



Future-Proofing Payments Transcript

June 28, 2018

Meredith Elmore: Good afternoon, and welcome to the Federal Reserve Bank of Atlanta's *Talk About Payments* webinar, "Future-Proofing Payments." My name is Meredith Elmore. I am with the Center for Learning and Innovation, and I will be your moderator for today's call. Today, we're joined by Douglas King, payments risk expert from the Federal Reserve Bank of Atlanta.

Before we get started, I do want to cover some brief call logistics that you can find on slide 2. If you haven't had the chance to join us in the webinar, please click on the link that is provided in your webinar invitation. Please note that today's call is being recorded, and everyone's phone lines have been muted.

We will be taking your questions at the end of today's session, but please feel free to submit those at any time. You have two options for submitting your questions today: you can email rapid@stls.frb.org, or you can use the "Ask Question" feature located in the bottom left-hand corner of your webinar player.

And at this time, I would like to turn the call over to Doug to get us started.

Douglas King: Thank you very much, Meredith. I appreciate you handling the intro. Jumping on to slide 3, I just wanted to give folks who may not be as familiar with the Retail Payments Risk Forum as others a brief description of what we do here. We are probably best known for our weekly blog, *Take On Payments*, but I should send a caveat there, as I said "weekly"—we do take time off every now and then, and with the Fourth of July holiday coming up, we figured maybe it wouldn't be best the fodder over the grill, grilling hamburgers, hot dogs, or whatever your food choice may be next week. So that weekly blog—don't look for it on Monday, and prepare for those grills and watching fireworks.

But beyond our blog, *Take On Payments*, we participate in events, we convene events here at the Fed, and we work across all stakeholders in the payments industry, really trying to identify, understand, and mitigate risks within the different payments systems. Most often, the risk we discuss is fraud related, but today's webinar is going to be a bit different. Maybe you could say it's better aligned with operational risks, as it relates to the future of payments—and, more importantly, the myth or notion of the ability to actually future-proof payments or make reliable predictions about them in a world of rapidly changing technology.

So the focus on the future will be around using mobile payments at the point of sale. This is also known as *proximity payments*, or even *contactless mobile payments*. Throughout today's webinar, I will be using those terms interchangeably.

So moving on to slide 4, we'll just briefly touch on the agenda for today. Before we dive into mobile, I wanted to spend a little bit of time taking a look back at the debit card industry in an effort to level set a bit on how long payments adoption can take—and also how rapidly, once it does gain some traction, that adoption can take. Then we will get into a deeper dive into how mobile is impacting our lives, and then ultimately how we see, or how I see, mobile at the POS evolving. Then we'll have, hopefully, plenty of time for your questions.

So before we even get to the debit space, though, on slide 5, I just wanted to highlight that predicting the future is a very difficult game. I'm best reminded of this—as a child growing up in Memphis, Tennessee, December 3, 1990, was going to be a big day for us. Dr. Iben Browning had predicted that a massive earthquake would hit the New Madrid fault line. Many of you, if you're not from the Memphis area—which I imagine most on the call are not—probably you've never even heard of the New Madrid fault line. It's not a very active fault line, and its last big earthquake was back in the 1800s. Interestingly, the Mississippi River actually flowed upstream during this earthquake, and lakes were created because of this. It's a very big fault line, just not very active.

Apparently, Dr. Browning had had some success predicting things previously, and leading up to this date of December 3, 1990, we were practicing earthquake drills in school. I had family friends who were stockpiling goods and supplies to prepare for this day. So when December 3, 1990, finally rolled around, there were a lot of missing kids from my school that day. Even some of the school systems in the surrounding area of the New Madrid fault line had canceled school, all on Dr. Browning's prediction. Well, if you are from the area, as you remember—or for those not from the area, you can probably guess—the earth stood still that day, and everyone then thought how ridiculous this Dr. Browning was. I think there are even headlines labeling Dr. Browning as a quack.

So the predicting game is tough, and it can be dangerous. Kids were missing school, people had stockpiled, and in the end, this guy was labeled a quack for missing that prediction. So stepping the prediction game up to a more real-life example of how difficult predicting can be, let's jump to slide 6. For those that do read the *Take On Payments* blog, this is kind of my segue into that blog.

So my wife is currently obsessed with listening to audiobooks via downloads on her mobile phone. It kind of drives me crazy. I was asking her, is she going to forget to read? Because, literally, she's always walking around with her Bluetooth earbuds in listening to books, it seems.

When I think about this, I look back to the mid-eighties, and just think, "What would my grandmother think of this, if she were here to see this today?" As a child, I loved going to the bookstore with my grandmother and picking out books, where we'd then go back home and read that. But, my, how this world has changed! That little bookstore in the mall that my grandmother and I used to go to doesn't exist today. That's not necessarily because of the audiobooks or the internet. But in the late eighties, early nineties, we saw the birth of these—I'll call them "mega bookstores," but they were more than book stores, they were really entertainment stores. You could buy CDs there, books, magazines—oftentimes they had a café. And from there, we had Amazon come and change that bookstore model, so to speak, where people are now purchasing those books online rather than going to those stores. I think some of those mega stores are still around today, but there are definitely fewer than what was around back in the early nineties.

But then fast forward to the 2000s, mid-2000 through today. The e-readers and audiobooks have really rendered paperbacks, hardbacks—I don't want to say "useless," because I still like to touch one, but our consumption of these books is different. We no longer need these hardback books or softback books. And how could my grandmother, back in the mid-eighties, ever even have known this was coming? Bluetooth earbuds, mobile phones that you could download, e-readers that you could read

these books on—it would have been practically impossible for her to predict this. But after spending 10-plus years in the payments space, I've been hearing for many years from those who think that they are in the know that mobile proximity payments are the future at the POS—but could this just be another failed prediction?

So as I mentioned on the agenda slide, and jumping to slide 7, I'd like to spend a few minutes talking about the debit card's rise to prominence in consumer payments here in the U.S. But before we get to its rise, I thought it made sense to take a little walk back in history with debit cards. Believe it or not, as I did some research on debit in the U.S., [I found] debit was first piloted by a financial institution all the way back in 1966. I certainly wasn't around there then, but asking people who were, they don't remember this pilot. Perhaps they weren't familiar with the Bank of Delaware, the bank behind that. It clearly wasn't a huge moment for debit, but it's just interesting to note that the notion of debit—and there was an actual debit card in the marketplace back in 1966. Ten years later, in the northeast region, you had two supermarkets who decided to install POS debit systems. I don't know much about those systems, what they looked like—there wasn't a lot out there to research—but in just 10 years following the first pilot or issuance of debit, two grocery stores decided to install debit.

During this time, other financial institutions were experimenting with debit programs, but there were no serious efforts to launch debit cards really on a large scale prior to the 1980s—and that's when, in the early eighties, you had other merchants (notably some large gas stations and supermarket chains) begin testing debit at the POS. But I would say really the kickstarter for debit was in 1985, when the Supreme Court rendered a decision that ATMs did not represent bank branches. And what this did was it paved the way for the development of the interstate EFT networks. Prior to this, up until this point, ATM networks were proprietary, meaning that the ATM cards could only be used in ATMs owned by the financial institution issuing the cards.

With this decision by the Supreme Court, the financial institutions now recognized that their networks could be shared, so their customers were able to access their accounts in cash at many ATM locations, no longer just their own financial institutions'. And as customers became more comfortable using their ATM cards virtually everywhere they could find an ATM, the ATM networks saw this as an opportunity to begin introducing debit at the point of sale. This led to the growth of POS debit terminals in the early to mid-1990s. So debit really grew out of this ATM network.

And with the use of the EFT network, these ATM cards also becoming debit cards and being used at the point of sale, Visa and Mastercard saw the opportunity to introduce a new debit option which did not require a PIN like the ATM and the EFT debit networks did, but would, rather, flow through the signature networks. And by the mid- to the late 1990s, debit was really off to the races.

So jumping ahead to slide 9, talking a little about debit being off to the races, and how did that come to be—well, this chart depicts the number of cards with a debit function and their average annual transactions from the mid-1980s through 2006. This data comes from, believe it or not, a report from the Federal Reserve Bank of Kansas City. It's fairly dated at this point, but it does a great job of illustrating what I'm getting at here. So we already had a large base of ATM cards in the market prior to debit really taking off, but as the EFT networks expanded at the POS back in the early nineties, we really saw issuance starting to climb as those ATM cards had more functionality than just being used at the ATM.

And then again, as I touched on, when Visa and Mastercard jumped in the game in the mid-nineties with that signature opposite, you really see debit card issuance begin to take off. And what was driving this issuance and usage? For one, banks saw it as an additional source of revenue as debit was replacing cash transactions, as well as reducing cost from check transactions. For the consumer, this was wonderful because these check and cash transactions really allowed—what debit was replacing, it allowed them to reduce the need to carry cash, maybe go visit the teller to obtain cash, visit an ATM to obtain cash. So it reduced those trips, and we all remember writing checks at retail stores was a cumbersome task. This was much easier than that.

So banks saw value from an additional source of revenue, and consumers saw value out of the speed of the transaction and out of just ease of use compared to having to go obtain cash. But what about the merchant's incentive to accept debit? Because there are two sides to this payments equation, so on slide 9, I take a look at the installation of PIN debit terminals. What you see is, again in the mid-1990s, we really saw PIN debit terminals take off as the EFT networks continued expansion beyond the ATM to the POS. And why were merchants willing to accept debit cards? Several reasons—and I guess perhaps we could debate some of these reasons—but for one, they saw that consumers preferred debit to cash and checks. They also saw that this could speed up their own checkout lines, so they were able to offer something that would make queues faster and that the consumers were really taking to.

The cost of acceptance to a merchant for PIN debit was less than for other payment instruments. It cost merchants less to accept PIN debit than it did for credit cards and checks. And then from a fraud perspective, PIN debit offered a lower risk of fraud compared to other payment instruments, such as credit and even cash, which still had high counterfeiting at that time, and checks.

So as we enter the mid-2000s, we have approximately 80 percent of checking account customers holding a debit card and virtually acceptance of debit cards everywhere cards are accepted, and about a third of those locations accepting PIN debit. And that third of the locations accepting PIN debit, they represent some very large retailers, including your big box discount stores, grocers, et cetera.

So how did all this translate into usage? On slide 10, I chart data about debit card usage from the Federal Reserve's payments study. And think back to debit's first pilot, in 1966. [After] all of 34 years, up to 2000, debit finally achieved greater than 10 percent of noncash payment transactions. So 34 years from that first pilot—and, yes, it was only a pilot, and, yes, there are iterations of other financial institutions following that pilot, maybe a supermarket working with one particular bank to launch a debit system—but 34 years from the initial point of debit to get to this 10 percent is quite a long time, and really shocked me.

But look what has happened in the last 18 years since we hit that "greater than 10 percent" mark: debit usage has skyrocketed to coincide with the charts that we looked at back on slides 8 and 9, the charts that depict the issuance and acceptance of debit. So if the block was removed on that, you'll see that debit now represents 48 percent of noncash payment transactions—nearly half of our noncash payment transactions are using debit cards. So debit truly is the highest noncash payment method in this country today, but just keep in the back of your head that it was a very, very long ride from its humble beginnings in 1966. And keep that long ride in your mind as we transition to the discussion on the future of payments and, really, mobile proximity payments.

On slide 11, mobile truly has been transformative in so many ways, but personally, for me, mobile has changed the way I consume baseball. I love baseball. I know to some people it's a dying sport. We hear that millennials aren't into baseball, but I'm happy to say that my two young kids—much younger than millennials—are following in dad's footsteps, and they love watching baseball as well.

But really, mobile has been a game changer for me as it relates to baseball. It's my exclusive wallet, or container, for our Atlanta Braves baseball tickets. We've been season ticket holders with the Atlanta Braves for several years. Last year, mobile ticketing was big. This year, I did not even receive hard tickets. You had to specially request hard tickets. Otherwise, everything that the Braves did for season ticket holders was mobile. I love this, it's great—mobile phone in the pocket, no tickets to worry about losing, or in my pocket. But interestingly, there are some fans who miss having a physical ticket as a keepsake, so that option still is open. I remember as a kid [that] I loved keeping that ticket, and I still have drawers full of old tickets from events that I went to.

The other thing is, when I'm not at the ballpark, I absolutely love watching the games. With my mobile phone and a subscription, I'm able to watch every single out-of-market Major League baseball game. Obviously, I would prefer to watch the game on my big-screen TV rather than on my phone, but I'm not always at home to catch the game I want to watch, so having the phone to watch Major League baseball while on the go, whether I'm traveling for work or—this blows my mind—hanging out in the boat in the middle of the lake, I'm able to do what truly is an awesome experience. And I look back to growing up and think, "Wow, how much better do my kids have this baseball experience and the consumption of baseball than I had as a kid?" So here, to me, technology—mobile phone—being transformative relates so well to me as a baseball fan.

But I know not everybody on the call is a baseball fan or a sports fan, so I wanted to just put into perspective how transformative mobile has been to some other areas, some other industries, and in the short amount of time that the impact has taken place. So on slide 12, let's take a look at how mobile has impacted the digital camera space. I throw out "digital camera," [but] there will be plenty of people who are on this webinar that think, "Wow, digital cameras aren't that old." They were really cool. We all remember our parents, or as kids, playing with a camera. I remember purchasing my first digital camera in 2003, thinking, "This is awesome! So cool!" It was bulky, had some good zooming power, but wasn't the greatest thing since sliced bread, but it was certainly better than having to take a picture with an older camera, take the film, wait an hour or two hours, overnight, to get that processed.

But you know what? That awesomeness that I felt in 2003—it didn't last very long, thanks in part to mobile phones replacing cameras. So on the chart, I label where iPhones were introduced. That was in 2007, and you can see that soon after that introduction, digital camera sales fell—not too dramatically, but there was a quick draw down, as the phones did have cameras. But unfortunately, in those early phones, the camera wasn't quite up to snuff from a quality perspective, and I think people who said, "You know what? I can replace my digital camera with a phone" were like, "Eh, it's not quite ready for that. This camera, the functionality of my actual digital camera, is better than what the phone can provide."

But in three or four years after the introduction of that iPhone, the camera technology on the phones began to improve. Look what's happened to digital camera shipments. They have fallen by the wayside, really. I think about this, and I can't remember the last time, outside of a professional photographer, I've seen somebody using a digital camera—and this includes trips to Disney in the last year, and other family vacations. So the phone truly has replaced the digital camera, and it's replaced it for a whole lot of people.

On slide 13, we have a chart that depicts sales of Apple's digital music player, the iPod, which was introduced in 2002. Again, this was revolutionary in 2002 when it was introduced. I could spend a whole hour talking about how digital and mobile have completely revolutionized the music industry, but to keep us on pace here, I just want to reiterate that the mobile phone has completely disrupted the mp3 player market. In fact, the iPhone has completely replaced the iPod. They are now collectors' items—you can go out on eBay, and old iPods are truly being sold as collector's items. I'm even willing to guess that there are some 'tweens out there that have never even heard of an iPod, though they were introduced just some 16 years ago.

So mobile's replacement of certain technologies or other form factors has been swift, has been rapid, and—for those older form factors—has been pretty severe. And on slide 14, we're finally going to get to mobile payments, where the phones' impact to the payments space at the POS has been far from transformative to date. According to research from 451 Research, contactless mobile payments accounted for only approximately 1 percent of in-store retail sales in 2017. So I've been hearing, as I mentioned earlier, about mobile payments' transformative impact at the POS loud and often since 2010. And as the snippet from BI Intelligence suggests, usage has constantly lagged behind expectations. That highlighted passage I have on the right side of the slide—I'm willing to bet you could see that every year that BI Intelligence projected volumes. It has constantly lagged volumes.

And this has been going on, like I said, for a while. Each new year brings the promise we're going to see the mobile proximity payments break out. So before we get into reasons why maybe we haven't gotten there yet, what it could take to get us there, I thought it made sense to revisit a timeline of mobile payment products and providers. When we look at this, keep in mind again how long it took for debit to gain serious traction following those early pilots and early trials—but also keep in mind how quickly mobile has transformed other industries that we previously touched on.

So on slide 15, I've got a—with a caveat—not a completely detailed mobile payments timeline—perhaps there's not enough room on the page—but really more of the larger announcements, larger players, that have broken onto the scene and perhaps fallen off the scene as well in this timeframe. But talk of mobile proximity payments, I would say, in my mind, began almost immediately with the launch of the iPhone in 2007. Shortly thereafter, I'm sure many of you on the webinar today will remember the annual debates—will the next Apple iPhone include NFC or not? Every year, I remember anxiously awaiting to see would that be the case when Apple made their announcements.

But we saw the first real implementation of mobile payments in 2011, and this was the year, too, that we saw talk begin around an open platform wallet, Isis. So in 2011, we had merchants. Our merchant Starbucks launched their mobile payments. We had another company, LevelUp, who was bringing mobile payment to the point of sale—but again, those merchants would have to sign up for LevelUp, so it wasn't necessarily an open environment. But Isis came to the scene with announcements of an open environment where you could use your mobile phone with a particular card, at any merchant location that had an NFC reader. And things really started to heat up. People were really excited. I remember going to conferences where Isis was the keynote speaker. Everybody said, "Yes, we're finally here. Mobile is here."

But as you can see on the timeline, over the past seven years, there have been numerous other mobile payment platforms and wallets brought to the market. Merchants have brought their own to the market. A consortium of merchants have brought them to the market—financial institutions; telcos, as in the Isis or Softcard case, mobile handset manufacturers, third-party providers—and these people are using a variety of different technologies. As I mentioned, some of these have already failed within the seven years. Some never even really launched. And others have been bought or merged, and some have pivoted their strategies.

But what I can glean most from this timeline is that it doesn't appear to me that any one particular technology, be it QR codes or NFC, is exclusively winning out. Each has their advantages and disadvantages that I won't dive into today. But it's important to note that entities are going after this market using different technologies, and as you'll see in a few slides, that is definitely not the case in the hottest mobile market.

But before we get to that market, I wanted to go to slide 16, where you will see two different charts that depict usage for several different mobile wallets. And as you could expect where I've been going today, usage is quite low, and we will see that on these charts. On the left-hand side, you'll find the percentage of respondents to a survey by Pymnts.com and InfoScout that have tried a particular wallet in that given month. The scale on the bottom represents the month since the wallet was launched. On the chart on the right side, you'll find the percentage of respondents that used the wallet for their last transaction, where that particular wallet could be used—and that's a big caveat, because "wallet could be used"—these wallets can't be used everywhere. So what that chart is really getting at is, if the wallet could be used for that transaction, was it used for that transaction?

So on the left side, we're really capturing who's used the wallet at least once during the month, and the right side is trying to capture those who are the more dedicated users of the wallet. The merchant wallet that is included in this analysis, Walmart Pay, appears to be having the most success of the wallets, though you could make a case for all of these wallets that their usage trends, while small, are trending in a positive direction. But that trend, when you look beyond the one merchant wallet on here, the three plotted points on the bottom of the charts—while it is rising, I don't know if you could consider that rapidly rising.

But this only tells part of the story. When diving deeper into the Pymnts.com/InfoScout figures, perhaps the numbers look a bit more promising for these wallets. Nearly 25 percent of users that have Apple Pay set up on their iPhones used it for their last transaction where it was accepted. When you look at the other wallets, Walmart Pay comes in at approximately 24 percent, Samsung Pay a little north at 27 percent, and Android Pay, which is now GPay, at 17 percent.

So in general, about a quarter of the people who have set up these wallets on their phones are using them at the point of sale, and our proxy here is, was it used for your last transaction? I want to get excited about that number—again saying it looks promising—but then I think about your debit card or your credit card. What is the last instrument you used when you made your last transaction? If I was asked that question—or if we all on this webinar were asked that question—I would expect that credit cards and debit cards would fare significantly higher than that quarter. So again, I think the number is somewhat promising but it still doesn't jump off the page at you.

So what's driving this apathy in this market? I think for one: acceptance. Based on several reports that I've recently read, you could say about a third of the merchants accept wallets that support NFC, so these NFC-based wallets, where the merchant has an NFC reader and that NFC reader is actually turned on to accept an NFC payment—you're looking at about a third of the merchants in the marketplace. The merchant wallets that have had the most success—and Starbucks is the reigning success story here—measure that about 20 percent of their sales are using mobile proximity payments. Interestingly, another 10 percent or so are using a mobile "order-ahead" function.

But these specific merchant wallets are obviously only currently able to be accepted at that specific merchant. I can't use my Starbucks app to pay at McDonald's, for example. And then on the consumer side, there is, I just think, apathy and confusion all around why am I going to use this? Why am I going to use mobile? It hasn't really been discovered yet, but it's becoming pretty obvious that simply replacing a card form factor, be it a credit card or a debit card, with a mobile phone as a form factor isn't resonating with the consumers.

And if it is the form factor, and tapping an NFC phone or scanning a QR code is going to be the holy grail in payments, what happens when a majority of our cards become contactless? Which appears where we're headed, with recent announcements about contactless issuance on the rise, [and] several large issuers are beginning to issue contactless cards. So again, we're going to replace contactless cards with a phone? It's just not really resonating with me.

You also have an issue with the issuance. So perhaps not all financial institutions are allowing their cards to participate in all of these wallets. So while my financial institution might allow me to participate, say, in Samsung Pay and Apple Pay, my colleagues who bank with different financial institutions might not have that opportunity.

Then one final thing. Going back to my baseball example, how mobile really has changed me—I enjoy a cold beverage while at a baseball game, and interestingly enough, at SunTrust Park, the Braves' stadium, I can use an NFC phone to make that payment. But no matter how much gray hair I have, I'm still asked for an ID when I want to purchase that beverage. So what does that require? It requires me to pull out my wallet to show him that. So at that point in time, I've got a mobile phone in my pocket and my wallet in my hand—it's just really easy for me to use that card to make that purchase.

So not only are there challenges specific to the payment side, there are other influences that drive our usage of cards, and one of those other big factors is wallets. A lot of what we do, be it an insurance card, an ID card, has us reaching for our wallet, and then has us reaching to make a payment.

But as I mentioned earlier, not all markets are created equal. On slide 17 you'll find a very different story in China. According to the research firm eMarketer, 76 percent of Chinese smartphone users made a mobile point-of-sale purchase in 2017—and this compares to 25 percent of American users. According to iResearch, the Chinese mobile payments market in 2017 was \$15.4 trillion.

Looking at the U.S., Javelin Strategy & Research put mobile payments in 2017 at \$377 billion. That is an enormous gap. Chinese consumers and merchants are literally going wild over mobile proximity payments, and this hasn't been some long, transformative process. The two big players—Alipay was launched in 2009, and really dominated the market up until August of 2013, when WeChat Pay was launched. So we're talking in a less-than-10-year timeframe, mega numbers in China.

Why are merchants and consumers going wild over mobile in China? Because it has made payments so much easier. China is not as credit- and debit-centric as we are in the U.S. It was much more cash-based. These two mobile payment platforms, WeChat Pay and Alipay, are easy to use, easily available to anyone with a smartphone, and easy and inexpensive for merchants to accept. Basically, it requires a copy of a QR code.

Another interesting point, when you think about China and this mobile payment, is these payments came out of a social platform rather than financial services companies. Mobile proximity payments in China are displacing cash. What we're seeking in the United States is for mobile phones to displace credit and debit. Here in the U.S., credit and debit have been displacing cash for years. In China, it's been a completely, entirely different proposition.

So, then, what will it take for mobile proximity payments to take off here in the U.S.? On slide 18, I have a nice figure of a mousetrap, trying to identify how do you capture both merchants and consumers? I wish there was a two-sided mousetrap, but I couldn't find an image of one. And then, too, we have a crazy mouse problem at a lake house in our garage, so a two-sided mousetrap, if anybody knows of one, would be very useful as well.

But in my opinion, for mobile proximity to take off here in the U.S.—in a nutshell, for merchants, they're looking for increased net income. And via payments, this can come in several ways: simply top line growth—will mobile payments result in additional revenue that they currently aren't capturing via other payment methods, through higher ticket

spend, or perhaps through more frequent purchases through loyalty? Or it could come from bottom-line growth from a reduction in cost. Will mobile payments lower their cost of payments acceptance by being less expensive than their other forms of payments?

For consumers, I think it needs to be easy, as we've seen in China, easy to use. Plus there's got to be some other incentives that payment instruments aren't offering. Think back to when this country fell in love with credit cards. They offered a credit line, and then they came along with this whole rewards program, which the Supreme Court brought to the forefront again this week. Debit cards, as I touched on earlier, offered the consumer instant access to cash in accounts that they held with financial institutions, and that access didn't require them to visit a teller or an ATM. So what will mobile payments offer?

Interestingly, I did leave financial institutions off this slide, but if we consider financial institutions in the mix, I would put them in a similar spot as merchants—how can payments that they offer positively impact their bottom line, whether it's driving loyalty to their institution and to other products they offer, or whether it's specifically driving additional payment revenue that they're not capturing?

So in closing, on to slide 19. I opened today's webinar by stating that predicting the future is kind of a fool's game, which makes future proofing so difficult—and in this age of technology, even harder than ever in my opinion. I think that "future proofing" is actually a bit of a misleading "nomer," especially in the mobile proximity payments space. The better way to prepare for the future is to be nimble and agile rather than focused on a specific technology.

Technology changes rapidly. Mobile phones are transforming and truly have transformed much of what we do, so it's natural to think that that will happen in payments. But maybe some other technology that exists today will come along and conquer payments. Could it be wearables? I think of my experience at Disney with my family and the wearable device at Disney, and how wonderful of an experience that was.

Maybe there's some technology that we haven't even foreseen today. Remember my grandmother, and what I said about how she would be blown away by how people are consuming books today, and she had no clue any of that stuff would exist? So will it be mobile?

So now I'm going to put on my fool's hat—which this is, again, a dangerous proposition—but I just struggle to see mobile proximity payments gaining much traction as a replacement for cards. The form factor of a card is not really an issue for anybody, so why does it make sense for consumers and/or merchants to replace cards and card readers with phones and NFC readers, QR readers—and then have the payment ride that same rail?

The merchant-centric wallets and their prepaid card models do resonate with me, and I think there will be continued success in that space. But as we saw with debit, adoption of a payment can take a long time. It's ultimately going to require both the merchant side and consumer side to find value, and for somebody to seize that opportunity to offer that value to both parties.

I'm not quite ready to put a fork in mobile payments just yet. What I think needs to happen for mobile to catch on here in the U.S. is if it were to harness a new payment rail. Building new payment rails is challenging. There have been mobile payment providers in the past who have tried this and have failed. So I don't know what that new rail for mobile will be—maybe it'll be blockchain, maybe it'll be a real-time payments solution. I just don't know, but I do know that this new rail will need to provide benefits to both the merchants and consumers that today's rails aren't providing. I'm becoming more and more convinced by the day that building mobile off the credit and debit rails isn't going to move the needle much at all in payments, and future proofing your payments with mobile based off of these rails might have you looking like the parents back in the Memphis area who kept their kids home from school on that December 3rd day.

With that, I would be more than happy to answer any questions that might have come through at this point, Meredith.

Elmore: Thank you very much, Doug. And I do just want to remind everyone: feel free to submit those questions. You can use the "Ask Question" feature in the bottom left-hand corner of your webinar tool, or if you'd like to email, you can email us at rapid@stls.frb.org.

And I know we do have some questions coming in, so let's go ahead and get started. So the legacy technology—how does this affect that difference in movement across geographies—for example, the United States versus China?

King: So if I'm understanding correctly, it's—I believe we're looking at, how would that transform these technologies between the different markets? It's interesting because the two large players in China, WeChat Pay and Alipay, are actually beginning to make their way to the U.S. Again, that's for those Chinese consumers who are traveling here. So you think about those two companies, and who would be similar here and to the U.S. and perhaps could play that role. I'm not saying these people will be winners or losers, or they could be as successful, but what those two companies or organizations or entities in China provided was an enormous user base that was highly active, and it's not a financial institution.

So just think for yourself who could that be here in the U.S. There's obviously prominent names that come up to speed, but if you think of those FANG stocks, perhaps the "F" and the "G" in the FANG stocks could play a similar role, could try to do something that Alipay and WeChat Pay have done. Will they? I have no way of knowing that. But again, as you think of the legacy technologies or the difference, if it's not coming from those legacy technology players here in the U.S., then I think you've got to look at those people who have that large user base and a whole lot of information on those users.

Elmore: OK, thank you very much. So are mobile payments different from a credit or a debit card transaction?

King: So they're riding on the same rails for the most part, but there are differences. My colleague Dave Lott has spent a lot of time talking about the differences, the security aspects that mobile payments bring, the tokenization that they bring—so there are, we'll call them "nuanced differences." I think everyone in the Risk Forum will agree that these tokenized, mobile-based payments are more secure than an actual credit or debit card payment. But again, at the end of the day, the mobile is just a form factor replacing the card, but it's going down the payment rail, so that messaging, while there could be tokens involved, it's still using that same debit or credit rail depending on what kind of card is loaded into that phone or that wallet. So for the security aspect—I think mobile has lots of advantages. But at the end of the day, it is riding the same rail.

Elmore: Thanks for that clarification. So are we in the United States and Western Europe focusing on replacing our leather wallet with our mobile phone mobile wallet?

King: That's a fascinating topic. Unfortunately, I focus really in the payments space. But you know, I have heard talk out there. We have all—I shouldn't say "we"—at least I can open my own wallet, and I have many other things in my wallet besides payment instruments. Two that come top of mind immediately, which I've touched on earlier, are

our identification documents and health insurance documents. While I think a future world, should those documents become electronified, and yes, I can have a valid ID on my phone. I'm not a speeder, but in the event that I got pulled over and a police officer would accept some kind of identification via my phone, or other than a card that was in my wallet, I think that would be awesome and that could help move the needle more on this mobile payments thing.

But again, I can't speak where we are with these other industries in moving to the electronification of those documents or those other cards outside of the payments space, but it is a fascinating area to look at.

Elmore: I have to agree. I have found this quite fascinating. So with the mobile phone versus wearables—what would make wearable a more interesting approach?

King: I've racked this question in my head, and what I come to is, my wearables are always available. I know people, how many times they check their phone, how many times do they touch their phone. And I look at people's patterns. I wear a watch—that watch is always available. I don't keep that watch in my pocket; it's on my wrist. We've seen pilots with rings. My wedding band stays on my finger, my college ring stays on my finger. So these things, these wearables, are always out there and available. While we like to think the phone is always out there and available, that's not always the case.

I would say the one case where that would be true for the phone would be in the mobile arena. If I go stand at a MARTA station in Atlanta, I would say 75 to 80 percent of the people I see as they're approaching that turnstile have their phone in hand. They're using a card to get through that turnstile, but that phone's readily available. Take that same scenario, for instance, to the grocery store. While I might use my phone while I go through the store to shop, I generally put it away when I'm at the checkout counter. You even see, in many shops, at the checkout counter, there will be a sign, "Please be off your phone. Don't use your phone." So that phone, when it's actually time to make that purchase, is not always readily available, whereas when I think about wearables, I think about my experience at that amusement park—that wearable was always available front and center, just like my watch or just like a ring is. So I think there is a nuanced difference there.

Elmore: Okay, thank you. And then I did want to ask a few clarifying questions. Could you just go over quickly again what is meant by "future proofing?"

King: So future proofing is being able to have your payments future-proof, for the future. So if two years from now, whatever the greatest payments, or what's being used that you're ready for that you've implemented that—and I say the challenge with that is, we don't know what's going to be there in two years, so that notion of having your POS or having your cards or your payments instrument future proofed is extremely difficult and can be a costly proposition. The notion around being nimble and quick to change, rather than trying to plan what we don't know {and is} yet to come, is a very, very challenging proposition.

Elmore: OK, thank you. I know we are running short on time, but I do at least want to get in at least one more question. So can you explain whether or not this legacy technology, like the network brands and infrastructure, are impeding change?

King: I don't know. I can't really comment on if they're impeding change. Obviously, people have stakes in this—and in any industry, whether it be payments, automotive—there are going to be legacy players and new players coming, and those legacy players want to stay as viable players. So if I'm offering a solution today which I am worried could fall out of favor in the future, then I think it makes sense that I would do whatever I could to keep that in the market or keep that to be a prominent player. Oftentimes, that's going to require change, so I do feel like we have seen legacy players in this market—I'm not going to say "impede," but trying to be nimble and move as consumer preferences and as merchants' needs are changing.

Elmore: OK, thank you very much. I know we are here at the top of the hour, so at this time, I do want to thank Doug for sharing all of this time and expertise with us, and also [say] thank you to all of our participants who joined us today and got those questions submitted. Go ahead and keep submitting your questions, and I will make sure that those get over to Doug after today's webinar.

Please remember, you will be receiving a survey link via email here shortly. Please just take a few minutes of your time and let us know how we're doing.

Thank you for joining us; this concludes today's webinar. Have a great day.

END

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