.S., that's definitely had an impact, and has made many rethink the need to quickly support contactless EMV. Strangely, despite contactless EMV's success in neighboring Canada, and many other markets such as Australia and in Europe, it was initially left out of their EMV Phase 1 scope by many U.S. issuers and merchants, possibly another casualty of U.S. debit issues. Now, most players are seriously including EMV contactless as part of a wider strategy around NFC mobile payments, transit, and speed of transaction for lower value payments.

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### **What has EMV's impact on innovation been – and why?**

DW: In a broader context, the underlying EMV infrastructure for secure payments already forms the basis for several innovations: contactless (EMV) cards, mobile NFC payments based on both the secure element model for Apple Pay and Samsung Pay, and cloud-based payments for Android mobile NFC phones — and also in using the EMV cryptogram in securing payment and authentication in eCommerce.

The innovation has leveraged on reuse of the security mechanisms and flexibility of EMV to not only secure payments, but to also enrich the experience in terms of faster transactions via contactless, whether by card or NFC phone, also allowing acceptance in the transit market, and a wider payment experience in terms of wallets on phones and potentially positioning other offers with payment, e.g. discounts, vouchers, etc.

EMV's flexibility also supports the adoption of real cardholder verification mechanisms, moving away from the completely ineffective signature, to PIN, and now biometric support.

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### **If today is Day 1, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

DW: Whilst some issuers may have already migrated up to 80 percent of their credit cards to EMV, the next year will see them complete EMV credit card migration, and make significant progress on their EMV debit issuance. Meanwhile, some of the second wave of EMV issuing banks, who have only started EMV issuance this year, will ramp up their migration; for some this may potentially include forced rather than natural (on expiry) card replacement. So from today's 20-30 percent of U.S. issued payment cards being EMV, to over 70 percent in a year's time.

On the acceptance side, whilst many of the larger U.S. merchants are currently finishing their point of sale terminal migrations to support EMV, there are still many small- and medium-sized merchants either in, or still considering starting the process. So from today's roughly 400,000 U.S. merchant locations accepting EMV growing to double that in one year.

Additionally, the number of merchant locations that also support contactless EMV will significantly increase over the next 12 months.

There are always those who will lag behind in any migration, and for the Fleet & Fuel industry, they have later 2017 EMV Liability Shift dates, so the U.S. EMV migration will not be totally complete within another 12 months. However, as magnetic stripe counterfeit fraud starts to concentrate on those that haven't migrated yet, the speed of migration is likely to keep increasing in the next year.

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### **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

DW: In part it's already done; the mobilization of EMV credentials to support Apple Pay, Samsung Pay, all the cloud-based payments for Android phones including Android Pay is an initial stage. EMV as a standard has moved on into the eCommerce and m-commerce world so you'll have EMV cryptograms providing the security and uniqueness of a payment for an Internet merchant. That's already gone into the specifications, but as with many things in legacy networks, it's more a case of the time lag of implementing and certifying the relevant elements of the infrastructure before the cardholder, and merchants can then enjoy the new services.

Going beyond that, there's the potential reuse of EMV credentials in the digital world. Not just for payments, but also more generically for remote authentication. Again, that's already there in terms of specifications using EMV mechanisms for authentication in Internet banking, etc. However, the underlying capabilities of EMV and its distributed security approach can and does already support much wider applications in terms of digital credentials and digital authentication.

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### **What is the most underappreciated aspect of EMV and why?**

DW: Probably what has taken a lot of reinforcement, particularly in the U.S. market, is every time you get a new announcement like Apple Pay, Android Pay, tokenization, etc., there's almost always been a reaction of, "Oh, well, why don't we do this new thing instead of EMV?" Whereas for almost all of these innovations and enhancements, the actual starting requirement is that it all runs on EMV infrastructure.

So whilst there may be a new flavor of customer experience or service, the transaction security, the issuer management of it, etc., is all related to being an EMV payment over an EMV capable network.

### **What innovations do you think could now be unleashed as a result of EMV being a global standard?**

DW: For most of the world, they're already progressing, with rollouts at national and regional levels of contactless and mobile NFC EMV-based payments. Given initial launches of Apple Pay, Android Pay, and Samsung Pay (after Korea) in the U.S., even with the current limited level of U.S. EMV contactless acceptance, there's a clear message that many people are investing heavily on the assumption of those innovations being a success in the U.S.

What's exciting with the U.S. having finally made the move to EMV is the potential to be able to fund innovation in the knowledge that you can globally implement it including the U.S. market. That your return on innovation investment is likely to be higher and more quickly received, again because the whole global market is looking at what's the next function of EMV, what are the upgrades I can do on top of my underlying EMV infrastructure, EMV issuance capabilities, and EMV acceptance.

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### **Does the EMV standard have any role to play outside of payments?**

DW: Yes, it's already used in a number of instances for authentication in the form of digital signatures not just in payments-related activities, such as Internet banking, mobile banking, etc. The same EMV-based authentication credential has also been used in other ID schemes that work on a distributed card-based or application-based (on mobile device) infrastructure. So basically anything that takes some form of an ID or license needs to be remotely distributed to individuals and then can be validated remotely with a terminal. There are already some mass deployments in authentication and non-payment related ID schemes.

There is a lot of potential for reuse there. Given the ubiquity of the payments and finance market, using it in other industries and other markets seems to make a lot of sense. That said, there will always be some proprietary or market specific equivalent authentication, digital signature technologies that EMV may have to compete with.



## CAROL ALEXANDER

SR. DIRECTOR, AUTHENTICATION & PAYMENT SECURITY, CA TECHNOLOGIES

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

CA: I would rate it “Performance Improvement Needed,” although I do think the card issuers have made great progress. As an example, I was just at the TSYS Fraud Forum and most of the issuers in the room had issued chip cards. But in general we as a payment community haven't done enough education for consumers and merchants to help them understand how the cards are to be used and what the benefits of the new cards are. When I looked around the room at that Fraud Forum, I got the sense that the issuers/processors were far along and all felt that they would be ready to go. But from the perspective of a consumer, there are very few merchants actually using the EMV POS terminals and I live in the San Francisco Bay area, which is a high-volume market. Even at my local Target, which was one of the biggest breaches that sparked the migration to EMV in the U.S., the POS terminals are ready to go but, a majority of the time, the clerks don't even know what they are. I always try to use them but most merchants insist I continue to swipe my card. I think there's still quite a bit of work to be done in the area of consumer education, and even education for the merchant checkout clerks, hence my “Performance Improvement Needed” grade.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

CA: As we stated initially, since CA Technologies provides services and software that help issuers prevent card-not-present fraud, we aren't directly involved in the EMV migration from the standpoint of issuing new cards. I'm not in a position to comment on how complicated it was for an issuer, though I'm sure there were what must have seemed like an infinite amount of pieces to complete the puzzle. Most of the issuers that we work with started with a select set of users or card portfolios — for instance, those that are frequent travelers outside the U.S. or complete high-value transactions. We get involved to help issuers plan for the inevitable rise in Card Not Present fraud when the cloned card fraud is largely shut down. In other countries there has been a rise in CNP fraud when the country converted to chip and PIN. At this same conference I attended [TSYS Fraud Forum], fraud managers were already worried about the jump in fraud for card-not-present transactions that is soon to come. That's where CA Technologies really comes in – now that you've gotten your EMV conversion underway, what you really need to be thinking about is implementing a card-not-present fraud strategy and solution so that when the shift happens, you're not all of a sudden completely vulnerable to online shopping fraud.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

CA: Originally, prior to the EMV shift, issuers in other countries didn't have the luxury of knowing what would happen to fraud. Once the EMV conversion was complete, fraud shifted to online shopping transactions. I think the difference here is that because of the experience other issuers had in the rest of the world, the U.S. issuers will be more prepared and have the opportunity to head it off at the pass.

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**What has EMV's impact on innovation been – and why?**

CA: We're always looking for better solutions to stay ahead of fraud. EMV was one such innovation. As a security measure, it works! However, I worry that we are not taking full advantage of the technology here in the U.S. Instead of Chip & PIN, we are implementing Chip & Signature. I believe MasterCard is doing Chip and PIN, but Visa is not requiring. So in other words, in the U.S., we are limiting the security that is available with chip-enabled cards.

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**If today is Day 1, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

CA: I think that what we're going to see over the year, as people get more familiar with using chip-enabled cards and as they receive more education about the security, is that demand from consumers will be strong for the technology. I would say that certainly the major retailers will be converted and certainly most of us will have chip cards in our wallets.

The question is, will I be able to go to Europe and use the same card to buy my ticket at a train station from a point-of-sale terminal or will I have to do something different still? I realize that this only affects a smaller number of consumers, but I think that those consumers will start demanding more similarities rather than differences in the use of the card. I do really believe that after a year we are going to see 80-90 percent adoption. However, I think the small mom-and-pop shops and some people like my mom, who is 90, won't know the difference between a chip card and a mag stripe card, ever.

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**In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

CA: From my perspective, I think that more security will come to digital transactions. It's all about using the same type of security for all methods of payment. For example, if you're using Apple Pay, Samsung Pay, etc., consumers will want to be able to pay with their phones, just like they do with their cards. That will be a key driver for mobile payments taking off.



### **Issuers are your primary customers – what are you hearing from them with respect to the liability shift?**

CA: Well interestingly enough mostly what I'm hearing from them now, like I said when I attended the TSYS Fraud Forum a few weeks ago, is that they are highly concerned about online shopping fraud and card-not-present fraud. I think they were very interested in learning more about 3D Secure. Most of them still had the impression that 3D Secure offered only a bad customer experience.

They were very interested to learn that you could use, for instance risk analytics or some other risk-based authentication, to make the cardholder shopping experience much more smooth and frictionless. I don't believe they are as informed or as educated about today's 3D Secure. I think there is going to be a push starting now where we are educating issuers and merchants about how you can use a 3D Secure solution that is frictionless as far as the user experience is concerned.

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### **How will EMV impact your business, overall?**

CA: EMV will create demand for a CNP fraud reduction solution, like what we provide. Issuers and merchants will need to focus on identifying whether or not a transaction or cardholder is legitimate without creating transaction abandonment. We really believe we will see demand for our risk analytics solution for 3D Secure.

Our CA Risk Analytics solution helps reduce both fraud and transaction abandonment. It's a well-tested solution, it's something that people can implement fairly quickly and of course we can help them do that. We see that as having a good impact on our business and hopefully holding down the fraud overall if people adopt it soon enough.

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### **Is there a role for the EMV standard to play in battling fraud online – which is where it is headed next?**

I think what we will see next is the demand from issuers, merchants and cardholders to find ways of securing the entire transaction, even past the point-of-sale "swipe." EMV has a very specific goal: to stop counterfeit card-present fraud. However, there are other forms of fraud that can happen separately, for instance card-not-present fraud and theft of cardholder data, etc.

I foresee both issuers and larger merchants working together to find ways of protecting all aspects of a transaction, rather than trying to combat fraud through piecemeal solutions. Issuers have a unique opportunity — they need to look ahead and be the thought leaders to educate both cardholders and merchants that fraud will undoubtedly migrate online and the appropriate measures need to be taken. And CA is there to help along the way.



## JEREMY GUMBLEY

CHIEF TECHNOLOGY OFFICER, CREDITCALL

**How would you grade our performance as a payments ecosystem here in the U.S.? Outstanding, Satisfactory, Needs Improvement, or Failing?**

JG: It "Needs Improvement."

**That's generous, but — to state the obvious — from your perspective, why do you assess that ranking?**

JG: Right now, there are certain parts of the ecosystem that are very slow, such as the bottleneck in securing U.S. EMV processor certifications. This is a resource-intensive process and it can be quite complicated. For instance, a typical ISV interested in certifying a few PIN pads with a few processors faces up to 22 months of work and some considerable financial expenses. Additionally, certifications need to be revisited every couple years.

My opinion — and it's a controversial one — is that we've known about the pending EMV liability shift for quite some time. It's not as if we've only had a month to prepare. The industry — in particular, processors — have had quite some time to figure this out. And yet, we are still experiencing some bottlenecks in the EMV migration process. I think it's going to be a while before all clears up again. I would say the certification life cycle most definitely needs improvement. Insofar as other parts of the ecosystem go, card issuers are doing a really good job. In fact, I personally have five U.S. EMV cards from various issuers. I also think the terminal manufacturers are doing a great job of putting EMV-ready technology out there. But if there's one blot on the report card, it's the current certification time scales.

**Is that the big dependency that is keeping more progress from being made? Is that the one critical path issue that has really kept everything else from working properly, in your view?**

JG: In the verticals that we are heavily involved in, yes. I believe the certification side of things is potentially holding back the industry and our progress. It's a tough problem to solve. EMV testing is a lot more difficult and elaborate than any kind of testing we've had before — and for good reason: EMV is complex. However, with the U.K. being the first market to go over in 2005, we can draw on 10 years of EMV experience in at least one other country. In fact, the way that we solved the certification timescale issue — and, as Creditcall has solved that issue throughout the world — was through pre-certified solutions, rather than certifying something new each and every time.

**There are a lot of people who think that EMV has been a bit of a distraction — perhaps not as a standard, but as a deployable form factor, putting a lot of energy into cards and chips — and that the distraction has reprioritized other innovations that could also protect data, but do it in a way that's more conducive to mobile. Do you share a view that EMV's impact on innovation has been a negative one?**

JG: I don't agree with that. I think that in terms of the mobile form factor — and whatever happens with NFC in the future, we're already seeing some of the successes of Apple Pay and Android Pay and Samsung Pay — there will always be two streams of people using cards and people using mobile payments. We're going to have the early adopters, the real technophiles who adopt things like Apple Pay and NFC very quickly, and they will continue to use those form factors.

Then there's a whole other section of society that has no concept of what mobile phones can do in terms of payments, and perhaps have very little interest. The bulk of U.S. consumers are still using a plastic payment card and we don't expect them to disappear, but exist alongside mobile payments. We need to be able to accommodate both streams: The technophiles and the people that are happy with the existing user experience of a plastic card, whether that be contact or contactless.

As for the notion of EMV stifling innovation, I think EMV has actually helped a lot of these newer technologies. It's doubtful whether there would be a mass re-terminalization in the United States if it were just down to contactless and NFC. I think a number of influencing factors have come along at the same time; one of them is EMV.

As soon as a device is enabled for EMV, that opens the door to not only EMV and its associated benefits, but also the benefits of contactless and NFC. A merchant that is re-terminalizing is more likely to buy a newer terminal that can support those features; I think there is a benefit for that ecosystem as well.

Something that's been a consistent problem in the U.S. is that of cardholder data in transit. That's a problem EMV can address, as most PIN pads that enable EMV support point-to-point encryption. That's another key example that goes against the idea that EMV is stifling innovation. On the contrary, I think EMV has created a platform for further innovation by including features that make re-terminalization more appealing than the process would be if brought about with a single feature.

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**I hear you. It kind of relates to the question, which is: Yes, plastic is a very important part of payments today, and it will be into the future, but the focus for the future is really digital.**

**While EMV is currently an offline solution, what is its next act in a digital world?**

JG: The people at EMVCo are currently in the process of creating next-generation EMV, which is going to include a lot of new features and functionality. I don't think it's any secret that, perhaps even in 10 years' time, the form factor for all of these things will be very different from what they are today.

Let's also face the fact that the card issuers are not married to plastic card technology. Some would argue it's a hindrance because of all the problems related to cards not arriving and the need for re-issuance, and having to send out tens of millions — if not hundreds of millions — of plastic cards though the mail. An instant-issuance system into a digital form factor such as a mobile phone is infinitely more attractive to them in terms of operational cost savings.

I think that EMV, in its next generation, will embrace more of the online world than it will the offline world. We can start to see the very beginnings of that now, with Apple Pay working with certain apps. Being able to pay with alternative mechanisms digitally via mobile, rather than presenting a physical card, is definitely a next step in the ecosystem.

**We talked about the certification process; that's a hairball. What about the long tail of the merchant? That's really the challenge.**

**The big guys will do what they need to do, because they all tend to follow the same course. But will smaller businesses — the dry cleaner, the convenience store, the local butcher — simply leapfrog to mobile, seeing it as something that they need to do? Or will they invest their scarce resources into something else?**

JG: The outlook for smaller merchants — mom-and-pop stores, dry cleaners, and the like — is more positive. As a merchant, you want to be able to accept as many different kinds of payments as you possibly can, so being able to accept NFC and Apple Pay will be very attractive.

In the case of smaller merchants, where the payment ecosystem is relatively simple — it's not integrated as a mainframe at some offsite location — there is a lot more flexibility and value that can be added through upgrades around EMV and point-to-point encryption. This offers better data protection, but also peace of mind about transaction security.

Typically in the markets that have already migrated to EMV, there is great adoption among smaller merchants, because it's a much simpler proposition for them. Either a terminal is swapped out and they get a new terminal that's enabled for EMV and Apple Pay, or their POS vendor is taking them to a completely new form factor. It's no secret that companies like Poynt, for example, are looking at disrupting that whole space by providing a complete payment terminal that has an application ecosystem built in. That kind of thing gives small merchants a lot of options, especially if they can download functionality onto their platform that allows the terminal to do new and additional things.

I'm more positive about smaller merchants, because they can be technologically provisioned in a much easier way than larger ones can, with solutions that are commonly available. I don't think they'll leapfrog to mobile, because small merchants want to be able to accept any method of payment that a customer wants to use. They're depending on that flexibility of potential revenue intake perhaps more than some of the larger players are.

**Interesting. I hadn't thought about that before, that the terminals that are available to these smaller merchants — whether it's new readers from PayAnywhere, or Square, or what Poynt is doing — do provide multiple functions all wrapped together, and in an affordable way.**

JG: Absolutely. And it's often revolutionary, as well. The kind of functionality that you can build into tablets far exceeds the functionality you could ever have in a traditional POS environment. It's good for both the consumer and the merchant.

**Debit has been yet another hairball. What's your perspective on that?**

JG: The debit infrastructure in the United States is a hugely complex one. There's a lot of interest and a lot of regulation that surrounds the technology stack; it's a problem that has held up the adoption of EMV in the United States.

However, a majority of those issues are now resolved. There have been various releases from the Debit Network Alliance regarding its path to EMV migration — and in fact, there are debit EMV cards being issued right now. Now that the technological hurdles are out of the way, increasing the production of those cards is less dramatic than it used to be.

It also ties back into certification, because there are some specific test requirements around debit and how it should be handled in the U.S. This adds another layer of complexity into the EMV certification process.

Overall, we're in a pretty good place right now in terms of issuing cards, while there remain a few things to figure out in the realm of debit certification. But there's a huge amount of the industry that is presently focused on solving that issue — and to a large extent, it *is* solved.

**EMV is a mechanism for providing security at the physical point of sale, while everywhere in the world, fraud is moving online, which suggests that we're not as good at protecting against online fraud. However, the data show that the percentage of fraud in online sales has remained pretty constant over the last five or six years. Why is it, then, that online fraud is going to get worse?**

JG: I think the 10-million-dollar question is precisely *how much* fraud will increase. There are various parties in the industry saying it will increase a hundredfold, while others say it won't increase at all.

Compared to other countries that have migrated to EMV, I believe the United States is in a slightly different place. Because the U.S. has been a pure mag stripe market, there has been a lot more investment in real-time fraud profiling made by both the issuers and the processors. While online fraud *will* go up in the U.S., I'm not sure it's going to be a dramatic percentage. I'm comfortable with the fact that a lot of these real-time fraud profiling systems will actually work — because, historically they have — to counteract some of the impact made by moving to EMV.

**Where will we be on Day 366 of the EMV liability shift, one year from today? Any projections on the number of terminals that will have been deployed or cards that will have been issued?**

**We're seeing pretty low figures right now; everyone has their own numbers, but we're reading things like fewer than 300,000 terminals.**

JG: In terms of how many terminals that have gone out the door, consider the numbers and research coming from companies like Ingenico and Verifone. However, even then, that wouldn't necessarily mean all the terminals in those counts are plugged in and operating. They could be sitting in a warehouse someplace.

Personally, I go by metrics that I can observe myself. I can tell you that I've seen more people using EMV-enabled cards at EMV-enabled terminals than I've ever seen using Apple Pay, so quite a good amount of penetration.

I can't really comment on what the statistics look like right now. However, if there's one thing that I do know about the U.S., is that EMV is a problem that is being solved, and there will be a considerable amount of effort that goes to remedying the situation of terminalization.

A positive sign is the fact that the card issuers are sending out cards. To me, that has always been the key metric: Are these chips cards getting into the hands of consumers? Of all my friends and colleagues, there's not a single one who doesn't have a chip card. So that's a good litmus test.

The issue now is going to be terminalization. As I attend industry events that include merchants as well as issuers and processors, I'm seeing a significant effort by them to re-terminalize.

At this time next year, it's fair to say we are going to be in a considerably better place than we are now. Without projecting the actual number of terminals in place, I would bet in the range of 25-40 percent for penetration. I'd say that EMV transactions will be quite commonplace for most customers, due to their spend at tier one merchants like Walmart, CVS, Target and the like — and increasing awareness of EMV from big players educating consumers on what it is and its value to better protect their payment data.



## RAY WIZBOWSKI

VICE PRESIDENT, FINANCIAL VERTICAL, ENTRUST DATACARD

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

RW: “Performance Improvement Needed.” While the ecosystem has valiantly attempted to make the October deadline, the truth is, the payments ecosystem at all levels is not ready for the full implementation of EMV. I still believe one of the biggest challenges inhibiting migration is consumer education and the general lack of understanding from both the consumer and the merchant. Not to mention the inconsistent experience of being able to use a chip card at one merchant, but not another because the POS terminal has not been upgraded to accept chip cards. We are getting there, but it will take some time before all cards have chips, all merchant POS systems are upgraded and all transaction service providers have enabled EMV payment acceptance.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

RW: As a supplier of EMV data prep software and personalization systems to issuing banks, Entrust Datacard faced the same challenge as the issuing bank: being able to get base plastics from card suppliers to complete the testing and approvals required by the payment networks. Many smaller banks have wanted to move faster than their card supplier. Core banking systems and card management systems also have contributed to this delay as they have had to invest a significant amount of time, energy and resources to enable their systems to handle the heavier data load that comes with EMV transactions.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

RW: One of the biggest challenges for issuers in the U.S. has been the sheer volume of accounts that need to be converted to EMV. Many large issuers segmented their cardholders and started EMV reissues on certain portfolios and left others for later in the cycle. Other countries that have migrated to EMV had smaller populations and the average number of cards per person was typically less. For example, Western European countries, which favor debit over credit, are only issuing two to three cards per person as opposed to the five to seven cards which live in a U.S. consumer's wallet.

### **What has EMV's impact on innovation been – and why?**

RW: I think the question needs to be reversed and should be asked: What innovative ways will a chip-based payment device be able to be used once fully deployed? Today, much of the attention has been on ecosystem catch-up to EMV, which the rest of the world has already embraced.

As we have seen in other countries, the next big challenge will be in how to take the security of card present transaction enabled by EMV and extend it to the world of eCommerce card-not-present transactions. With a chip-based product, there is a lot of room for innovation with tokenized payments and other forms of encryption to further enable the digital economy.

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### **If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?**

RW: One year from now, I believe we will see a large majority of the cards converted to EMV. Most issuers I speak to anticipate that they will be fully compliant within that time frame – spanning tier one banks through community banks and credit unions. The terminals are a different story.

I think the biggest struggle will be the small- to medium-sized merchants, which may push them away from traditional terminal providers to some of the more innovative payment solution providers.

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### **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

RW: I believe EMV's next act is helping secure card-not-present transactions. With EMV, the cardholder has a digital identifier which can be combined with other tokenization or encryption technologies to produce a more secure online experience.

But as we have seen with the migration to chip-based cards, there are a lot of dependencies — and in the digital world there are less industry agreed-upon standards. This leaves room for innovation, but also creates a challenge for broad-based adoption.





## ROBERT LEGTERS

### CHIEF PRODUCT OFFICER, FIS NORTH AMERICAN RETAIL PAYMENTS

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

RL: At FIS, we set the bar high. As an overall ecosystem, I would say that the U.S. is doing a “Satisfactory” job. The education of both the retailers and financial institutions has been very strong, and with the partnership of the payments ecosystem players and organizations such as the EMV Migration Forum and Smart Card Alliance information is readily available for financial institutions, retailers, and the consumer. At FIS, we placed a strong focus on EMV migration early in order to provide the resources, client support, and streamlined implementation processes that needed to be in place for our financial institution clients and retail clients to easily begin the process. Our proactive approach and readiness is an exemplary response to the mandates and the shift in the market. By our standards, exemplary would be to have everyone already 100 percent converted. As far as FIS and its clients, we believe we are ahead of the “Satisfactory” curve, but in regards to the industry overall, it is moving at a “Satisfactory” pace.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

RL: FIS has many roles in the ecosystem; it wasn't more complicated from the perspective of what we needed to do for either a financial institution or a retailer. EMV has many variables and options available and because of its late debut in the U.S. market, it created a challenge in presenting all of the options and variables in implementing EMV, but alleviated with the standardization and date protocols developed by the large payments brands. With the development of the standardization and protocols came the consistency needed to easily explain the process to clients.

**What made the migration in the U.S. different from your experiences in other countries?**

RL: The U.S. market tends to have issuers and retailers that want a greater degree of customization with a unique offering and/or experience, which makes it slightly different, but not measurably different from the implementation process in other countries. As noted in a recent Mercator report, the U.S. has an established online payments system, therefore not making offline EMV necessary, which was not the case for Europe in the 90s.

### **What has EMV's impact on innovation been – and why?**

RL: EMV has been a necessary distraction for all of our clients, but the capital investment that may have been otherwise been put towards additional innovation in the market, has been placed towards card reissuance, the cost for EMV implementation setup, as well as the new ecosystem that they are going to have to support going forward.

EMV will continue to impact innovation as FIs and retailers have to replace their technology (POS, ATMs, etc.) to take on the additional EMV functionality that we see coming our way. The large payments brands continue to invest in innovation with the most recent development seen in EMV and biometrics.

### **If today is Day 1, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

RL: Since most of our FI clients are going through a reissue cycle, and barring increases in counterfeit fraud for existing mag stripe cards, which would shorten that time frame, we would expect 30-40 percent of cards to be EMV-ready. On the retail side, we would expect to see a much faster ramp up because retailers have low-cost options for terminals in order to be compliant.

It's difficult to put a percentage on that, but we already know that the big box retailers have made the investments and are ready now or will be by Day 1. The small- to medium-sized retailer will increase migration as low-cost terminal options become more readily available and here at FIS we have the resource options for these clients.

### **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

RL: The role of EMV is to continue to be more flexible and differentiated for clients and allow greater convenience with increased security. EMV is only another piece to transacting in a more secure payments environment and is contributing an additional layer in fraud mitigation. EMV will continue to pave the way for the development and innovation of security surrounding card-present and card-not-present fraud alike.



## JAMIE TOPOLSKI

DIRECTOR, ALTERNATIVE PAYMENT STRATEGIES, FISERV

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

JT: The U.S. performance has been “Satisfactory.” Moving the scale of the U.S. payment system to the EMV standard is no small feat. The sheer magnitude of cards, devices, processors, financial institutions and networks in our landscape that must participate and contribute to the transition to EMV is staggering, especially in light of so much other market change. Markets far less complex than the U.S. took longer to achieve similar accomplishments. Complexity in the U.S. was further increased by our unique regulatory requirements. The absence of a mandate meant that the migration was driven by risk mitigation and the liability shift, which presented challenges to early focused momentum.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

JT: Complicated: The unique requirements for debit in the U.S. and the time it took the industry to collaborate and develop a viable solution in market made bringing EMV to fruition complicated. There are still many unknowns regarding merchant support for the U.S. Common Debit solution and how it will impact the cardholder experience at the point of sale.

Easier: Although EMV offers many different configuration options, we had fantastic collaboration with our partners and designed elegant, standardized configurations. Our standard, certified solutions have enabled us to provide a much simpler, economical and repeatable solution to our clients.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

JT: Unlike most other countries, the U.S. is not leveraging any of the offline capabilities supported by EMV – cards are “online only.” In the U.S., there are also choices available to card issuers – PIN vs. signature – which weren't available to issuers in other countries.

### What has EMV's impact on innovation been – and why?

JT: EMV adds a unique code or cryptogram to every transaction. This means that stolen EMV transaction data can't be used to create fake cards or fake transactions. This "model" of unique data for each transaction continues to drive innovation throughout the payments industry.

### If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?

JT: This is very difficult to predict, but here goes: There will be *more* enabled cards and *more* terminals!

### In a world where cards are evolving to digital forms of transacting, what is EMV's next act?

JT: EMV will transition very nicely to support digital payment methods (for example, payments initiated with a smartphone instead of a physical card). There is a need for a payment interaction between the customer and merchant and the security of EMV will add the same value regardless of the payment "form factor."

There is no significant difference between a contactless EMV card that must be tapped on the POS terminal and an EMV payment application that is in a smartphone.



## JEFF THORNESS

CHIEF EXECUTIVE OFFICER, FORTE

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

JT: “Performance Improvement Needed.” There hasn’t been nearly enough awareness or education provided to the various participants. Many merchants still do not understand the liability shift and do not have a migration plan established for their card services. Much more promotion and education is needed in order to help merchants understand the importance and what is needed in order to make the change over to EMV-based acceptance.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

JT: By far the most difficult dependency has been related to the certification process. The combination of limited resources being available to manage the process, along with a very time-consuming certification process, tied with test/certification kits that up until recently still had several serious bugs, have made hitting the deadline almost impossible.

**What has EMV’s impact on innovation been – and why?**

JT: I think that EMV’s impact on innovation is still evolving, but ultimately I think that EMV will help accelerate the push for alternative payment methods such as Apple Pay. Some innovation may be built on top of EMV and others may come in the form as an alternative to EMV. In either case, improvements to security, speed and user experience will each be key areas to target for improvement.

**If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?**

JT: By Day 366, we should see that the vast majority of major retailers and governmental agencies are now fully EMV deployed. Almost all consumers should have at least one smart-chip enabled card by this time, but some issuers may delay replacing low utilization cards until the card expires or when a card is stolen or lost.



## PHILIPPE BENITEZ

VP BUSINESS DEVELOPMENT, MOBILE PAYMENTS, GEMALTO

**It's Day One – the date that the liability shift happens in the US. How would you grade our performance as an ecosystem so far – Exemplary, Satisfactory, Performance Improvement Needed, Failing Grade – and why?**

PB: I'd say we are in great shape. Exemplary. According to The Nilson Report, the number of general purpose credit and debit cards in circulation in the U.S. reached 1.22 billion at the end of 2014. The majority of large banks have deployment plans well underway, and regional banks and credit unions will continue their migrations over the next few years.

The speed at which massive volumes of credit and debit cards are being replaced positions the U.S. as the fastest and largest EMV chip deployment in the world.

Many of the larger retailers have already upgraded their point of sale systems, and according to a Wells Fargo survey, half of small retailers in the U.S. have also done so.

So overall, the U.S. is on track for a very successful migration.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

PB: The biggest dependency was integrating with the banks' systems in preparation for EMV. Once the backend integration was complete, Gemalto could receive the hundreds of millions of consumer credit card records we needed to encode into newly issued EMV chips. And you're right, payments is a complicated business, but working with banks on a day-to-day basis long before EMV came into the picture made things easier for us to execute. Our banking customers trust our expertise because we have been involved with so many other EMV rollouts around the globe.

**What made the migration in the U.S. different from your experiences in other countries?**

PB: The main difference was the sheer volume and speed with which issuers undertook their migration programs. U.S. issuers replaced magstripe cards with chip cards at double or triple the rate other countries did. Although we knew the U.S. was going to be fast, we've also been able to use past successes and lessons learned to put the entire ecosystem in a solid position.

## **What has EMV's impact on innovation been – and why?**

PB: EMV has been great for payments innovation in the United States. For example, both Apple Pay and Samsung Pay use EMV as the underlying payment technology with additional features — namely tokenization — to simplify cardholder enrollment. It's never been easier to download cards onto mobile devices.

## **If today is Day One, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

PB: It's hard to say exactly how many cards or how many terminals, but like I said before, the U.S. is migrating at a rate two and three times faster than other countries have on the card side and much more quickly on the terminal side as well.

## **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

PB: Stakeholders all need to be aware that fraud will likely move toward online channels, also known as card-not-present (CNP) fraud. This has been the trend everywhere else EMV is in use, and the U.S. will be no different. The opportunity is, of course, to stay ahead of fraudsters by deploying technology solutions that don't add friction to the transaction and require no changes to the retailer's website.

Several solutions exist including tokenization and dynamic code verification, a technology that changes the three digit code on the back of your card every twenty minutes. That way, when you make an online purchase and type in your credit card information, the information cannot be hacked and reused to make fraudulent purchases. The three digit dynamic code will have already expired, and the fraudulent transaction will be declined.

## **How does Gemalto view the role of EMV in paving the way for payments innovation in the future?**

PB: We've mentioned mobile payments using EMV as a security foundation, and dynamic CVV cards as a way to secure e-commerce transactions with no changes to merchant websites. Beyond that, I see wider adoption of contactless technologies as more devices support contactless EMV payments, and more merchants adopt contactless as a way to speed up transactions at the point-of-sale. The use case for contactless is well proven around the globe and the payment networks have reported 10% to 40% increases in net spend on tap-active accounts. Active means tap and go contactless payments which are available on dual interface cards or on mobile devices. The trend around the world has been towards enabling contactless EMV transactions on all form factors available to consumers.

## **How do you see EMV and Debit evolving?**

PB: Now that most credit cards will be secured with EMV by the end of 2015, the deployment of EMV-enabled debit cards will continue to increase over the next several months. Additionally, since the deployment processes put in place for credit will also apply to debit, that migration will be quick and efficient as well.



## CAROLYN BALFANY

GROUP HEAD, U.S. PRODUCT DELIVERY, MASTERCARD

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

CB: “Exemplary.” It is an exciting time to be in the payments. The industry is innovating – chip cards, phone payments, tap-and-go – at the same time it is becoming safer and more secure. That is a rarity.

A liability shift was instituted that empowered banks and merchants to review their business models, access their risks and upgrade to safer, more secure technology on timelines of their own design. We will see cards in market reach over 60 percent by year-end. At the same time, almost 50 percent of all payment terminals will be chip-enabled in the same time frame. It wasn't easy and parts were not pretty, but I sincerely hope the industry will give itself a collective pat on the back on Oct. 2.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

CB: The U.S. move to chip cards was as complicated as if we collectively decided to drive on the left-hand side of the road. Every on ramp, exit ramp, street sign and tollbooth needed to be modified in some way.

As is often the case, the most difficult part is often the most gratifying part. I think we really came together as an industry in 2014 when data breaches took over the headlines. There was a collective realization that public trust was being eroded and fraud needed to be stopped.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

CB: The U.S. is one of the largest and most complex markets in the world. We were lucky to benefit from lessons learned in the 80+ markets that migrated before us. Those same best practices may also see the U.S. migration reaching 98-percent penetration by the end of 2017. The most complex migrations could also become one of the quickest. Just as important, fraud is being driven out of our ecosystem and as the technology platform for the next generation of payments is being established.



## What has EMV's impact on innovation been – and why?

CB: EMV is making payments smarter. At the heart of these smarter transactions is dynamic authentication or unique data that makes it virtually impossible to replicate cards and transactions. Beyond an improved baseline for security, MasterCard continues to invest layers of security that are easier and more intuitive to use: tokenization, biometrics, etc.

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## If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?

CB: It is estimated that 98 percent of cards in market will be chip cards by the end of 2017. I think that looks like a really, really good day.

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## In a world where cards are evolving to digital forms of transacting, what is EMV's next act?

CB: The EMV standard serves as the backbone for future payment technologies by enabling safer, smarter and more secure transactions across cards, contactless, mobile and remote payment channels. The payment security offered by mobile payments such as Apple Pay and MasterCard digital and contactless payments is based on chip card security.

It is called tokenization. Tokenization safely sends sensitive data, including card account numbers, by creating a unique “proxy” number that represents actual data.



## KAREN COX

### VICE PRESIDENT PAYMENTS & RETAIL SOLUTIONS, MONERIS

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

KC: I'd actually give us a "Satisfactory" rating, and my reason for doing so is that the U.S. had a much more unified approach to the EMV implementation than they did in other regions, such as Canada. It was not perfect. We know that there are good networks a little bit later to the game.

There were a lot of different challenges to the U.S. market, but the fact that the major card brands came out with a unified date, a unified approach and that they stuck with it, I really think gives them a "Satisfactory" rating.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

KC: I'd say it was harder overall than in the Canadian region, and some of the reasons for that are on multiple levels. One is you have a lot of banks in the U.S. You have different debit networks. There are more players that need to come around a table and agree.

In Canada, we have five big banks, and it was a lot easier to get that consensus. I think the economy at the time this was implemented and the investment that was needed made it a little more complicated to do the business case.

The reason that I went back to a "Satisfactory" rating in the first answer is that once the high-profile security breaches happened, there really was a rally around that date, and there really was an understanding, and finally, I think a consciousness and acceptance that EMV is a foundational brick in security in the industry and we can't skip it.

It's going to happen and it should happen for a lot of good reasons.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

KC: The number of people and the number of parties involved in bringing in solutions to the merchant, to the client, to the customer. You have a lot of independent sales organizations. You have a lot of independent software vendors. You have a lot of acquirers. And so those end solutions sometimes go through three or four hands, and to the end client or the end customer at the end of the day, they just want to know they have a solution that works.

One of the benefits that the U.S. market actually has is, you know, one of the big things that Canada went through were these multiple hops. First it was Visa, then it was Amex, then it was, oh, let's add debit products, and then it was security. And one of the things that gets offered in the EMV solutions today is really that approach to security that takes into account what we now in our vernacular take for granted, which is end-to-end encryption and tokenization.

We had to add those on in Canada very much after the fact in the EMV migration, and in the U.S. today, the difference is we're bringing all of these solutions to the table in one shot. So we're able to say, "Hey, you're moving to EMV, you're touching your system. Make sure that you layer in these other pieces of security to make sure you're protected."

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**What has EMV's impact on innovation been – and why?**

KC: You know, I love this question because it's always, "Are we going to skip EMV or are we not?" "Are we going to skip contactless?" ... I think what we're seeing is you can't throw the baby out with the bathwater. What Apple Pay did, and I'm using them because they're so high profile now, but if you pick Samsung Pay or Android Pay or Google, they're leveraging some of the security that comes from EMV, comes from the traditional card networks in terms of tokenization standards, and EMV and cryptograms, and they're layering that in with innovation.

It's a very, very creative way to achieve a couple of things. One is, there's going to be plastic, so as long as there's plastic in the world, you have to secure the plastic, and you want that ubiquitous acceptance. So payments always has this tension between who's going to issue the card and where can I use the card and when do I make the investment and who's going to help me pay for the investment I'm going to make.

What these digital wallets, for example, are doing in terms of innovation, are using the EMV standards, they're using the traditional route and payment rails laid, they're even using on the in-app side 3D Secure, so the eCommerce standards that we have, but then they're layering in their own wallet innovation and getting acceptance pretty quickly. So I think you're going to see the really great innovative solutions that want to get mass penetration leverage the security that's available but not stop there. They're going to add something on top of it.

**If today is Day 1, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

KC: It will not have 100 percent on either side, if I use Canada as a gauge. You're going to have the traditional verticals that are late – late for really, really good reasons, I might add, such as gas pumps. Protecting those things are prohibitive, they're expensive – we know there's a different date, so in 366 days from now, they are not going to be converted. Restaurants – whether restaurants need to convert and how quickly they need to convert – they were one of the slowest moving verticals in Canada because of the change to the business model and the change to the number of terminals, etc. that they needed. So I think card penetration may be up over the 70-percent mark. I think the terminal penetration, because you have a lot of things going for you in terms of being able to put out ubiquitous – I don't know if you'll hit 50 percent within the year. Fifty would seem like a high number to me. I think we'll be under 50 percent of terminals. That's my prediction. We'll see in 366 days.

**In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

KC: They're often criticized for being a little bit late in technology, but we're seeing them get into the mobile standards. And I know what we're seeing, even in the case of the digital wallets for the in-app side, and some of what is happening – we know on an R+D perspective – is getting some of that EMV data actually transmitted in a cloud scenario. So I think where EMV really needs to go is looking at how do you generate some of those unique security features and cryptograms in a cloud-based scenario online. We're seeing, do we embed certain hardware in PCs and in tablets? That's where they need to go, as we do move more to a stored card system and more to an online and mobile commerce. That's really where they need to develop some standardization, if not regulation.

**The terminal certification process, some say, has made it more complicated to hit our deadlines. Do you agree? And if so, what is the impact to you and your clients?**

KC: It's certainly harder than it was. As someone who's come from the Canadian environment and seen everything that a POS terminal needs to go through, I think the advantage that the U.S. has, and something that Moneris brings, is we can actually do a self-certification for these solutions ourselves so we don't need to go to the card networks so we really simplify it. We pre-certify a lot of it. The key change is that these POS terminals, and we went through this in Canada, when you're only doing a mag stripe, you can sit that thing on a counter for 10 years, it could fully depreciate, you could get the most out of that asset that you wanted. Because of the new security standards and EMV standards, if you get five years, that's great, but your book value is more in the three- to five-year range. So that's really where it's changing. And people really don't want to buy hardware. The U.S. is a highly purchase market. Most merchants buy their own terminal hardware. Canada is a little bit different, and we've seen more of a migration over to a rental market because the risk associated with the asset itself in terms of either becoming defunct with the security standards or needing to upgrade. I think it's manageable from a certification standpoint, but it changes the value of that asset as you're looking to purchase it.

## **Does that impact or complicate the transition? What is the implication on merchants?**

KC: It depends on the size of the merchant, and that really varies as you go from the large to the small. The large merchant is really about how do they standardize potentially global implementation or North American implementation. I want to standardize hardware, software and security. So we're seeing that as one impact. The other impact for small merchants is really, "Help me understand why I need this?" "And why do I need to make this investment?" "Reassure me that this is going to be good for a certain amount of time and I'm going to be able to stay up to date."

## **Do you think that the long tail of merchant - small shops and businesses – simply leapfrog to mobile?**

KC: I always add to that question: We need to define mobile. Mobile from a merchant point of view, in terms of a mobile acceptance solution, Moneris launched an EMV in contact with Capable Solutions in the U.S. a couple months ago, and what we're seeing is mobile has to accommodate EMV in contactless. We're already fairly commoditized on the POS side, but a commoditization of the peripheral that will securely read cards, and the innovation is happening on the mobile tablets side.

So you can have the best of both worlds. You're going to be able to walk around with a tablet or a phone and still securely take the EMV part of the transactions. I think some of these small merchants may very well go past the traditional "This is a countertop brick that sits on my terminal," and move to a tablet-based solution, but it will be one that can take the EMV card.

## **What about the really long tail – mPOS/micro merchants?**

KC: It's really going to be about how they run their businesses. Some of the solutions we have for mobile merchants really make sense because they are very small. They're happy with a blended rate, they're happy with a bundle. Sometimes I'm in my basement, sometimes when I'm at a flea market, sometimes when I'm on the street. I think that's an easier transition in a couple ways because it's packaged. Anytime all of the EMV software and all other reporting or all of the features that we add in our solutions is available in one package – all they really need to do is press go, and you turn it on.

It's when you start to get into the slightly larger accounts and certainly up to the mids and the nationals, where they could have a POS provider, they could have an independent software vendor, they could have their own IT department. So here's three or four layers of software integration that need to happen, and those are the longest, the longest to touch. If you're an independent software developer who resells or provides software and you don't want to learn the EMV transition, you need to pick a partner who can help you integrate that EMV functionality along with security and tokenization, etc. It really easily meets the needs of your end customers. In some cases, the micro merchant has it easier – they're just going to get a package, and it's going to all work.

**And now for the hairball of all hairballs: debit. What does the next year look like for debit EMV?**

KC: It's still going to be slow. I think the debit acceptance is going to be slow because the standards have been slower to come out and I know we're leveraging some more from MasterCard, some common functionality. I think it's going to trail. One of the things I think the U.S. market needs to acclimatize to that we went through in Canada – six years ago, I talked to a client and told them they have to test software in their point of sale, and it was a really hard conversation.

Today, I had that conversation a few days ago, and it was a normal conversation. These schemes aren't going to keep static. There's going to be a need to keep touching software and I think debit is going to be one of them.

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**Fraud online, as a percentage of sales, has stayed pretty constant for a very long time – five years or so. Why will fraud online get so much worse in a post-EMV world? Are the bad guys that much smarter than we are? What will they do that's different from what is being done now?**

KC: They'll go where it's easy, right? That's long been the prediction. They'll go where they can use the cards, which is why they go to the U.S., why they go online. Now, one of the problems with online – and there is some excitement around the innovation that happens around digital wallets and in-app payments – is the fraud tools need to work and not create friction in the checkout experience.

I think what we need to do is attack it from an industry point of view where we incorporate modernization of what those fraud tools could look like, get the card brands involved and actually make fraud tools work for the consumer experience. There's a lot of these brand-supported fraud tools for online commerce; they have friction and can lead to cart abandonment, which no retailer wants.

People really don't want to lose a sale, so there's a lot of back-office fraud checking. I think that has to come up in acceleration.



## TED FIFELSKI

### PRESIDENT AND CO-FOUNDER, SIMPLYTAPP

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Improvement Needed, or Failing Grade – and why?**

TF: I would say that from our vantage point, what I've see so far... We, as an industry in the United States have kind of got, I'd say a B-minus, or "Satisfactory."

It certainly hasn't been exemplary. ... When I go out to stores, I talk to the clerks when I'm checking out; I'm very aware of the different systems and hardware that's available, as well as how the other customers experience the checkout process. I try to make it a point to ask the clerk if they're familiar with EMV. And the overwhelming response is, "What is EMV?" And I see an EMV-compatible device right there.

That clearly tells me that there hasn't been a lot of education around: What is EMV, or what is a chip card? I oftentimes use both terms; they almost never understand what I'm talking about. And I try to explain it to them a little bit; they say, "OK..."

Then I ask, "Do you accept Apple Pay?" Right away, they all immediately understand what Apple Pay is. It's been messaged in the market for a year; some of them are Apple Pay users themselves, and their face lights up and they get excited [when asked about it].

What that really tells me is, from an EMV standpoint, there's been a job done ... There's still quite a bit of work [to be done] in education — whether the hardware is out there or not — [as far as] educating the general users and the clerks as to how to use it.

One example of a merchant that's doing a pretty good job, I believe, is Target. One of the last times I was at Target, I was checking out and I noticed something new on their counter: A sticker that provided a pictorial demonstration of how to use a chip card. And I thought that was really great, because it's getting consumers, myself included, in the mindset of understanding something new. Even if it's not telling them verbally, it's showing them, in a subconscious way, "Hey, there's a new way to do things; here's the information; you don't have to be scared of it."

Of all the merchants I've visited over the last couple of months, Target in particular has done the most in being proactive to educate their consumers — and perhaps rightly so. Much of the to-do about EMV migration is from [their] breach, so they have a vested interest in letting their customers know how to use it.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? What made it easier, if anything? And how so?**

TF: That's a great question. From a SimplyTapp perspective, we're in the mobile space; so we have a great seat, but we're not actively engaged in the EMV process. We're not installing hardware, we're not printing cards and we're not building systems to process those cards.

One of the things that we see, in fact, is a desire by the industry to, yes, it should address EMV, but also look towards those things, potentially leapfrogging EMV card issuance where it's possible. Oftentimes, we get called into meetings or customer calls asking, "How do we leapfrog? OK, EMV, we're going to address that — how do we do it?"

The two complicated dependencies are really the card management platforms, and then the processing capabilities of the existing card processors. Those are the two biggest hurdles we've seen. ... And, again, SimplyTapp's position is in the mobile space, so we often find ourselves with the question of: "How do we leverage EMV and the implementation of change on our card management platform, our processing platforms to go to the next step beyond EMV?"

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**What made the migration in the U.S. different from your experiences in managing the process in other countries?**

TF: It's hard to say, but I would venture to guess that the ... online to mobile, where everyone has a device in their hand in the United States, and they have the apps they use — they're very familiar with it. And they're very familiar when they lose their phone or someone hacks into their email or their Facebook account and starts posting nasty messages or pictures.

In the EMV world, or the payments world in general, at least in the United States, the general consumer has more or less been unaffected by fraud.

So I would say one of the hardest things that I have seen in the United States with EMV migration is the fact that American consumers just have no awareness of fraud. And because of that, they have little incentive to adopt new things. There's very little pain involved in their existing system.

If you look at the other debit societies around the world ... look at Canada and Australia and Europe ... consumers are heavy into the debit product, and there's more fraud and personal liability when those get compromised. In the United States, [liability] is almost exclusively [held by] the issuer or the card network. Therefore, the consumer has little to no awareness of the actual fraud that's taking place.



## What has EMV's impact on innovation been – and why?

TF: I'd say EMV has had some impact on innovation. ... Companies that focused on the hardware elements — the terminals themselves, the card management systems — they've had some impact, because they've had to put new technology in place that needs to handle EMV transactions. Overall, the sheer investment in tech companies is astounding. In 2014, there was \$1.4 billion invested in tech companies alone — and that's expected to be doubled this year. From an investment standpoint, from an innovation standpoint, there's been little to no impact on innovation. Looking at ourselves, we raised \$8.5 million in the last nine months.

I think it's more of a symptom. EMV is a bump along the way to a broader story in the FinTech world, which is kind of a full metamorphosis of the systems that we have today. EMV, realistically, is solving a problem at the plastic state that's a temporary problem as consumers move to a more mobile environment — and, frankly, they expect it now. It hasn't really affected innovation as a whole, really because of that metamorphosis that's taking place in the industry.

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## If today is Day 1, what will Day 366 will look like – one year from today? How many cards, how many terminals?

TF: Great question. It's a super-hard one. ... There are statistics out there that say anywhere between 60 and 75 percent of the cards issued will be EMV chip cards. I'm going to be more conservative; I'm going to say 50 percent of the cards out there will be EMV compatible.

As far as terminals go, I'd say between 40 and 50 percent of the terminals in a year will be EMV compatible. It's really hard to say, because there's such a long tail for those smaller merchants that really are going to, one, not know what they need to move to [EMV] ... and they're a higher cost compared to the larger merchants. As we experience more fraud, lots of the larger ones will go towards EMV, as they have been already. But just the overall long tail of the merchant problem makes it really hard to predict.

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## In a world where cards are evolving to digital forms of transacting, what is EMV's next act?

TF: There's a lot of upgrading of the systems in the space. The really great thing about moving into a digital medium or a mobile medium is the fact that those systems being able to handle EMV transactions are the same types of systems that can be leveraged for the mobile and pure digital space. Really, what we see is that EMV was the catalyst for what is yet to come. I don't think that EMV plastic will be a long-term solution, because there's just such an onslaught of user demand that's requiring mobile.

I think, really, that's where SimplyTapp is positioned nicely, because we provide that same type of secure EMV transaction, but we do it on the mobile cloud, which is a lot more flexible and geared, frankly, for the mobile environment. You get to leverage all the investment you've done on the infrastructure side on EMV-type of security, but you're not bound to that disconnected payment form. You have that two-wave communication in the mobile space that issuers and merchants are really craving.

## What is the relevance of EMV to your business and your customers?

TF: Obviously, we're a global company, and we focus our solutions on organizations that really want to be a part of the checkout process — whether that's buyers who are coaching similar aspects of understanding how they're spending, but also through the entire process of making a transaction.

EMV is a great thing when we look at markets that have already adopted it, like Australia and Canada in particular, where they have the terminalization and EMV has had to couple with contactless or mobile. We have an openness to those markets where the banks in the merchant space "get it." So we've got a fundamental, standard baseline technology that we want to now leverage in our own way.

When we look at things from the relevancy of EMV, SimplyTapp is encouraged by the adoption of EMV, primarily because it lays the foundation for the systems to be leveraged in the mobile space, as well as the contactless terminals that are already being deployed. It's a very positive thing for SimplyTapp, and we look forward to continuing to work with more innovations to leverage that secure payment solution for the next generation.

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## How has that relevance changed since the U.S put the full court press forward on EMV?

TF: The attention around SimplyTapp and what we offer has obviously picked up significantly.

When we started in 2011, the U.S. banks were eager to listen and hear about new technologies like our move to cloud, EMV deployed on mobile, reducing costs, touching customers in a more natural dialogue ... but really it didn't become a reality for those U.S.-based card issuers or banks until the full court press for EMV was really implemented or put on the field. From that point forward, banks got very, very serious about: "OK, we will have to issue EMV cards. There is a fixed cost to that; there is a cost of upgrading our system. We have to do that now."

So the conversation with SimplyTapp went from exploratory to true implementations of saying, "How do we not screw ourselves and have to invest twice? How can we set up our system to be able to not only issue plastic, but issue to mobile, and do it right away."

And I think the market in general has really taken that baton and picked [it] up. ... Clearly, we can see from the adoption of Apple Pay and their NFC solution, as well as Android and Samsung Pay, the critical mass is a fundamental understanding that contactless payments are here, mobile payments are here — or at least in the beginning stages of it, here in the United States — as exhibited by the entrance of those players who are traditionally a little bit more conservative when it comes to investing in spaces that really they had never touched. For us, it's been great to see the full court press in the United States ... and I think it's due to the increase as the issuers themselves become more aware of the capabilities of not only our system, but of providing a strong and cohesive mobile user experience for their customers.



## CAROL DONOVAN JUEL

CHIEF INFORMATION OFFICER, SYNCHRONY FINANCIAL

### What has EMV's impact on innovation been – and why?

CDJ: The EMV migration is expected to reduce Point of Sale (POS) counterfeit fraud by approximately 85 percent [according to Javelin Research] and will provide global interoperability for cardholders, meaning their cards will have wider acceptance outside of the U.S. The EMV migration has also provided an opportunity for us to collaborate with our retail partners on tokenization and point-to-point encryption.

In response to the liability shift, many retailers have upgraded their POS terminals, which has positioned them to accept contactless, near field communication (NFC) technology. This is helping drive mobile payments adoption, further enhancing security and convenience for cardholders and retailers. While EMV does not solve for all types of fraud, such as card-not-present fraud, the shift to EMV is a positive step for the payments industry across the U.S.

### In a world where cards are evolving to digital forms of transacting, what is EMV's next act?

CDJ: The shift to chip-enabled cards in the U.S. is a positive first step for card-present transactions with the added benefit that it is helping to drive mobile payment adoption. We continue to monitor and evaluate all emerging technologies, including point-to-point encryption, as the payments ecosystem evolves.

### What does the long-term game plan for EMV and PLCC look like?

CDJ: Synchrony Financial is committed to secure transactions for our retail partners and their customers. We have chip-enabled our patented Dual Cards in advance of the Oct. 1, 2015 liability shift (portfolio includes BP Oil & Gas, GAP, Lowe's, JC Penney and other leading retailers). In 2014, we launched the first U.S. retailer EMV cards to be chip-enabled at the POS terminals for Walmart and Sam's Club.

The shift to chip-enabled cards in the U.S. is a positive first step for card-present transactions with the added benefit that it is helping to drive mobile payment adoption. We continue to monitor and evaluate all emerging technologies, including point-to-point encryption, as the payments ecosystem evolves.



## LISA SHIPLEY

EXECUTIVE VP AND MANAGING DIRECTOR, TNS' PAYMENT NETWORK SOLUTIONS

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

LS: I'd award "Performance Improvement Needed." Too many merchants are still taking a "wait and see what happens" approach and we expect a large number of these will be hit by unexpected fraud expenses because they did not understand the true implications of being EMV compliant.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

LS: The dependency which made it more complicated for us was the number of terminal updates launched within the last 12-16 months. We found terminal manufacturers, as well as some terminal software vendors, lagged behind and had multiple versions launched in a short period of time. We introduced a tool to allow terminal providers to certify to all platforms, which made it quicker and easier to meet the EMV deadlines.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

LS: The migration itself was no different to what we observed in other countries, however, we found there has been less education available to help the industry make the necessary choices. The U.S.' proliferation of legacy terminals and lack of wireless technology also hampered merchant efforts to prepare for EMV as the required upgrades have been more substantial, costly and complex for some.

**What has EMV's impact on innovation been – and why?**

LS: Innovation has been boosted and enabled merchants to take a giant leap forward in the technology they use to accept payments. I'm pleased to see that merchants have used the opportunity to undertake upgrades which not only help them comply with EMV requirements, but also lay the foundations to capitalize on changing consumer payment habits. This is particularly important as we move to more digital forms of transacting with ever increasing speed.

**If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?**

LS: I anticipate we'll have about 20 percent adoption, which is still worryingly low, however, I'd estimate another 30 percent will be busy implementing strategies brought about after being caught by fraudulent transactions which they are now responsible for.

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**In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

LS: This is an interesting one! I think the next step is verifying the consumer and I would expect biometrics, such as fingerprint and iris recognition to play a part here. The possibilities are boundless and this is what makes it an exciting time in payments. Whatever the future holds for EMV, taking the next step together globally at the same time, rather than in regional increments, will be strategically advantageous for all.



## CRAIG LUDWIG

GROUP EXECUTIVE, PRODUCT MANAGEMENT, TSYS MERCHANT SERVICES

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

CL: “Satisfactory.” While there has been a lot of work done to get us where we are today, there is still a lot of room for improvement. Notably, some late changes from the card brands have caused some issues. In addition, since there is not one central group driving the migration, there is a wide variety of education – or lack thereof – out in the marketplace, as well as conflicting information on how cards are set up and will interact at the POS.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

CL: The main dependency that made it more complicated was the extensive testing and variety of requirements mandated from each brand in order to transition to EMV. This initially applied to updating our hosts to obtain card brand certification, and we continue to see it with terminal testing and certification. The additional complexities in terminal certification have extended the time required to certify for both our own proprietary products and our third-party VAR and ISV solutions. However, in an effort to streamline the certification process for our partners, we are continuing to incorporate certification tools and semi-integrated solutions, as well as providing a robust 24/7 testing environment.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

CL: The overall scale of the market and the number of players are far greater than previously seen in any other market, which has caused issues and is certainly one of the reasons that we are the last major market to migrate to EMV. Without a central entity driving the mandates, communication and implementation methods have varied greatly.

Also, EMV adoption within the restaurant industry outside of the U.S. has been much more widely accepted. They have been more receptive to pay-at-the-table devices, whereas the restaurant industry in the U.S. has seen lots of pushback. Many restaurants are hesitant to make the transition. However, we are in the early stages of EMV migration, so this may change down the road as new solutions are introduced.

## **What has EMV's impact on innovation been – and why?**

CL: I think the impact has been a bit mixed. Take the impact of EMV on mobile payments, for example. From an infrastructure perspective, it has made terminal manufacturers develop new solutions that support both EMV and NFC. However, while smaller merchants may be willing to obtain a single device that supports both of these technologies, larger merchants may be slow to adopt NFC due to the costs associated with upgrading a large volume of terminals. For them, EMV is the priority, causing the implementation of NFC technology to lag somewhat.

## **If today is Day 1, what will Day 366 will look like – so one year from today? How many cards, how many terminals?**

CL: Day 366 will certainly show some great success and progress, especially in the number of debit cards in the field and merchants migrated. There are a wide range of estimates out there for year-end 2015. In looking at debit cards, the current estimate is about 25 percent of issued cards are EMV, and I think that percentage will double by Q4 2015. Regarding the amount of merchants migrated, the estimates for year-end have been anywhere from 10-47 percent. I think realistically we will be around the 20 percent range, but I see that number doubling by the end of 2016.

## **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

CL: One of the items being looked at for EMV is how it aligns with tokenization. Of course, from a security perspective, tokenization is a great enhancement. However, as it grows, and there are less “real” card numbers being used – which is what is needed to track loyalty and the like — EMV will be looking to create an identifier to track back to the original card number, even if that means creating different tokens for that card. It will be interesting to see what comes from the EMV 2.0 specifications that EMV Co. is starting to develop for the next generation of EMV.

## **TSYS has a unique perspective on EMV – you have both issuers and merchants as customers on your platform. What has surprised you most about the migration journey each of these stakeholders has taken over the last year or so?**

CL: It's been surprising to see how slow both issuers and merchants have been to adopt EMV. From an issuing standpoint, the issuance of EMV chip cards involves a significant expense, so the pace at which cards are being issued is understandable. And though issuers are becoming more and more aggressive at getting EMV chip cards out into the marketplace, I thought most issuers would have met their goal ahead of the Oct. 1 deadline. On the other hand, merchants have been hesitant to migrate because if there isn't a perceived risk of fraud, their willingness to expend the money on new equipment is relatively low. Now that the liability shift is here, they may get a shock when they see they have been hit with fraud, as they've been protected from it in the past. It's also been surprising to see the perception many VARs have on the amount of time it takes to get EMV certified. Now that Oct. 1 is here, we're seeing a higher demand for certification, but many seem to think certification can happen overnight.

**What could we have done as an industry to better prepare merchants for the shift? What should we be doing on Day 2 to make their journey easier?**

CL: As an industry, we could have done a better job in educating merchants of the change. There has been a great deal of conflicting information coming out, even from within a single card brand. Looking toward Day 2, we need to break down the competitive silos and share best practices to make it a smooth transition in order to get a larger percentage of merchants migrated.

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**How do you see EMV and debit evolving?**

CL: Slowly, because of the late timing to get the common AID specifications clarified. The issuance of debit cards is certainly lagging behind in the market. In 2016, I see that increasingly significantly.

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**What are you doing to prepare merchants and issuers for the onslaught of fraud online that we believe will come?**

CL: As fraud gets reduced for in-person transactions, there will certainly be an uptick in online fraud. We are providing education and tools to negate that for our customers who have an online presence. We are urging our clients to take advantage of the security features tokenization offers. We are also promoting fraud tools that can help merchants see the level of fraudulent activity they are experiencing so they can anticipate where the impact is going to be. By giving them the right education and tools, our clients should be able to better protect themselves from fraud or lessen the impact when and if it occurs.





## PATTY WALTERS

SENIOR VP, EMV ISSUING AND ACCEPTANCE STRATEGY, VANTIV

**It's Day 1 – the date that the liability shift happens in the U.S. How would you grade our performance as an ecosystem so far: Exemplary, Satisfactory, Performance Improvement Needed, or Failing Grade – and why?**

PW: The market has made an exemplary effort toward the migration to EMV in the United States. As the world's largest and oldest payment market, we enjoy a very complex and feature-rich infrastructure, developed over 30 years of continual innovation, improvement and competition. We are the only market to boast more than 15 independent debit networks, more than 1 billion magnetic stripe cards, well over 10 million point of sale devices, and federal regulations governing EMV design decisions. Our move to EMV is complicated by the necessities of our market, as such, our road will be different from that taken in other markets and will require time and diligence to complete.

**Payments is a complicated ecosystem with a lot of dependencies. From where you sit in the ecosystem, what dependency made it more complicated for you to do your part in bringing EMV into the U.S.? Easier?**

PW: One of the largest dependencies that the U.S. market has faced is the need to support EMV while at the same time ensuring Regulation II (Durbin) compliance. Regulation II was legislated shortly after the U.S. payments brands' EMV liability shift was announced in 2011. However, it wasn't until early 2014 that Durbin-compliant debit specifications were issued by these same brands. These specifications called out a specific set of requirements that issuers, acquirers, ISVs and terminal manufacturers would utilize to design a Regulation II compliant debit EMV infrastructure. As debit constitutes roughly half the cards and transactions in the U.S. market, many, if not most, of the U.S. market's ISVs and terminal manufacturers delayed their EMV design implementations in order to have the benefit of this critical set of requirements. The net result is the largest acceptance market in the world has had significantly less time than any other in the world to move to EMV. While most other markets enjoyed four years or more of lead time to prepare, the U.S. market has had a bit more than 18 months to fully enable a credit and debit product launch. That lack of time has made it complicated to implement EMV.

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

PW: As I mentioned above, the regulations governing debit EMV were released only 18 months ago, which is precious little time to manage the largest change in the U.S. payments industry.

## **What has EMV's impact on innovation been – and why?**

PW: The wholesale upgrade of technology and systems that EMV will require offers the U.S. market a golden opportunity to innovate. Examples of this can already be seen in the mobile and security spaces specifically. Consider the lack of point-to-point encryption and tokenization before EMV and the significant conversion effort in support of these new security options as a result of the upgrade. Many merchants are taking the opportunity to add these tried and true security techniques during their EMV upgrade cycle, something that might not have happened had that upgrade cycle not been required.

The resurgence of NFC-based mobile options is another example. These are actually riding the specification rails of the EMV message format, thereby offering a relatively painless upgrade cycle to merchants and their systems providers in support of mobile acceptance, all because of the EMV upgrade. Post EMV, the future will certainly bring more opportunity to utilize the new U.S. payments infrastructure to its fullest advantage, all with a backbone of strong cryptographic security techniques offering a stronger platform from which to grow.

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## **If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?**

PW: The U.S. market is at the beginning of a very long migration cycle toward EMV. On Day 1 of the liability shift, we will surely see the nation's top merchants in the retail, supermarket and drugstore verticals engaged and beginning their technology pilots in preparation for subsequent rollouts. In the middle markets, ISVs and suppliers to the same verticals will be busy integrating their technologies in order to supply their merchants with solutions in 2016. SMB merchants in those same high-risk verticals will begin to understand the importance of EMV. These cycles will mature on Day 366 so that we will find a significantly greater number of small, medium and large national merchants in the high-risk categories EMV enabled.

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## **In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

PW: EMV's next acts will take multiple forms. We can expect tokenization of PANs to manifest within the cards themselves and EMV techniques to modernize into card-not-present areas, including options for more frictionless security options increasing our online shopping security.

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## **You deal with a range of merchants – the biggest of the big retailers, all the way to SMBs across a variety of merchant segments. How will they see the world on Oct. 1, 2015?**

PW: The largest merchants in the grocery, retail and drugstore verticals will be engaged and processing with EMV as well as magnetic stripes for those customers who do not have chip cards. The mid-range merchants will be working toward these changes and a smaller percentage of the SMB merchants will be EMV enabled.

**Large merchants don't seem to be rushing into terminal refresh, but instead are adopting a data strategy that prevents data from being at their POS. What is EMV's role in that strategy?**

PW: As merchants see their need to maintain an increasingly complex and risk-centric payments infrastructure, the question they are asking is "how do we make this affordable while at the same time reducing the risk of compromise and continuing to offer the new payment options our customers will expect?"

In the last several years, terminal and middleware technology has now evolved to allow merchants to get the benefit of a highly integrated payments infrastructure where the terminal or PIN pad can automatically receive its purchase information from the POS but now format the transaction and route it to their acquirer WITHOUT having to pass it back through the merchant's ecosystem.

Commonly known as semi-integrated, this methodology allows the merchant to reduce their PCI scope to a small number of systems — significantly reducing expense and risk while also providing a long-term solution for minimizing the impact of ongoing EMV maintenance requirements.

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**Will the long tail of merchant — small shops and businesses — simply leapfrog to mobile? What about the really long tail — mPOS/micro merchants?**

PW: Mobile is a channel for payment acceptance. As such, SMB segments will always need a multichannel approach to satisfy consumer needs. Multichannel means in-store, m-commerce and eCommerce support. In some areas where Internet access helps blur the lines between channels, it's possible it may make sense for merchants to run their business operations entirely on mobile devices.

However, since connectivity is largely ubiquitous for most SMB merchants, mobile will remain to be a channel that can be leveraged for acquiring off-site consumer cards, and other payment types (e.g. at a street fair, delivery, etc.). As for mPOS/micro merchants, mobile will always play a role. However, not all businesses remain small. If a micro merchant succeeds, they often can opt to adopt a store location, hire staff, obtain inventory, etc.

As such, it will be a challenge for mPOS solutions to be able to scale and keep pace with the growth of business. The long tail will remain firmly in place if a clear set of functions isn't addressed to meet mid-market business demands to keep in sync with such growth.

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**And now for the hairball of all hairballs: debit. What's the next year look like for debit EMV?**

PW: We will see significant debit expansion in 2016 for national merchants and will see significant issuer penetration in large regional portfolios. We do expect it to be slow to hit community banks due to lack of capacity/bandwidth in card and personalization factories.

**Fraud online, as a percentage of sales, has stayed pretty constant for a very long time – five years or so. Why will fraud online get so much worse in a post-EMV world? Are the bad guys that much smarter than we are? What will they do that’s different from what is being done now?**

PW: While fraud has always been a concern, with the EMV liability shift the cost of fraud is top of mind for retailers. As many business owners know, liability for card-present fraudulent transactions is shifting from card issuers to merchants when chip cards are used at mag stripe terminals, penalizing those who have not yet invested in the more secure technology.

EMV is an important tool for combating fraud for card-present (CP) transactions, but the very nature of payments is changing. Merchants increasingly see payments not as discrete transactions, but as part of an ongoing customer relationship spanning the store, the Web and, increasingly, the mobile device.

Traditional brick-and-mortar merchants are going online and expanding their order sources to include eCommerce and mobile commerce. As the retail point of sale (POS) becomes a harder target, fraudsters are likely to shift their focus toward softer targets handling card-not-present (CNP) transactions, like the merchant website and mobile platform. As the nature of the threat evolves, merchants need to take a holistic approach, combating fraud across all their payment channels.



## ERIK VLUGT

VICE PRESIDENT OF GLOBAL PRODUCT MANAGEMENT, VERIFONE

**What made the migration in the U.S. different from your experiences in managing this process in other countries?**

EV: The EMV migration in the U.S. has some unique components for the industry as a whole given the sheer size and complexity of the U.S. payment ecosystem. Additionally, there have been specific legal and business complications related to the implementation of The Durbin Amendment. That said, the industry, with the leadership of industry forums like the EMF, has overcome these challenges and is actively implementing EMV.

**What has EMV's impact on innovation been – and why?**

EV: EMV has definitely had a positive impact on innovation to the extent to where merchants should view it as a “liberation” instead of a liability shift. Of course, EMV provides merchants with freedom from card fraud. Card fraud in the U.S. cost \$7.1 billion in 2013. Full EMV adoption has been proven in countries outside the U.S. to mitigate card fraud at the POS. While EMV on its own won't eliminate all fraud and breaches, it represents a key piece of a full portfolio of technologies — including encryption and tokenization — that help to prevent fraud and secure consumer and merchant data.

EMV offers a pathway to contactless payment, which Forrester projects will reach \$90 billion in the U.S. by the end of 2017. Awareness and adoption of contactless mobile payments are growing. Merchants who transition to EMV today are getting a head start on the technologies that prepare them for mainstream adoption of mobile payment acceptance tomorrow.

EMV enables merchants to keep up with consumers' changing expectations. By the end of 2015, 70 percent of U.S. credit cards will feature embedded EMV chips, says research firm Aite Group. Consumer expectations are rising, for better security, convenience, interactivity, speed and ease of use. Merchants that modernize their payment technology now, beginning with EMV, can also gain a competitive edge with the ability to support emerging payment methods (NFC, mobile wallets, etc.) and add more value to the point of sale in the form of digital coupons, advertising and special offers.

Finally, it can bring new value to consumers and merchants alike. Modern payment devices offer more than EMV payment acceptance. Today's payment systems can enable retailers to deepen consumer relationships — from loyalty programs to e-coupons to spot discounts — in ways that enhance customer loyalty while stimulating new revenues. The liability shift presents an opportunity for merchants to invest in EMV and other new technologies that will pay dividends many times over. With the October liability shift in sight, the sooner our national payment infrastructure migrates to EMV, the better.

**If today is Day 1, what will Day 366 look like – so one year from today? How many cards, how many terminals?**

EV: It's hard to predict exactly how many EMV cards and EMV-enabled terminals we'll see by this time in 2016. However, it's safe to say that we'll definitely see far more EMV cards, considering that, according to Aite Group, 70 percent of U.S. credit cards will feature embedded EMV chips by the end of 2015 alone. The same can be said for EMV terminals.

For instance, in Q2 of 2015, 95 percent of the terminals we shipped were EMV capable. Many of the terminals that are currently installed in the U.S. are capable of accepting EMV. However, this time next year, these terminals as well as those that will be installed between now and then will actually be accepting EMV from customers.

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**In a world where cards are evolving to digital forms of transacting, what is EMV's next act?**

EV: As consumers become comfortable and more familiar with EMV, they'll begin to equate it with increased payment security and eventually start to express concern if and when they find themselves making a purchase from merchants that aren't able to accept chip cards. Merchants will notice increased consumer demand for EMV, and we'll continue to see growth of installed EMV terminals at many of the smaller merchants that might not have previously taken the opportunity to upgrade.

We'll also start to see more gas stations updating their pumps to support EMV as well. Like other merchants, the October 2015 liability shift applies to their in-store payment systems, however, the liability shift for the petroleum forecourt doesn't go into effect until 2017.

Consumers will begin to see more value during checkout, as merchants that purchased versatile EMV-capable solutions leading up to the liability shift begin to leverage supporting value-added services, such as digital couponing, loyalty incentives and other capabilities that can help them to sell more.

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**What's been the most difficult part of the migration to EMV in the U.S. – and why?**

EV: It's important to note that the migration is still underway and, similar to what other countries experienced during their shift to EMV, will continue for quite some time. With that said, there are many variables that have and continue to influence the migration to EMV in the U.S. As I previously mentioned, the EMV migration in the U.S. has some unique components for the industry as a whole given the sheer size and complexity of the U.S. payment ecosystem.

Additionally, there have been specific legal and business complications related to the implementation of The Durbin Amendment. Fortunately, the industry, with help from the EMF and other forums, has overcome these challenges and is actively implementing EMV.

**How are merchants preparing their sales associates to deal with the change at checkout? Do you think they are ready?**

EV: While some are more EMV-savvy than others, employees — especially those at larger retailers — are now knowledgeable enough as a result of training to assimilate to this new form of payment and checkout process.

**Do you have any concerns that the liability shift – and the change in checkout – is right before the holiday shopping season? How are merchants preparing?**

EV: Leading up to the liability shift, we worked with our clients and partners to make the liability shift as smooth as possible. Part of this was educating them on ways to familiarize their staff on how to accept EMV and walk customers through an EMV transaction. This included handling the potential increase in transaction times as consumers became comfortable with the steps involved in paying with EMV.

**What is the impact of EMV on mPOS?**

EV: EMV has actually provided the opportunity for merchants to consider including additional functionality in their infrastructure. One such solution is the ability to tie a secure payment device with an existing tablet, handheld device, or smartphone and use it anywhere in the retailer's environment. Retailers have taken, and are taking, the opportunity to rollout mPOS in conjunction with or shortly after the EMV upgrade.

We have seen interest in our mPOS solutions increase significantly as these solutions are always capable of supporting EMV transactions, are agnostic to the tablet or handheld device they are paired with, and are natively secure by encrypting cardholder data to help avoid data breaches.