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ACIW - ACI Worldwide Inc Analyst Day

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## PRESENTATION

**John Kraft** - *ACI Worldwide, Inc. - VP of IR & Strategic Analysis*

Welcome. Thank you all for making the trip to Naples, and thank you all for listening on the webcast. For those of you I haven't met, my name is John Kraft, I run investor relations for ACI. We are very excited to have you here today, and not just because we had a great quarter last week showing improving revenue and margins but because we've got a great long-term story to tell. And we've been spending a lot of time trying to improve how we tell it. It has and always been the easiest story to understand. One of the things that we've done is create the 6-4-2-1 framework. You'll hear more about that today, but that's the 6 solution areas that we sell, the 4 segments that we sell to, the 2 delivery options we provide, all under the 1 ACI umbrella.

Running through the agenda quickly, we're going to start off with Phil Heasley, our President and CEO, is going to give us some opening remarks; Scott Behrens, our Financial -- Chief Financial Officer, is going to give us a financial update; Jeremy Wilmot will tell us more about the 6-4-2-1 framework as well as provide us some strategy comments on how we're going to grow; Mike Braatz will tell us more about our UP solution strategy. And then we'll have a break. It will be roughly 10:00. It will be 10, 15 minutes depending on how much time we've got. And after that, we'll have Craig Saks, our COO, to talk about executing the strategy along with Mandy Killam and Dan Frate, our 2 P&L leaders, joined by several customers and partners. And then at that point, we'll open it up for Q&A with the executive team, and we hope you enjoy.



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With that, I'd like to hand it over to Phil.

**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

So good morning, everyone. On behalf of the whole ACI -- One ACI team, I want to thank you for coming today. And this is probably my favorite external meeting of the year because it allows us to speak one on many, and it allows us to keep to our agenda. We have a lot to cover today in terms of taking you through the 6-4-2-1 model, and we'll review lot of our key accomplishments and our important updates. Unfortunately -- or fortunately, I guess, is one way you might think about it -- we're not going to be able to cover everything because we've had a very productive year, and we would run against your patience in terms of taking you through everything that we want to cover.

I always -- tradition has it, I always like to start with our vision. And I think our vision is very important in terms of how we frame this day. It intones that we have a concise purpose as a company and that, that purpose and that transformation is very, very core to that purpose. And to say [well, actually we're] in the transformation business and we're in the payments business is almost an oxymoron because transformation and payments can never take a quantum leap. In order for payments to transform, you have to do it in a step-by-step-by-step basis. And the what of payments hardly ever changes, right? You think about what if, but the how of payments changes very constantly.

Every year, we update this chart in terms of the journey and the transformation journey. And if I were to take this time line and move it really, really far back, let's say, let's look back 2,500 years, and we can see that the Greeks had already a solid payment system in place. As a matter of fact, today's payment system doesn't work very differently than the way the Greeks put the commercial payment system in place whether -- if the coin was real, it was about authentication, right? Is it yours to spend? It was about fraud, right? Is it a real exchange that takes place? So if you think about today where there may have been one point to sale, one end point, and 3 or 4 elements of service in terms of what that payment was, today, we, ACI, well, we have 2,000 services that -- 2,000-plus services that we offer to the marketplace in their ability to execute a payment. And at this point, we have over 13,000 end points by which we allow a payment to either initiate, complete or both.

What we bring to the market that I think distinguishes us from almost everyone else are the fact that we don't believe in this notion anymore. I think 2 or 3 years ago I put up a very simple graphic that showed payments was a swimming pool and there being all these swim lanes. And because of the way automation, because of hardware was the -- is what birthed software, and software is what birthed the modern payments and whatnot, we had all these theories of swim lanes so that how a payment was done was more a function of a swim lane that you were in than what the actual purpose was and/or purpose is in the marketplace.

One of the most difficult questions I think people associate with ACI or invest in ACI have is, well, what do those guys do, right? And some people will start talking about ATMs, other people will start talking about wire transfer, other people will start talking about debit switching, other people will talk about credit card authorizations. And the truth of the matter is, is that our core technology is the enablement of any payment to take place against any defined purpose. We're not the payment, right, but we are the structure, we are the services, we provide the end points that allowed that to take place. And up until this meeting -- and that's why this meeting is -- I'm going to keep my comments very short and let us get into the meat -- but why this meeting was so important to me today is that we have been talking for 6, 7, 8 years in terms of our Analyst Meeting about we're going to build this and we're going to build that and we're going to make this orchestration take place and we've gotten this far along and whatnot. Today, we now use the motto: any payment, every possibility.

So if you look at the new pieces of business that we've done around the world and what we are enabling and whatnot, we're no longer saying, well, plug in this gizmo, and it will do this percent of what you're trying to get done, we can now go to Malaysia or we can now work with the -- in Australia or we can now be working -- or we're going to be in Mongolia and say what is it that you're trying to do in terms of executing a payment system, and we will build with you that payment system. So it's very interesting. So we're into branding. Some people will say, "Are you guys in competition with Visa, Mastercard?" No, we're not a branding entity. We're not -- we're a facilitation entity, and we're going give you the core pieces that you need to get it done. And we're going to do it in a way that provides 2 very different elements that I would say that none of our competition has. I think we have a [set] of what we call NFRs, nonfunctional requirements, so that when we build something, its availability, its scalability, its security, there are certain elements in terms of that, that nobody is going to compete with us.



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Now if you have has some low level, low volume where those NFRs are not critical, well then we have a hard time competing. If you really want to build some industrial strength, you want to build a means to do payments, we're the right guys to do it. And then the other one is payment orchestration. You hear about all different things, you hear of hubs where you link this and this together and whatnot, that is -- you can orchestrate that, but that's not orchestration. Orchestration is the ability to say, well, what is it that I'm trying to build and how do I connect the different pieces and how do I allow for choice along the way to say does it go route A, does it go route B or do I make a decision in between? And I think those two things and that differentiation is really allowing us to win in the marketplace today and win in a real way.

What we're going to go over, most of what you're going to hear today is about the progress we've made with any payment, every possibility. And we're going to begin with the dual distribution models and why they're so important to our economic success, but they're also important to our focus and ability to execute for our growing customer base. And then we're going to review markets, market growth and the opportunities that are blossoming out there in terms of challenges that we can solve. And then we're going to also share with you some market validation. We received recently some very good 10 years of hard work, integrating 13 companies and their services to provide an effective set of outputs, effective means of doing business are being recognized in the marketplace now both on the customer side as well as some of the business analyst side. And we're very proud of where we've taken that. So I hope it's a productive day.

And I'm going to hand it over to Scott Behrens right now, and we're going to go through this in some real detail. Thank you very much.

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**Scott W. Behrens** - ACI Worldwide, Inc. - Senior EVP & CFO

Thank you. Thanks, Phil, and good morning, everyone. What I'm going to do this morning is spend -- in the framework of 6-4-2-1, spend a little bit of time talking about our 2 P&L business models, talk about what are some of the key revenue and profitability growth drivers, how that contributes to our growth in free cash flow, talk a little bit about what we've used that free cash flow for historically and talk about -- a little bit about what kind of near term and medium term uses of our cash flow will be. And then I'll hand it over to Jeremy to go into more in depth around the 6-4-2-1, the market growth opportunity that we're seeing and go into some more detail around our 4 customer segments.

So kicking off. I think it was this time last year at Analyst Day that we really rolled out our 2 P&L business model for the first time. The larger of the 2, our ACI On Premise business, 60% of our revenue. This P&L is not your traditional legacy license software business. We have spent a tremendous amount of time and money, as Phil talked about over the years, really modernizing our technology. And many of you are familiar with, who followed us for some time, our base 24 product. But we have invested in modernization of that technology. And it -- I would look at our On Premise business as a real transformational success story. In late 2016, we rolled out what we called the RPS program. That's the retail payment solution program. And since then -- so now we're in year 3, since then, nearly 100% of our customers have renewed and adopted the new technology and have done so with an increase in total contract value of anywhere between 25% and 30%. Second area of -- and I think it's -- we're going to -- Mike Braatz is going to talk more about it later today. And I think what's really exciting is the real-time payment solution, we call it RTPS, but it is our solution to serve whether it's immediate payments, real-time payments, faster payments type schemes that you're seeing mandated throughout the world. And Mike's going to go into more detail on that.

This P&L has 50% margins that's fully loaded. It's still a growth driver, very healthy margins. On the ACI On Demand side, that's 40% of our business. Here is where we have invested a tremendous amount of dollars in time -- in recent years in terms of building out single-instant, multi-tenancy platform capabilities. That, as well as the fixed infrastructure cost, cybersecurity, we are -- this is the P&L that's really going to drive margin expansion over the next couple of years. We're targeting Rule of 40. And that is the combination of revenue growth and EBITDA margin percentage, combined, targeting 40. But I'd say that as we look out over the next 3 or 5 years, that's not going to be a straight line, I'd say to the Rule of 40. I think in 2019 and even in 2020, I think we're going to see an accelerated move towards the Rule of 40. So the combination of the -- really, the margin expansion and growth in these 2 P&Ls has delivered over the last 3 years a 300 basis point improvement in EBITDA margins. And we put out 2019 and 2020 guidance as well, but it's -- I would look at those 2 years and say we're probably going to exceed the 100 basis point improvement in the next couple of years, primarily driven by the growth in AOD margins.

And EBITDA has delivered significant cash flow. Over the last -- going back to 2015, we've been very disciplined with our use of free cash flow. As you can see 1/3 spent on acquisition, 1/3 on share repurchases and another 1/3 on debt repayment. And then we've been very disciplined about buying back our stock, we've been very disciplined buyers of assets. We have a very solid balance sheet. Not only have we seen debt decline over

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the last few years, our -- the combination of lower debt and higher EBITDA is driving down our leverage ratio. We've targeted, as you can see, the red line, we target 2.5x or below that today. And if you look at -- one thing to point out on the debt over the last several years, not only we declined in debt but, in the third quarter, we refinanced our bonds, lower rate, increased the size from \$300 million to \$400 million and extended the tenure in outer years. So the orange bar is essentially kind of where we are today, \$700 million in debt, \$400 million long-term, \$300 million is term debt, and so that really creates essentially a permanent layer of debt at least over the next 5 years.

And I don't think we would -- it's not likely that we would repay down the term debt any sooner than its natural amortization. We've got about -- the next couple of years, I think we're at \$25 million of term debt amortization. So the real focus, I think in the near term use of cash, free cash flow is going to be on disciplined share buybacks and accretive acquisitions.

2018 guidance. We just upped our guidance last week. 2019 and 2020, I think, what Q3 did in many respects is it validated 2019 and 2020. We outperformed in Q3. We raised our guidance for the year, really sets us up nicely for 2019 and 2020 EBITDA growth.

So in 5-year targets, these look familiar, high single-digit, new bookings growth should drive organic revenue growth in the mid- to upper-single digits. I think next year, we should see the On Premise business probably in that mid-single-digit area with AOD in the high single-digits. As I mentioned, adjusted EBITDA, probably going to see in the near term 100-plus basis point improvement as we really start to see the margin generation power of our AOD investment. Strong free cash flow growth and target leverage of 2.5x.

And just in summary, we have a very long-standing, blue-chip customer base. Very sticky once the products are installed, very high renewal rates, large contractual backlog. We have \$4-plus billion in 5-year backlog, gives us very good visibility, very stable base of future revenue. Transaction-based, our contracts whether they're license software or they're on demand are both -- they're both transaction-based pricing. So we're positioned very well for the secular growth in electronic payments but probably, more importantly, positioned very well from capabilities as it relates to the emerging trends, immediate payments and e-commerce. And finally, just high-margin software model and the platform model, we're expecting to begin to really generate margin and cash flow improvement.

So with that, I'll hand it over to Jeremy to go through our market growth opportunities. Thank you.

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### **Jeremy Miles Marius Wilmot** - ACI Worldwide, Inc. - Executive VP and Chief Marketing & Revenue Officer

Thank you. Thanks, Scott. Good morning, everybody. My name is Jeremy Wilmot, and I'm going to talk about the growth story for ACI. I'm a relatively new face to many people who have been at these conferences for many years. And thank you for your long investments in ACI. I actually -- even though I'm relatively new here, I joined ACI at the end of last century and had various field P&L geographical leadership positions in Africa, Europe, Asia Pacific and in the Americas as well before taking on my new role now leading marketing and the revenue management function over the last couple of years.

So I want to talk about our growth story in the years ahead. What do we plan to do in order to increase our year-on-year organic revenue growth rates? Three things I'm going to do: firstly, I want to talk about the industry as a backdrop for our growth story; secondly is I want to talk about how we view our market opportunity and how we measure ourselves against our growth ambitions; and then thirdly, what are the top line strategies that we're going to be using as we grow over the next few years.

So let's start off with the industry. Any payment, every possibility. You heard Phil talk about that, we refer to that as our tagline internally. It is the essence of what will drive our growth at higher-than-market rates. And very simply, in a sense, we make fast, simple, secure payments, and we're going to make them around the world by connecting more ways to pay with more payment capabilities than any other provider. That, in a sense, simplifies what ACI does, answers the question to people in the industry.

From an industry trend perspective, you'll see in the middle, at the top there, billions not millions. And this is something that really drives our investment thinking as we go forward. What we mean by this is that we need to be thinking about processing billions of transactions a week and, at the end of our planning horizon, a billion transactions a day in certain markets. And that's being driven by real-time payments. It's being driven



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by noncard digitized payments and being driven by e-commerce and the ease with which merchants and corporates are going to be able to accept payments.

We're also seeing the rise of the intermediary. So the intermediary today, barriers of entry have dropped, open banking regulation around the world, has enabled new players to disrupt and enter the payments marketplace. The availability of open source and using that in the cloud and that becoming a mainstream capability today means that many of these intermediaries can come to market very fast, and they can also come to market at a price point that is significantly below the current industry players. So the intermediary really has risen and is a big part of where payments will grow.

And then lastly, Payments Intelligence. And Payments Intelligence is used today primarily to combat fraud. But with the billions versus millions, this becomes even more important, and that intelligence needs to be used proactively in terms of understanding how customers behave today and how customers will behave in the future, and then to model services, payment services around that. So that's the backdrop for what's happening in the industry today.

Let's transition now to talk about our addressable market opportunity and how we measure that. 3.6 trillion transactions. In 5 years' time, that's what we see as our addressable market, 3.6 trillion transactions. A transaction -- one transaction does not equal one payment. So one payment can equal multiple transactions. You walk in to a merchant, the merchant processes, acquires that transaction, the transaction goes to an acquiring bank, it goes to 1 or 2 or, if the merchant's unlucky, 3 intermediaries before it then hits the source of good funds at the issuer bank. So one payment, can be 4 or 5 transactions. This is a count of the transaction, 3.6 trillion transactions in 2023 that ACI can go after.

Decomposing that 3.6 trillion number into a 60-40 split roughly, 60% of that 3.6 trillion can be addressed today with the existing solutions that we have today through the existing market segments that we target today. That's 2.1 trillion transactions with no further product investment with what we have selling off the truck that we can go after today. The balance of the 40%, the 1.5 trillion transactions, will be investments that we make over the next 5 years organically and inorganically that we believe that we can capture this 1.5 trillion as well or compete in the 1.5 trillion as well. So that's how we decompose it. Remember these are numbers that are predictions in 5 years' time of where we're going to be.

So let's look at today the investment that we've made over the past few years, the existing solutions we have, the existing segments, the 2.1 trillion. And when we look at the 2.1 trillion and we convert it into today, 2018, that converts to about 1.3 trillion transactions. ACI's share of the 1.3 trillion transactions is in the high-teens to low-20s percentage share. If you take the midpoint of that, 20% is about 250 billion, 260 billion transactions that ACI's software will process either in the license model or in the AOD model.

In 5 years' time, as the addressable market grows from 1.3 trillion to 2.1 trillion, we expect to increase our share to the low 20s to the mid-20s. Take the midpoint of that, and you get 22%. 22% of 2.1, approximately \$450 billion, so about an additional 200 billion transactions that we believe that we can win over the next 5 years.

And you'll see in the bottom of the chart there, the split in the addressable market between corporates, merchants, intermediaries and banks, very different volume levels -- transaction volume levels that you see there, and ACI will grow at different rates in those different segments. And I'll talk a little bit about that.

So I've talked about the transactions. But without understanding the price per transaction, it's very hard to understand what our growth story is. So let's talk about how we monetize the transaction opportunity at ACI. So on the top row, corporate, merchants banks, intermediaries. Those are our 4 target segments. On the second row is the type of payments that we are focusing on. And remember, I said one payments equals multiple transactions, so you need to understand the payment type to understand the transaction opportunity.

In the corporate and merchants space, C2B, consumer-to-business, payments and the payment processing within corporates or merchants. In the bank space, which is really the access to good funds, the source of the funds, the DDA account or the credit, and it's providing access to that source of good funds. And then intermediaries plays in a number of different areas. So it actually ranges across the sub-\$.01 through to the \$1. In the corporate space, looking at the price per transaction, we are able to demand a higher price because we provide a higher level of service in terms of the value we provide. End-to-end payment processing, we'll actually receive the payment, we'll hold the payment and we'll disburse the payment.





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We'll take the risk around that, we'll provide consumer call center support. So it's really end-to-end that we provide on a bill payment basis focused today on the U.S. So \$0.20 to \$1 is the range depending on what level of service, what level of risk that we take in that space.

In the merchant space, consumer-to-business, so all of us in this room shopping online and in-store. This is in-store. At the point-of-sale using our credit/debit card, whether that's physically with the card or through a mobile device but also, increasingly, it is noncard digital transactions in-store. And then online, using the card as well but also using noncard digitized payment online, whether it's through mobile or your desktop or tablet or whatever are the new online access device that actually comes. And depending on the range, so if we were providing full omni-channel in-store/out-of-store, card/noncard, securely wraps, that can be up to \$0.07. And depending on which piece or silo of that value chain, it could be down to \$0.01. So \$0.01 to \$0.07 in the merchant space is typically where we are.

In the bank space and of the \$250 billion to \$260 billion transactions, a large proportion of that comes from the banks and the intermediaries, but this is where the -- we are the gateway to the funds. So we are the gateway to the back-end. And typically, we are sub-\$0.01. And it really depends on how many transactions you're processing in terms of how far below sub-\$0.01 you are. And you can be very substantially below sub-\$0.01 in the largest players in the world.

And then in the intermediaries, as I said, it's sub-\$0.01 all the way up to \$1 depending on what these intermediaries are doing. But typically, they are helping to provide a niche service into a merchant or into a corporate, and so they'll be looking at the pricing levels that we see here and we'll be providing a distribution margin for them, or they'll actually be processing at the banks in some instances as well.

So our pricing strategy is that we will commit to our customers that as you grow your volume, with ACI software, your price per transaction will drop. So we have a long-term story to them, and we will make them more and more efficient, not only in terms of the ACI software cost but also in terms of the infrastructure cost that ACI runs on, the database software, the operating system software, the hardware, becoming increasingly commoditized in the open source world and moving to the cloud. So actually the price drop as you are moving up the technology line and as you are increasing the volume is very substantial when you include the total cost of ownership of the entire stack. That's the proposition that we make and value -- and our value-based pricing strategy focuses on that, and we have a dedicated team who looks at that.

In the long term, over the strategic planning horizon and beyond, we expect, as I've just talked about, price compression in electronic payments as it moves to the billions and the trillions. So we need to consistently be bringing that down for our customers, which will require, as Mike Braatz will talk about, highly sophisticated architecture of intellectual property and our ability to really take cost out and to leverage low-cost infrastructure that's available in the marketplace. So that's our approach to monetizing that transaction, the 3.1 trillion (sic) [2.1 trillion], and we'll continue to execute on this monetization of transactions.

So now I'm going to talk about our strategy. So I've talked about industry, I've talked about our addressable market, our value-based pricing approach. What's our strategy? This picture actually encapsulates our entire strategy: 6 software-based payment solutions to meet the needs of our 4 market segments through 2 deployment models, leveraging 1 piece of intellectual property that is interconnected and delivered by One ACI team. And what I want to focus on is the 6 and the 4. I'm here to talk to you about the 4. So the merchants, the corporates, the banks and the intermediaries. And I want to focus in on each of those. But to do that, I have to reference the 6 that Mike is going to be talking about. And the 6 solutions are here in the middle, 4 payment solutions: bill payments, merchant payments, retail payments, real-time payments. The digital channel technology that assists us to onboard B2B payments and the Payments Intelligence portfolio that is the security wrapper around all of this. But as importantly, it's the predictor of customer behavior to improve customer experience.

So those are our 6 solutions to our 4 segments. And let me start with talking about banks. Real-time payments, open banking, the shift to cloud and open source, it's really a perfect storm for the banks. And ACI is fabulously positioned to take advantage of that opportunity and to win in that marketplace. For decades, we have been the leader of card-based payments in the largest markets in the world with the largest banks all over the world. And we have now provided a package, a bundle, to the marketplace called RPS that enables them to leverage that infrastructure and leverage the scale and efficiency they're getting from that infrastructure to move to noncard and digitized payments and to take advantage of immediate payments and open banking in the cloud whilst they do that. And that's -- it's -- we're absolutely very well placed in terms of taking the increasing volume of the top 500 banks who are currently customers of ours today. In addition to that, in the real-time gross settlement area, 70% of Fedwire transfers today run on ACI software here in the U.S. And we've taken a similar approach in terms of adding new assets around immediate payments.



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And cloud open source can also enable those customers to leverage that infrastructure to be able to process new transactions. So we're really very well positioned in this space to protect and grow, but we're very well positioned to land and expand in terms of leveraging these new assets that we have in a new logo, highly competitive, new customer win space as well. And we plan to do that with challenger banks and also with large banks who have the ambition to really start modernizing away from their in-house, internally developed system.

We're going to focus our digital channel's ambitions on mid-tier banks in the U.S. And the payment intelligent piece that you're going to see as a sort of golden thread that goes through all of what we're doing is key for the banks because the heightened requirement for cybersecurity is there as volumes grow and as the move to digitized payments accelerates. So that's banks.

Merchants and corporates. The line between merchants and corporates, the merchant who typically is selling other people's goods, the corporate who's selling their own goods, the merchant who gets paid at the point-of-sale, a corporate who gets paid later, is blurring. So we see corporates today who are looking to be paid immediately, and we see merchants who are enabling pay later. So that's why I put them together here. ACI, over the last 6 years, between 2013 and 2018, has invested near on \$1 billion in this segment. That's through acquisitions, through product investment and through distribution investment. So we see this as a big opportunity of growth for us. And when we decompose that down and look at the merchants, e-commerce is critical. The need to actually have one view at the customer omni-channel is also key. When we look at corporates, the ability to accept those C2B payments, to accept noncard C2B payments, so here in the U.S., to be able to pay with Zelle for your bills and to do that in an automated, seamless, easy way, which it certainly isn't today.

So these are some of the drivers that we're seeing in these segments. And on the right hand side, and you all have the deck, that's a list of where we're going to focus. You see e-commerce at the top of the list there, very focused in terms of our bill payments business. And Payments Intelligence is, again, a key theme in this particular segment.

So lastly, intermediaries. This large space, it was half of the addressable market that I showed you at the beginning of this presentation. Barriers to entry have really dropped. And we are also seeing a real demand in the marketplace that's currently driven by inefficient processes, lackluster customer experience and new intermediaries able to come in and to disrupt particular silos in the space. Through platform offerings, including ACIs, they are able to achieve the scale that larger players are only achieving. And that's why they can achieve very good price points for their customers, and there is no lack of investment dollars or quality assets in the intermediary space. So a big focus for us. It's been a big part of our business historically at ACI, where we have provided software and a license basis to the biggest payment processes in the world and continue to do so, and they are working with us in order to continue that in the digitized world. And we are winning new entrants in terms of PSPs, payment service providers, MSPs, fintechs who are coming into the space as well. So this is both a protect-and-grow, land-and-expand strategy for us. And you see the Payments Intelligence piece wrapper around that as well.

So that's the run-through very briefly in terms of each segment and where we think we're going to win. But overall, why are we confident in our plan and why do we believe we can win? We have a very strong brand that's built on a reputation of processing a 1/5 of the world's transactions. We have what we believe is the strongest intellectual property available for payments in the world that's used by the biggest players in the world and also the smaller innovation players. And we have the most talented and concentrated team of payment professionals on the planet. So that's why we truly believe in this strategic plan.

And thank you very much for listening. I'm going to now pass on to Mike Braatz to talk about the 6 solutions.

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**Mike Braatz** - ACI Worldwide, Inc. - Chief Solutions Officer

Thank you. Great. Hi, everybody. Great to be here today. Jeremy is a hard act to follow. Not only did he do what I think is a great job articulating the market opportunity and how we're approaching it, but he sound so good doing it, too. So back to my Midwest accent. So for those of you who don't know me, again, my name is Mike Braatz. The position -- the role that I'm in, which is a new role for me this year, is Chief Solutions officer. Really, what my job is to think about our long-term product and solution strategy, where are we going to be investing, where are we going to be placing our bets, how do we optimize our portfolio of 6 solutions to take full advantage of the opportunity that Jeremy just talked about.





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And what I want to talk to you today about are the topics you see here. First of all, I want to give you some perspective on how we think about solutions. I'm going to build on some of the comments that Phil made. I want to give you an update on our Payments Intelligence strategy. We've hit on it in the various presentations you've seen. For those of you who are here last year, we talked about our next-generation Payments Intelligence platform, the project that was underway at the time but we're starting to roll it into the market. We're starting to see customer results. I want to give you that update. And then I want to talk about the investments we're making on the 2 next areas that we see as big drivers of the millions to billions opportunity that Jeremy talked about. And that's e-commerce and, embedded within that, mobile commerce and, of course, real-time payments and the global opportunity there. And then I'm going to do a demo at the end, a live product demo, and I'm going to bring e-commerce in realtime together as well as an omni-channel scenario for you. And I'll talk more about that in a minute. So lots to cover in the next 35 to 40 minutes. So let's get to it.

You saw this slide earlier with Jeremy. Phil and Jeremy both covered the 6-4-2-1 and how those components come together to form our strategy. And I'm really focused on those 6 in the middle, right. But not 6 silos, really, 6 as a portfolio to capitalize on the market opportunity. I want to remind, again, for those of you who were here last year, last year, we spent a fair amount of time covering our digital channel strategy. So this is our corporate online banking and cash management solution. We actually did a demo of our new platform in that area. That is still very important, very strategic for us. But this year, we're going to focus on some of the other areas we didn't go into as deep last year. And that's, of course, e-commerce and real-time payments. And hopefully, that will give you a full sense between some of the materials from last year and this year, really all 6 of our areas.

So let's start by talking about solutions for a minute and dive a little deeper on topics that were covered earlier. People asked me, "Mike, how do you define a Chief Solutions Officer? How do you define solutions at ACI. Is it just how you stitch together your various products?" No, actually it's -- I think of our solutions as having fundamental building blocks. For those of you who are into diet and nutrition, there is this concept in food called macros, right? Every food we consume is made up of either fat, protein or carbohydrate. Those are the macros of all the foods, really important for nutrition. Well, there's macros in payments, too, right? And the macros in payments are services. And Phil talked a little bit about services. And thousands of services that we can put together to enable a payment. And that's things as basic but important as authorization, authentication, tokenization, more advanced capabilities and services like fraud screening, some of the loyalty and rewards when you get into the merchant space, all those things are the services.

The second fundamental building block of a payment solution is end points, right? These are all the ways to pay, the connections to devices, banks, acquirers, point-of-sale devices, mobile devices, ATMs, you name it. All of the things where a payment can start or end, those are end points. And we have a very broad portfolio and we can combine those services and those end points. And the way we do that is through orchestration. And then underlying all of that is our nonfunctional requirements: scalability, security, availability. And when you combine those things together, and you combine them to serve specific market needs in our various segments, that's how we think about solutions. And more and more, our solutions are going to be prepackaged combinations of end point services and NFRs to solve customer problems. And more and more, as Jeremy mentioned, we're going to be deploying that on cloud and open technologies. They're going to drive down cost, increase efficiency for our customers and really change the game in terms of the economics of running and managing a payment system as part of their business. And that's how we capitalize on the billions not millions opportunity.

I'm stealing a couple of slides from Jeremy, I'm going to steal this one, too. And I want to repeat it because I want to use what's going on at the market trend and driver level to set up how we're making investments to capitalize on this and link our solution strategy to the market opportunity. So Payments Intelligence. This is one where we are unlocking the value of the payments data that flows through ACI's software. Our next-gen Payments Intelligence project is really our big investment to take advantage of that opportunity. And it starts with fraud, but it goes beyond. And I'll talk about that in a bit. Card-based payments are transforming, right? Mostly, the transformation is happening by converting card-present payments to e-commerce, mobile and other digital means and those -- and frankly, on a global basis, at a market as big as this is, I would say that, that is really an explosive growth opportunity. And then finally, you have noncard payments, right, so in the form of alternative payments and all of the real-time payment methods and schemes that are popping up around the world. And those are the things I'm going to really get into as we talk more about our solutions.

But let's start with the update on Payments Intelligence. As I said, last year, we kind of told you, hey, here's this project we've been working on. We're going to be rolling it out in 2018. And here we are near the end of 2018, and we have been rolling it out and with good success. And we're seeing good results, and I'll get into those results.



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To talk about Payments Intelligence, I want to make an analogy. So -- and I want to make an analogy of the car. The car -- the automobile industry. So several years ago, we started to see collision avoidance technology show up in our cars, right? You're backing out of your garage or your driveway, and your car beeps at you, so you don't run into your recycling bin or somebody walking on the sidewalk. They developed technologies and sensors and the algorithms to support it to help you from bumping into things, collision avoidance. It got more advanced, right? All of a sudden, a few years later, you're driving down the road, you've got technology in your car that helps you avoid swerving into another lane or lets you know when a car is coming up beside you. It's getting more advanced. But where is that headed? Now we have self-driving cars. Basically, the same technology as it's evolved, as it's matured, what started out as a pretty simple defensive mechanism, don't hit the kid riding the bike behind your car, is now allowing us to have self-driving cars. And the analogy to Payments Intelligence is all of the data that flows through our systems, we've gotten very good at leveraging that data to stop fraud. Defensive mechanism, right? And that's evolving, and it's maturing. It used to be very rules-based. We can apply a business rule. If we see this behavior, stop it. It's gotten advanced. And now we have machine learning and artificial intelligence being applied to all of that data. We're able to gather more and more varied types of data. And fraud detection has evolved to machine learning and advanced analytics, but it's now evolved into behavioral profiling. And we can use the behaviors to -- certainly, we can use it to stop fraud. But we can also begin to use it to do other value-added things for our customers in the forms of payment services around intelligent payment routing, intelligent proactive cash management for our corporate customers. There's a wide variety of use cases that we're going to be able to use this data. And with where ACI sits in the payment ecosystem, with all 4 segments being represented, and data being gathered and analyzed for all 4 segments, we are sitting on a really powerful opportunity. So that's the analogy. That's kind of where this is all headed.

Let me get back to where we are today with our Payments Intelligence platform. And we're still very focused on the fraud and risk use cases. And you can see these are the capabilities of the platform we're building. And what makes it powerful for ACI and, more importantly, for our customers is we have the ability to combine these things, the advanced machine learning and AI, with ACI's access to this global consortium of data set across thousands of merchants and thousands of banks and corporates and underlie it with really NFRs that are second to none in the market. It is that combination that makes it very powerful. There are players in the market who have interesting machine learning and AI, but they probably aren't able to combine it with our global consortium data set. And our nonfunctional requirements would give us the ability to do it at scale that really nobody else can.

There are players in the market, who have interesting machine learning and AI, but they probably aren't able to combine it with our global consortium data set, and our nonfunctional requirements would give us the ability to do it at scale that really nobody else can.

Our global footprint of customers using our fraud solutions, it continues to expand. We have over 350 direct customers, meaning banks and merchants, and even processors using our fraud solutions, but we have many intermediaries also providing fraud solutions to their customers, and so that brings the number up to thousands of customers. Our global footprint, couple reasons why that's important. One, I mentioned the global consortium data set, right. With all of these customers and all these countries and regions around the world, we're getting a really rich data set that is flowing into our Payments Intelligence platform. Fraud is also a global business unfortunately, and so things that we see happening in one part of the world, certain fraud trends, fraud attacks, new techniques the bad guys have come up with, well, we can make that immediately available to our customers in other parts of the world, so they can get out in front of that threat and have defenses ready to go, tune their models, tune their rules so that they could be ready for when that comes.

So our next-generation platform, what's in it for our customers? Really, the value prop -- the value proposition for our customers is about achieving -- it starts with best-in-class fraud detection rates, right. So you want to catch the most fraud with the lowest false positives. But we combine that with massive increases in throughput, response time and system availability. So what that means for many of our large customers, who are processing millions or even billions of transactions, now they can run all of their transactions through a very advanced fraud screen process in real time, so in line with the payment transaction without missing a beat, without creating friction for customers, unless, of course, they see something bad where they do want to introduce friction. And that allows us to provide world-class fraud and risk protection for our customers during the really important times of their business, right.

We have customers who much of their business depends on a successful Black Friday or Cyber Monday, Super Bowl Sunday. We have gaming providers who, when they launch a new game, a new launch of the Fornite game that probably many of your kids play, that is a big deal for those gaming developers. And they get huge spikes in transaction volume. They also get huge spikes in fraud attempts. So we want to be able to make



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sure our system can support them through their kind of regular times, but also through those really important peak periods that their business depends on, and they want a proven partner that can handle that and combine all of these things together.

So I mentioned that we've got this multiyear project underway, and we've just begun introducing parts of it, and one of the first phases of our Payments Intelligence platform that we put into the market is what we call our stream analytics engine. So this is really kind of our version of our machine learning and advanced analytics component of the platform.

It's very high scale. It uses the latest advancements in big data and big data analytics. And it allows us to monitor a much wider variety of data and data types than previous generation. And that allows us to be much more precise about how we understand consumer behavior, account behavior, what's normal, what's abnormal and all the things you'd expect from a world-class fraud detection system. And importantly, it's applied to that global consortium data set, which is a real competitive differentiator for ACI in this space.

And one of the parts of the stream analytics engine, where our customers are finding the most value in these first 6 to 9 months of deployment is positive profiling. I'm going to use another analogy, I apologize, but I like these analogies. The analogy I'm going to use here is airport screening, right. Go back, I don't know, 10 years, I guess. Everybody used to have to get in the same line at airport screening, right, and everybody had to go through the same cumbersome process of taking off jackets and shoes and belts and liquids and all of that. Well, what do we have now, right? We have TSA Precheck and clear and depending on what country you're from, you may have those equivalents, where we are -- if you're willing to go through a process in advance, you become a known good passenger. And the screening we put you through is much less, it's much lightweight. We effectively are -- we're making you travel experience frictionless or at least less friction.

That's really what positive profiling is doing for fraud screening, right. We have -- we know so much more about the consumers that are transacting, the devices they are using to transact, what their behavioral patterns are when they attempt a transaction. We can pretty clearly identify who the good customers are, and we can let them pass through with minimal to no friction through the fraud screening process and put our heavyweight attention on the risky or unknown folks or transactions that are passing through the system. And what that does, ultimately, is it increases conversion rates for our merchant customers and it provides a much better consumer experience. If you are a known good customer, your experience of shopping, and buying and paying is going to get much, much easier and much, much faster. And that's really important.

So what I want to bring up now is a short video. We have the Head of our Global Risk team, who works with all of our customers globally to implement advanced analytics and fraud rules and all the detection strategies that they use is going to talk along with one of our customers about some of the benefits they're seeing from our stream analytics and the beginning phases of our Payments Intelligence platform. So why don't we go to that video?

(presentation)

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**Mike Braatz** - ACI Worldwide, Inc. - Chief Solutions Officer

Good. Hopefully that brings it to life a little bit for you. So I've got a couple of slides. The next few slides, we have taken snapshots from various customers around the world and some of them -- to quantify some of the benefits they are seeing from the first phases of our next-gen platform going in. And you can see that, first of all, I want to point out, this is being applied first to our merchant customers, and so these case studies, mini case studies and the quantified benefits you see are really coming from the merchant segment. And for merchants, really the best thing we can do for them is help them sell more. That means increasing acceptance rates of good transactions and reducing friction. And yes, we want to stop the fraud, but really, their business hinges on our ability to help them accept as many good transactions as possible.

And I think that's what you see happening here. Positive profiling, which is really that -- the core of that first phase is driving higher acceptance rates and millions of dollars in many cases of increased sales annually for our customers. That's a very strong value proposition.

As I move to the last one of these slides, I find the last one there on the bottom really interesting. This is really the power of positive profiling and behavioral analytics coming into play here. What happened is by -- through the combination of analytics in our global consortium and omnichannel data set, the analytics figured out that for this retailer, and this is an online retailer of an everyday brand here in the U.S. that many of you probably

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know and shop at, the analytics figured out that good customers of this retailer over a 2-month period, 60-day period, on average would spend \$200 or less. So that's not the only aspect of good customers, but that was a really important aspect when it came to fraud detection.

The bad guys, on the other hand, wanted to spend more. And if over a cumulative 60-day period, there were consumers that were attempting to spend more than \$200, what we found is that 40% of those transactions -- 40% of those consumers ended up being the fraudsters, the bad guys. And that was a really powerful finding, that we could not have found without the combination of our positive profiling engine and our global omnichannel consortium data set. So really, really powerful results we're seeing here in the early days of this. It gives us a lot of optimism to the value we're going to be able to deliver to our customers.

All right. So let's move on to the second topic I wanted to talk to about. It's really the second area that we are investing heavily in to take advantage of the market opportunity, and that's eCommerce payments. Jeremy hit on eCommerce opportunity and how it's driving transaction volumes globally. I wanted to give a little bit more color on and a few more statistics on the market opportunity around eCommerce and specifically, mobile commerce, which we consider to be a bit of a subset of eCommerce, really think of it as digital commerce. The number that really jumps out to me is 19% growth annually; it continues to roll. This is a number that the annual growth numbers have been up close to 20% for years now, and we see that continuing. And I think in markets -- in some of the developed -- I shouldn't even say developing markets anymore, but some of the large markets like China and India where that transaction volume growth is even much higher than 19%, mobile is really driving it. Mobile is the engine behind that transaction growth. So it's really important and hopefully, we'll show you a little bit of that on our demo later on how we're trying to capitalize on that.

We have an Omni-Channel Payments Solution for merchants, and eCommerce services are a really important part of that. You see up here the various services that make up our Omni-Channel Solution for our merchant customers. It's really an unmatched variety of payment services that is required by really all merchant types, whether you are a large, global, complex merchant, who wants to provide an omnichannel offering for your customers, meaning basically, a single experience, a unified experience regardless of how your customers are interacting with you online, on the mobile, in the store or a combination. It's good for digital-only merchants, right. There are plenty of eCommerce-only or digital-only merchants as well as the intermediaries who serve those segments. And of course, really important, integrated fraud protection, that's our Payments Intelligence platform as one of those services that is supporting the solution.

And having a wide range of services for these merchants is really important. There are eCommerce specialists out there that get a lot of buzz and attention. But when it comes to serving omnichannel merchants, where much of the global volume is and will continue to be, you need this level of service.

The other fundamental building block, right, endpoints. We have and this is just a representative sample of the types of endpoints and payment types from alternative payments to traditional card networks to the various acquirers in countries and regions around the world that our merchant customers are asking for.

We have the highest number of endpoints for merchant customers of anybody in the market, and that enables us to serve global merchants, global PSPs, and even if you were one of those players, you're a merchant or a processor or an acquirer, and maybe you already have an eCommerce payment solution, but you want to -- but your payment solution is really set up for more traditional payment types, the traditional card networks. Well, if you don't want to build and maintain the wide variety of endpoints that are required to compete in today's market, we have a great solution for you too.

So we have a solution that can serve a wide variety of players, whether they're looking for a full omnichannel set of services and endpoints or whether they're looking for to fill some gaps in what they -- maybe what they've built themselves or what they're getting from one of the more traditional players.

And in eCommerce, a great solution is as much about the consumer experience as it is about the endpoints and services you can combine, that the combination of endpoints and services needs to work well in all channels, on all device types, as you can see here and it's not just the phone and tablet anymore. Of course, there are wearables, the Internet of Things is coming, there are going to be millions, perhaps billions of devices that can initiate payments, and it needs to work in all of those experiences and make it easy on the consumer. And ultimately, it's got to put the



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shopper, the payer, in their comfort zone, whether that's their language, whether that's their currency, whether that's their preferred payment type, all those things need to come together.

And one of the ways, we enable to that happen is -- so I'm getting a little technical on you, but this is really important and it also plays into the demo I'm going to show you later, which is our mobile commerce software development kit, or SDK, right. Mobile, as we talked about, is becoming really a leading channel for consumers when it comes to digital commerce. And one of the ways that merchants are capitalizing on that is providing a rich set of applications that they're -- to engage their consumers. The place to go when you want to engage with that merchant, you want to manage your loyalty and rewards points, you want to make purchases and ultimately, pay for things. And the best merchant apps are the ones that make it really easy to pay right in the app. And our mobile SDK is what we offer to enable merchants and their partners to payments-enable their applications, right. So we don't build the apps themselves, they build the apps. But when they want to plug payments and a powerful set of endpoints and services into that app, that's what our mobile SDK does regardless of the device. And then, what I will say here is that we've used our very own mobile SDK to build the demo I'm going to show you later. We actually built an eCommerce application, a very simple one, for the purposes of the demo, but we put payments into it using our very own mobile SDK. And that's really important. This is something that's being picked up globally by merchants and intermediaries throughout the market.

So you put all that together, we are investing heavily in eCommerce and mobile commerce as part of our Omni-Channel Solution. And back to the point really we made with Payments Intelligence, when you come mind all those endpoints, all those services and our market-leading NFRs, it really is a tough solution to be in the market, especially for those merchants who are thinking kind of digital first. Even if they have a huge in-store, card-present component to their business today, if they're thinking digital first, we're a really good solution, and will continue to invest to keep that market leading.

And I put the slide in here because I am singing a lot of our own praises, but don't just take my word for it. Forrester, one of your esteemed colleagues in the analyst world, just recently completed a comprehensive study and a rating of merchant payments providers and ACI was named one of a very small number of leaders, and you can see the quote there that explains, really, I think gets at the crux of why we were named one of the leaders. And I think we're in good company and ahead of some good company in this space. And we're very optimistic that the investments that we've made, Jeremy talked about near on \$1 billion over the last 5 to 7 years, a lot of that in the merchant space, where we see it coming together now. We feel like we're really well positioned to take advantage of this opportunity.

Okay. Moving on. The last area I want to cover for you, do a quick demo, is Real-Time Payments. And Real-Time Payments is a -- it's really an understatement to say it's a large opportunity. The -- 2018 has been really almost a coming of age year for Real-Time Payments. It's becoming the new norm in countries around the world. There are now over 30 countries live with a real-time payment infrastructure around the world. And I think in 2018, the U.S., kind of key parts of Europe and Australia, really kind of entered the mainstream of real-time payments with their schemes.

As you see from the chart, there are plenty of planned go-lives to come and others that are in a little bit of earlier phases of implementation. But what we figured out is that within 2 years, all the countries that will have a live real-time payment scheme, that represents over 95% of global GDP. So effectively, the world's GDP will be served by live real-time payment infrastructures within the next 2 years. So it is here, and it's a tremendous opportunity.

We have continued to capitalize on that and kind of the real time and digital enablement of the world's payments. We launched our solution in 2017, and we launched it as a way to bring together the real-time processing of higher-value payments like wire payments and some of the low-value -- lower-value instant payments, and those lines are starting to blur. I'll talk about that in a bit more. This year, building on to the solution, we added support for SWIFT gpi. For those of you who aren't familiar, SWIFT is a global international wire network, wire transfer network; gpi is the attempt to put standardization around it for cross-border money transfers, and I believe at this point, we've got close to 9 countries that have adopted gpi and said that the banks in those countries are going to follow on that standard. So that's really important, that we added support for that this year as that grows and kind of standardization comes to this market for the high-value payments.

We added new central infrastructure capabilities. Our strategy here really is to add support for the central infrastructures as they pop up and go live around the world, and then enable banks in those markets and other players in those markets to then connect to them. This year, we are adding PayNet in Malaysia to bring Real-Time Payments to the entire country. And our platform is maturing. We have a set of open APIs that allows us to





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build out that partner ecosystem, who can take advantage of not only the real-time rails, but the much richer data set that can go along with Real-Time Payments.

I think this is a really important chart. It talks about where we are live today. Really, think of this as our footprint for building out our market share in Real-Time Payments. Up to this point this year, we're live in 8 major countries and regions. By the end of the year, we'll be in well over 30 banks. Our push in 2019 is to add more footprints, more go-lives with these connectivity to these infrastructures and enable more banks to be coming on to the network. And here's the ones where we are today and the status. And I think it's really important that -- these are some major countries, some major volume opportunities that we see in the market.

It was last year about this time, we talked about some of the things we were going to be launched in 2017. We had more work to do in 2018. As we were up here last year, we said these are the things we wanted to get done in 2018 with our real-time solution. And I think I'm happy to say that we've done them.

And I think where we are now with our solution is, whether a bank is in a rush, there are banks kind of rushing to keep up and they've got a bit of a tactical plan to just take advantage of this initial wave of real time or whether they're looking more strategically and they're looking for more of a hub solution to support multiple payment types, we can support them. We've got a technology platform and a commercial model to suit regardless of which of those camps they're in. We've got over 45 customers in many countries. I think we've proven our ability to support the complexity and the needs of this market, and we are in it for the long term. And the things you see here are a really important part of our solution as we have it today.

And there's a -- when we talk about Real-Time Payments, there can be a tendency to focus just on the rails, right. The importance of having the rails, then connecting to the rails and the immediacy of real-time payments, but it's more than just the rails. It really is. It is really kind of the solution for modernizing the world's digital banking. And for a long time, when we would talk to our customers about Real-Time Payments, the world was pretty divided in the banking world anyway, right. There was the wholesale side, and then there was the retail side of the bank, and they were siloed, operating pretty independently when it came to discussions of Real-Time Payments and their use cases.

Well, what's happening is the lines are blurring. And the silos are bringing broken down, and they're being broken down because of demand. You've got consumers in certain parts of the world who are looking for digital services and digital experiences on the back of the real-time payment rails where you've got corporations doing the same. And you got the payment -- value limits of Real-Time Payments continues to increase, and it really does create this blurring of the lines, and it's leading to a lot of change. And really and at the center of all that change is fundamentally what ACI does, right. It's any to any Real-Time Payments. But there are all these overlay services and initiatives that are taking advantage of the rails, providing new services, providing transparency into the data and allowing very innovative companies to come into this ecosystem. And we recognize that change. Frankly, we embrace that change because we have a platform, we have services, we have APIs that are going to allow us to build an ecosystem around our platform, which we really see as a key to success in the market.

And now I want to do a demo. So I'm going to transition into presentation mode into demo mode. So for those of you that are on the webcast -- those of you in the room, just hang with me. For those of you on the webcast, I just want to point out, we are going to a live demo in the room. I'm going to do it on my phone. For the webcast, because we're not broadcasting video, you're going to follow along through a set of slides. So just bear with me as I kind of set this up in the room. I have got to get my screen connected here. Okay.

So I'm going to -- let me start the demo up. I'm going to do 2 quick scenarios. These are everyday scenarios that I would imagine most of you can envision yourself encountering. I'm going to do the demo on my phone. A little later on, I'm going to bring up a friend, Dan, to help me through the second scenario. But it's going to be a combination of eCommerce and Real-Time Payments and Omni-Channel. And the demo takes advantage of an eCommerce app that we built for the purposes of this demo. The -- so it's a real app, and we use our own mobile SDK to put the payment capabilities into the app. And I'm going to kind of do a couple of fictitious scenarios to show you the power of ACI technology, powering payments in this kind of real-time digital commerce world.

So if we can just bring up my phone on to the screen. Okay. So what you're looking at it is you're looking at my phone right here. And to prove it to you, because we've done this before and I've had people afterward say, "That was really good. Those were can slides, that wasn't really your





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phone." So I'm going to prove to you right now for those in the room, the webcast, bear with me, I'm going to prove to you that we are live. I'm going to take a selfie with me on the stage. There we go. That is really me, that is really my phone. Okay. So that's just proof. Sorry to have to do that, but I just wanted to defend myself from those naysayers in previous demos.

Okay, so let's start the first demo. Everyday scenario, I -- let's -- so kind of roll. I'm a soccer fan, I'm a big soccer fan, and I play in a soccer leagues. I have to get a new soccer ball. And my favorite sporting goods store is a company called More Than Sportswear. And I love shopping online with More Than Sportswear. So I am going to go to the More Than Sportswear app and look around and shop for a soccer ball. So pretty straightforward thing. Let me click on the More Than Sportswear app, and it opens up, and this is a very simple eCommerce application that I told you we built for the purposes of this demo.

And I see my -- the soccer ball of my heart's desire, that gold soccer ball down there, and I'm going to click on that to buy it. Now nothing out of the ordinary here. All of us have probably encountered a similar scenario to this multiple times even this week. But you can see now the power of the payments capability starts to come into play. I could check out immediately with Visa. You can see that's a preloaded option from this merchant, but I actually, in this case, prefer to pay with my bank. I trust my bank, I know it's secure, I'm well-versed in their online banking application and frankly, I prefer to pay directly from my bank account when I can. And so I'm going to add the soccer ball to my cart. I'm going to go up to my cart, and I'm going to check out. So again, nothing special, right. You're like where is the power here. Now you start to see the power of the payments capabilities.

Now I'm into the payments page of the app. And you can see through the mobile SDK in ACI's UP technology, we have been able to add all of these payment types to this app. Now in reality, most merchants aren't going to support this huge number of payment options. But we just wanted to show you how easy it is to add. If you're a merchant or a consumer, you can add and kind of configure these payment types options very easily. It doesn't require coding. It doesn't require a reload of the app. It just it's -- kind of the analogy I make and I make a lot of analogies, clearly, is it's a simple as when you pull up your social media and a Facebook page, you got a new feed. Well, if they make changes to those payments, it's just a new feed. You don't have to reload the app every time you go to Facebook to get a new feed, right. Just like you don't have reload the app to get a payment types.

But like I said, for the purposes of the demo, I want to pay direct from my bank. So you see this option here in the upper left, DFP, direct from bank. That is a real-time payment option. So this merchant, More Than Sportswear, is very innovative and very advanced, they have decided to accept real-time payments. So I'm going to click on that on that option. That's my preferred payment option to buy my soccer ball. So when I click on that, confirm and I'm going to pay now. So what's going to happen next is the APIs and the orchestration of ACI's UP technology is going to bring up a direct connection into my bank account. My bank is BB Bank. They're my trusted bank. This is their app that I know and love. It's immediately going to take this payment to the merchant within my banking application. It's going to give me a choice of which account I want to pay from. I'm going to pay from my personal checking account you can see selected there, and then I'm going to hit pay. It is going to authenticate me, right. This is one of the things I value about this payment experience is it's trusted, it's secure. I put my thumb, it authenticates me. And I've just paid More Than Sportswear directly from my bank account using a real-time payment, and you can see I get confirmation, and with 1 click I'm back, I can get my order details if I'm interested, and then I can continue shopping.

So that's the experience, right. Simple, minimal clicks, automatic connection and orchestration between my merchant website, where I wanted to buy something, my bank that's supporting a real-time payment, and that connectivity was seamless.

And all in all, I think it was a pretty -- I could have walked through that much quicker, but slowed down to walk you through it. But it was a great user experience. And it took advantage of all the capabilities that are sitting on our UP technology.

Okay. Let's go to a second scenario. And for my second scenario, I'm going to bring up Dan. Dan is one of our lead solution consultants in our merchant and eCommerce practice. But for today, Dan is going to play 2 roles. His first role, Dan is going to play my friend; and then later on, Dan is going to switch over and play a store clerk when I go to the store and we'll explain that more in a second. So Dan, why don't you go ahead and get us started on our second scenario.



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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Wonderful, thank you, Mike. So from my scenario, as you've heard, Mike is a big fan of More Than Sportswear. And today happens to be his first day. So I'm going to go into the application because I like Mike and he's my friend, and it's his birthday. I'm going to buy him a gift card and because he is a really good friend I'm going to select \$200. He's not that good a friend, we're not going to select \$500, but \$200 is pretty good. So now I'm going to select checkout immediately with Visa because More Than Sportswear makes it easy for me to select that and pay immediately. So as you see, we'll put that up there. We have all of my payment details. I will pay now. And I also have the biometrics, and I will confirm that with my thumbprint.

I now have the ability to send this gift card to Mike. And not only that, I'm going to customize it as well. No, we don't want, "Dear friend," we want "Dear Mike." We're going to put that in right now: "Dear Mike," and we're going to say, "Happy Birthday." There we go Happy Birthday and a bunch of exclamation points. There we go. And I'm going to send that and the application gives me the ability to utilize multiple messaging systems. But I know Mike and I've connected with him on WhatsApp. So I'm going to send him a WhatsApp message right now that contains the gift card. I have sent it. He has received it, Happy Birthday, Mike.

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**Michael Braatz**

All right, great. So why don't we bring up my screen now, so I'm on the receiving end of this. and here's my screen again. And as you can see, my WhatsApp icon or app icon has indicated I have a new message. Oh, it's my birthday. Who's sending me a Happy Birthday message? Oh, it's my friend, Dan. I open up Dan's message, and lo and behold, I find out that he has sent me a Happy Birthday gift certificate to my favorite store. I'm very excited about that. Matter of fact, in addition to the soccer ball, I needed a new pair of soccer shoes for this tournament I'm playing in this weekend. So I'm going to actually take advantage. So when I click on the gift certificate link in the WhatsApp message, it brings me immediately to More Than Sportswear's app and gives me the option of adding the gift card. I'm going to add the gift card. There it is. It's now part of my wallet and one of the payment options that's available to me at More Than Sportswear. And let's start shopping again, right. I said I needed shoes, I really like the looks of these. My gift card will more than cover them. But as I get into it, I start thinking, really shoes, is that something I want to buy online? I actually like to try on shoes, especially soccer shoes. I want to make sure they fit, the feel of the leather, all of that. There happens to be, lo and behold, a More Than Sportswear store right around the corner. So instead of buying online, put that on hold, I'm going to walk around the corner, go into the More Than Sportswear store. So I am now entering the store.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Hey Mike, welcome to More Than Sportswear. How's it going?

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**Michael Braatz**

Hi, how are you?

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

I'm doing well. What are you looking for today?

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**Michael Braatz**

Well, actually, I started to shop online. I'm interested in these shoes, but I really wanted to try them on first. Is that something you can help me with?



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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Oh sure. Absolutely. I believe we have a full selection right over here.

**Michael Braatz**

Perfect. All right. So I get my shoes. I try them on. Of course, they fit perfect. They're going to be great for me. As I take them to go to check out, I notice there is a super long line at checkout. I do not have time to stand in that line, I've got another friend taking me to lunch for my birthday today. Dan, sorry, I can't wait in that line. I've got to be somewhere, so I'm just going to have to come back and buy these later, okay?

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Oh hold up a moment. So how exactly are you going to pay today?

**Michael Braatz**

Well, actually I had a gift card. It's my birthday and I got a gift card from a friend, I was going to use that to pay.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Wow, he sounds like a really special friend, but guess what, I can take care of you right away. I can use my mobile point-of-sale and we'll scan it and we'll have you out the door in a couple of seconds.

**Michael Braatz**

So I don't have to wait in that line?

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

No, not at all. Let me just -- I'm going to pull it up on my screen. And I'm going to select the item out of inventory, add it to the cart and now, I have the ability to scan your QR code. So if you could pull that up on your phone, you see that gift card through the app.

**Michael Braatz**

So my phone is on the left, I'm going to hit the QR code icon. You can see the various payment methods that are supported with a QR code, including that new \$200 gift certificate that I added. I click on that. That is the QR code on my phone,

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And I'm going to go ahead and scan that item right now and now that that's scanned, we're processing it. I've received the payment. We're going to send you a receipt for that and you're on your way. Happy Birthday, have a great day and enjoy your lunch.

**Michael Braatz**

Thank you very much. All right, seen.



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All right, so the things I want to point out about that scenario, again, it's an everyday scenario, right. There's no rocket science involved in what Dan and I just did. That is an everyday shopping experience. But importantly, first of all, the gift certificate, that experience all digital, all online, using kind of the latest available social media app or WhatsApp to send the message. I was able to add it seamlessly to my wallet in my favorite merchant app. But then, I decided I needed to go into the store. So now we cross into the omnichannel world. So I'm in the store, complete my shopping experience, don't want to wait in line, in the industry, we call that queue busting. Dan had a mobile point-of-sale capability right on his phone as the store clerk, allowed me to check out, not wait in line. I was able to use my gift certificate and I didn't have a physical gift certificate, I had it represented in a QR code that his mobile point-of-sale was able to accept. So that brings together eCommerce, Omni-Channel capabilities and in the first scenario, was a combination of eCommerce and Real-Time Payments. So I hope that brings to life some of the payment capabilities and the great user experience that we can enable with UP technologies, all available today on the truck ready for sale.

And that's it. Thanks very much.

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**John Kraft** - ACI Worldwide, Inc. - VP of IR & Strategic Analysis

Thanks, Mike. Thanks, Dan. Powerful stuff. We're going to go ahead and take a break now. Let's be back here at 10:25, I think that's about 25 minutes for you.

Also, please check out our touchscreens in the lobby area there. There are customer use cases there and you might get a kick out of them.

(Break)

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**John Kraft** - ACI Worldwide, Inc. - VP of IR & Strategic Analysis

Welcome back, everybody. Let's go ahead and get started with the round 2 here. Up next is Craig Saks, our COO. He's going to walk us through the ACI strategy via the 2 P&L strategy.

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**Craig S. Saks** - ACI Worldwide, Inc. - COO

Right, good morning, everyone. I feel a bit naked, I lost the clicker. But anyway, I'll just tell them where to go with the slides. So thank you so much for being here, it's great. I must tell you that in the first part when I was listening to Jeremy, I was doing the math and I decided that Scott's the sandbagger and, if anything, there's upside to the numbers he's talking about. So that's quite exciting, certainly lots of optimism in that.

As I was thinking about preparing for today, I got onto Don Quixote. Some of you may -- thank you. Some of you may remember or recall, Don Quixote is a book that was written in the early 1600s by Cervantes in Spain. He is regarded as one of the greatest Spanish authors. In fact, the book, Don Quixote, is regarded as the first modern novel, and many people would tell you that it's probably one of the best novels ever written.

And it's a story about a Spanish nobleman who got so enamored with the romantic stories of the knights of old that he lost his sanity and essentially imagined himself to be a knight and Don Quixote is the book -- actually, 2 books, 2 parts, that tells the story of his adventures as he sets off idealistically trying to change the world.

And then one of the proverbs that comes from Don Quixote and many by the way, Cervantes is -- led to a number of proverbs that are part of modern-day speech is actually the proof of pudding is in the eating. Well, inconveniently, it turns out that he didn't really write that in the book. It was added by an Englishman. He was translating it in the 1800s. But nonetheless, a lot of the people do ascribe the proof of the pudding is in the eating to Don Quixote and Cervantes. And it's actually quite an apt proverb or expression for this part of today's agenda.

We've been talking about all the good things we got. We saw Mike running through the 6 solutions and the amazing capabilities we have there. We heard Jeremy talking about the massive market opportunity that we address with our 4 segments that we're facing off against. And we realized that through executing in our 2 P&L model. And -- ah, the clicker does actually work. And so we realized that through our 2 P&L model, where the



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goal and the task from an execution, operational perspective is to realize the value that is presented by the 6 and the 4 through the 2 P&Ls, which are aligned with particular customer groups and their particular needs. And so on the one hand, as you saw, and you heard Scott talking about, we've got our on-premise P&L, which is really our software license business for people who want to license our software and run it in their data sense of choice, and you'll hear more from Mandy Killam, the head of that P&L in a few moments. And then we've got our platform business, our ACI On Demand P&L, which is there for people who want to run as a tenant on our platforms.

And so if the 6 and the 4 are the pudding, well, then the proof needs to be in the value of the 2 and the value that the 2 creates. And we will share some of that through this conversation. Because at the end of the day, that's what matters, is that we deliver the result, and we create real value working with customers.

And what's exciting about today's discussion is that we actually have a number of customers and partners that are going to share the stage with Dan and with Mandy, and that really does bring it home and make it real. And so I always look forward to that part of the conversation.

Before I get into -- well, before Dan and Mandy come up onto the stage, maybe just a few context setting comments that I'd like to make around the execution side and some of the things that come to the fore. Some of these have been mentioned in the morning by Scott, Jeremy and Mike and Phil, but nonetheless, it's perhaps useful just to repeat some of them in the context.

So first of all, 2018 has been a major step forward in our transformation of AOD into a platform business. We've moved it from being what it was a number of years ago, being a traditional hosting business, into a platform business where customers are tenants on a shared platform. The benefit for customers is immense. They get to be a participant on the latest and greatest technology that we have at a price point that is competitive. And the advantage for ACI, as you heard from Scott early on, is that it drives real efficiencies. It's going to drive great margin improvement as we move towards the Rule of 40% and, in fact, I would tell you that I wouldn't see a path to the Rule of 40% without the platform, this approach that we are now applying to AOD. And I'm excited about that journey.

And it's actually been validated. A lot of people say, "Oh, people are going to lose their freedom to customize and run their own dedicated instances in AOD." Well, the reality is we've signed 78 new customers year-to-date in AOD, mostly on our merchant biller and Payment Intelligence platforms, but that's great progress. And I look forward to strong growth on the back of that in the coming years and as we continue to mature our platform practices. So a big step forward.

On the on-premise side of the house, again, as I said, that's our license business, you heard Scott talk about our RPS and the great traction we're getting through programs like RPS. The adoption rates have been high, and the reason they're high is that people actually do appreciate story around the power of RPS as a platform to consolidate and grow their future consumer or retail payments. And they're paying us for that, and you've heard that, that we're achieving. So that's a great driver of the AOP, the on-premise business. It continues to be a great driver of margin as you heard from Scott. It generates great cash, and we fully expect that to continue.

The great news is that there are actually some tailwinds in this business. Things that are actually going to drive additional growth as we move forward in addition to the continuation of the RPS program, in addition to customers using the RPS capabilities and what have you for higher transactions and what have you, as Jeremy spoke about.

And so those 3 opportunities. Firstly, something that's actually new and has been quite surprising how quickly that's moved is the growing acceptability of the public cloud as a deployment option for some very large and mainstream institutions. A few years ago, there was a question mark over that. But if you look at what's going on in the world today, more and more institutions are talking about the public cloud, so AWS or Azure and so on as being a very acceptable place to deploy some mission-critical systems. And we're starting to see growing interest, not just from FinTechs and people that are moving into new markets as an easy way to get going with our technology, but quite frankly, from some of our very large customers that are seriously exploring the benefits potentially of running in the public cloud. And that's going to create opportunity for us as we help them pursue that as changes some of their price points and their flexibility. And so a really good outlet for our license business in a way that we have perhaps then not had an outlet or an options in the past.



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And I fully expect things to move along. And in fact, in a few minutes, Cognizant will be joining Mandy on the stage to talk about some of the great work that we've been doing together with one of the world's biggest banks, certainly a top 100 bank if not a top 50 bank who have done some very material work looking at how they could move RPS from their proprietary platforms into the public cloud. And have proven the cost and the performance benefits of that as an option. So that could be interesting.

The second area you saw on the price slides around open technology, so Linux and more recently, the addition of PostgreSQL as a database option for our customers. That's all about reducing the total cost of ownership. That's good for our customers because it means that they can grow and scale and then realize the performance benefits of those platforms at a totally different price point. It's good for ACI because it means that the total system's cheaper, but our software value is protected. And so it's a win-win for both parties, and we are seeing immense interest in that.

As a proof point there, we have customers that have either completed or on the verge of completing the implementation of RPS platform on Linux on all 6 continents, if you exclude Antarctica as a continent where there are no meaningful banks. We've got serious customers in all other places that are actually committing to the Linux journey at scale. And so that's an exciting progression for us and opens up real opportunity.

And then Mike spoke about the Real-Time Payments opportunity. We stretch wide. He mentioned PayNet as a new national infrastructure or payment rails for a country of 65 million people. That's running on our Real-Time Payments solution, on Linux by the way, through to gateways and in between payment hubs. Some of you would have seen the press release from BMO in Canada who launched a payment hub on that technology to connect to a number of payment systems, including SWIFT, including Zelle in the U.S. and orchestrating those payments through our solution, RTPS solution. So very exciting progress there.

That's going to be a strong driver of growth as Mike mentioned. You may recall, he said we've got 30 live. By the end of the year, we'll have 45 live customers running on RTPS on the immediate payment side and that happened in a very short period of time. And I expect to see real growth in that business over the next 3, 4, 5 years. And it's going to give a real impetus to our on-premise business, at the same time, preserving those amazing margins that we get in that business. And so, I'm very optimistic about what we see there.

The third area that I think is important to talk about is when we created these 2 P&Ls and you'll remember the 2 was a reorganization last year to focus on customers and the needs of customers. Customers who want software, customers who want to run on a platform. And that's part of that reorganization. We created 2 new functions for ACI, one in each P&L. So we now have a customer success function dedicated customer success with senior leadership in each of the 2 P&Ls. And customer success is really about managing the mutual benefit of our relationship with our key customers, and it's maturing wonderfully.

It's not about the soft and fuzzy, we feel good about each other's stuff; it's really about strategic alignment, and we have examples of major banks. In fact, we're busy right now with a global top 50 bank who've invited us as the only vendor in their multiyear payment strategy refresh. And that's a direct consequence of customer success efforts, where we're working together to align our strategies and our customer's strategies and long-term thinking and planning, because we actually have mutual value to add and customer success is a key part of that.

Other ways that customer success is playing into our world is in working together to create value. So for example, Amadeus, the airline booking system, use our Payments Intelligence for fraud. And they recently worked with us to help -- for us to help them train their salespeople. So their salespeople could go out into the market and sell the card-not-present fraud offering and thereby attract more transactions to our platforms. And so that's a wonderful example of working together through the customer success focus to create mutual and joint value.

And then a third area, obviously, is that the customer success teams work with our existing customers to find ways to create value and usage out of the solutions they bought from us or the solutions they potentially could license from us or the platforms they could onboard onto.

And we've got a number of examples, and Mandy will talk about activation in the context of RPS, for example, but more widely than that, where our customer success teams working with our customers are uncovering massive opportunities for new payment experiences, for consolidation and what have you that drives great value and, quite frankly, is driving good opportunity for us as we focus on increasing share of wallet.





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And so I'm seeing very real progress through the 2 P&L structure in terms of mutual value creation between ourselves and our customers, and that's ultimately driving bigger transaction volumes as we progress. And so that's an exciting part of the journey with some very good proof points.

And the last area I'd like to touch on very briefly is this notion of speed and responsiveness. I am avoiding a bit of the agile cliché, but at the end of the day, the payments world is a very exciting and dynamic one. Everywhere you go, things are changing, people are innovating, there's competition going on. And our customers for years have been saying, "Please help us move more quickly." And we're core to a lot of what they're doing. We need to be part of that speed and that responsiveness in the marketplace. We've been working very hard over the last few years to respond to that.

And our projects are going so much faster. Of those AOD customers I mentioned, the 78 that we signed this year, around 90% will go live within 6 months of signature, and that's an amazing achievement compared to last year and the year before. That means that within 6 months of signing, a customer is live and transacting and getting the benefits of that, ACI is getting the benefits of the transactions flowing through our platforms. That is a huge step forward. And by the way, only possible because of the platform education of our business. And so a major impetus, a real wind in our sales, if you imagine that those customers are going live and we'll start to see their transaction benefit next year already through our On Demand business. On the On Premise side over the last 3 years, and I'm very proud of this, we've been quietly getting on with it and if anyone would pause and look at the stats that you say wow, we've actually halved the average duration of our projects for our software license customers that are trying to implement new installations. And we are at the point now where we can do some major projects in less than 12 months. So that payment central infrastructure that I mentioned, the national rails for Malaysia. That went live in 12 months, which is a massive achievement. Can you imagine? From contract signature to launching a new national real-time payments infrastructures and our UP technology took us 12 months. It took us 9 months to build the new payment from signature to go live with BMO with a number of payments [types] been orchestrated through the technology at BMO in Canada, which is a very big project for us, very exciting. With regions and you'll hear from regions in a moment with Dan, it took 7 months to get payments intelligence for PRN fraud product up and running on our platform in AOD. So those are just examples of some very big projects that are creating value by going live quickly. It's good for our customers and it's good for ACI.

So just keep those 4 things in mind as we move on to the next section, it's exciting times. There is a real growth opportunity in what we're doing and we're working very hard through the 2 P&L structure to make that opportunity and that promise of the capabilities on our solutions real in the marketplace. And there is real traction behind that. And what you will see now in the next few minutes with Dan and with Mandy is how that's actually showing up with our customers. Because at the end of the day, that's what really matters is customers that are using our technologies in ways that are exciting for their businesses. And with that, I'll hand over to Mandy.

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**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

All right. Thanks, Craig. I have 20 minutes with you today, which is actually a great excuse for me not to have any skits or entertaining stories or analogies and actually exposes my very operational plan. So I'm going to split the 20 minutes into 10 minutes to give you updates around adoption and activation. I'll get into that is just a bit with a real focus on use cases to demonstrate what is really moving customers from the legacy solution use into our strategic solution. So I think it's important that we let you peer inside those use cases that are really seeing traction in our customer base.

And the second 10 minutes I'm going to spend with a strategic partner in a Q&A format, and we're going to touch on 2 key topics that have been mentioned throughout, one is the adoption of open system. So what's happening in the banking and FI sector around adoption of open system technology and public cloud, which I think is accelerated in our mind in what we're seeing in our customer base. So just as a reminder, and Scott covered this in his section, the On Premise P&L has long-standing major relationships with banks and financial intermediaries and merchants throughout the globe. So long-standing large relationships with these customers, who were using our legacy solutions and not only has our challenge been on selling net new on premise customer arrangements, but also to take our customer base using those legacy solutions onto our strategic solution so that we really give them a pathway to addressing all of the payment opportunities that we see in the market today and extending our relationship with those customers.

So there is 3 key things that I'll touch on again in this section. So one is about adoption. You've heard the stats already around the momentum we see in the adoption of the 2 commercial packages we're offering, our On Premise customer, retail payment solutions, RPS, real-time payment



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solutions, RTPS. I'll show you some stats on where we're at with adoption. Second, activation and really what we mean by activation is working with our customers through that customer success function that Craig mentioned on use cases that helped them with the prioritization of what they want to do first with the assets that they purchased. Again very important to longevity of our solutions in the market is getting use of strategic solutions. And the third key message is really that we truly are confident that as customers implement RPS and RTPS, they've got a responsive foundation to really grow no matter what comes next in the payment space. So I'll take you through some of the thinking there.

Okay. So first to touch on just the status at where we are at with adoption and activation. So again what we consider adoption is a customer signing on to those commercial packages, Scott mentioned, the key indicators to our P&L what that means in terms of getting those customers signed. We generally see about a 25% to 30% uplift in price in exchange for the assets that they receive in that commercial package. And we're seeing about almost at nearly 100% adoption rate as customers go through that renewal period. So we're about -- we launched it in the second half of 2016. We're about 2 years in, 2 years and a quarter. We're about halfway through our legacy retail customer base and bringing them on to that commercial package. With real-time payment solution, Mike mentioned, we launched that in 2017. We're starting to see good pickup of that in our existing customer base, even stronger net new growth in real-time payment solutions as we're welcoming new customers to the On Premise business unit, who are adopting our real-time payment solutions. So obviously very, very excited to see growth coming onto On Premise and adding to our customer footprint.

So in terms of RPS customers, about 1/3 of those that have signed are now either live on a use case or in project. So we got about 2/3 that we're still working on various use cases to get them going, but 1/3 of them already either live or in project, which is material progress from last year. So I think that's again off the back of the efforts of our customer success focus.

Again going into these customers not with the intent to sell more, but to get them activating usage of the assets that they have. For activation of RTPS, generally every customer signing RTPS goes right into an activation project. So that's very strong message for us. I think the other thing just to know about where we are at, and I mentioned we're about halfway through. So it's great potential for additional growth in the On Premise P&L. We've got a lot of customers to touch yet and get them through these commercial offerings. So I'm very excited about that. We actually see good growth coming out of our existing customer base.

So now I'm going to transition and give you some insights into the use cases that are really resonating. And it's easy to bucket those, I think into these 3 categories. So manage is really about existing technology and running it more efficiently, grow is about helping our customers bring on new payment types to grow their business and the third category of innovate their ability to respond to new payment types or payment concepts as those emerge. So if we double-click into each of these spaces, so I'm going to talk about the use cases in these 3 categories where we see the most traction. So these are customers that are either live or in projects to take these particular use cases live. This is what shifting customers from legacy solution use to strategic solution use.

It's been mentioned about moving towards open systems. This is actually our #1 use case in terms of customers and projects shifting from a different technology onto Linux. So Craig mentioned what we have running across the different continents now, probably the most logical in terms of the volume that you see as a first step. So a lot of customers choosing to move to Linux before they expand into other payment types. I really see that as a steppingstone into growth of transactions too. The second use case that really popped up this year is around cloud. So we're in project work with customers, either proofs of concept, as Craig mentioned, where we've got licensed On Premise customers, who have generally run the license in their own data centers, doing proof-of-concept of shifting that license use to public cloud and testing out the NFRs and the response, which I've seen very, very strong results. So we're there to support customers as they are looking at that opportunity.

In grow, there is 2 use cases that are seeing the most traction and these are all around end point an end point expansion. So #1 is opening up gateways to schemes so customers that have chosen to use our new assets and going after transaction types that they weren't processing before. So for example, Chinese Union Pay or American Express, some other typical payments we're seeing. Good choices we think and customers instead of building those endpoints on the legacy solutions in a hard code way, actually using the endpoints that are available on strategic solutions is the way to open that up. So fantastic for ACI, good transaction volume growth under that.

And also responding to the digital endpoints out there. So we've had customers implementing gateways for SamsungPay, PromptPay, ApplePay, through the new assets. So very happy to see them choosing to do that on UP BASE24-eps versus their legacy retail systems. Under innovate is



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probably the category, where we see the least in terms of density around a specific use case, and it's probably because it is under innovation and customers are testing out what we can do here with them. But I'll give you 2 examples of those that we have at least a couple of customers working on in this category. So one is around opening up at the point-of-sale dynamic currency conversion. So that's an example of a new revenue stream for customers and they're using our technology as a way to get at that transaction. And the other one that, I think, we will see continue to grow and probably will become something that has a density of use cases that we're going after is the access to real-time data in response to open banking. And that's through use of our open API manager asset in correlation with our UP BASE24-eps or our real-time solutions. So we're starting to see some good pickup there and customers really defining how they're going to approach open banking. And those areas have it mandated, but also those that are getting ahead of it.

All right. How does that show up in terms of R&D. So it's important to note, I gave you a few of the use cases that are resonating. We have an entire library of use cases that we're working on with our customers. So our customer success group takes these use cases out to customers as we're working with them on their strategy and objectives. And where we've got the value proposition behind those use cases to help them work through when they're doing their internal business cases. We add to that library continuously.

And I think one of the very key strengths of ACI is that we do play globally in the payment space, and so we've got the insights into what's happening around the globe to always add to the use case repository. We may find something that really resonated with a customer in Malaysia or Singapore, and we can take that to a customer in South America and apply it to what they're trying to achieve too. So always growing in terms of what we get exposed to around the globe, trying to bring that value back to our customers, but also we grow that use case library quarterly, monthly, weekly with all of our R&D investment from what's coming out in new releases.

And I think that's a really strong selling point for ACI is that we've got concentrated R&D investment to continue to grow our products, and it gives our customers confidence that choosing ACI Solution will continue to give them access to new endpoints, new services, because ACI will continue to add to our repository there.

And we also through our business model for On Premise customers where it's licensed, capacity and maintenance revenue stream, we take the burden of maintaining those endpoints and services off their hands and that's something that we provide as a service to our customers. And that means keeping up-to-date as the schemes are changing their definitions around the messages or the message formats evolve as these schemes get more defined. So maintenance is obviously a big value-add. So again endpoints, services, the way that we deliver those in the new technology, that also allows us to define bite-size projects with our customers, which I think has been really important in terms of customers needing to deliver value or show value from their investments in a shorter period of time. So the use cases that we present can be implemented as a particular use case in a bite-size and that's also helping us bring down the timeline well below 12 months for some of the use cases that are specific to an endpoint or particular service.

Nonfunctional requirements. Phil opened the day talking about ACI's strength and nonfunctional requirements, and we just see tremendous value in ACI's standards around our nonfunctional requirements, not just being able to point to our heritage and show that what we've run in terms of volumes always on 24/7 in our legacy solution, but we have our strategic solutions running at very, very high rates today. So we can point to customers, for example, there is a large bank that moved all of their faster pay transactions that were running through a legacy solution of ours onto a strategic solution, the same scale, same NFRs, 24/7, and that's a great proof point for ACI in terms of building confidence for the customer base in moving to 24/7 real-time on our strategic solution set. So very, very important that ACI has that strength.

One other interesting thing that we're seeing now in the marketplace was both our existing customers and new is that as some of the newer schemes were defined and they chose maybe a tactical solutions on real-time maybe the ability to receive payments and they're now back at the table thinking of a more strategic solution that can handle the scale of what they anticipate coming, either through what they see today in current volumes, what they know is coming in volumes or the future of things like Internet of Things and the volumes that we can imagine as that becomes reality. So we're happy to be having those discussions and having the reference points of what customers have running today.

So I'm going to give you 2 use case overviews before I bring up Adam from Cognizant to give you further insights into 2 joint press releases we did. The first is on Bank of Montréal. Craig stole my thunder a little bit on this one, but to give you a bit of insight. So Bank of Montréal had -- was working on their payments modernization program in response to Canada's payment modernization initiative. And they had identified a need to



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modernize their infrastructure in a way where they could be more responsive to changing customer demands, but also to offer simpler and faster payment options as they became available. And they wanted ability to access data and analytics without compromising the security of the platforms that they were using.

So last year, we announced that we're really happy that Bank of Montréal selected ACI's UP Real-Time payment solution to address their payments modernization program. And it's actually the cornerstone of their payments infrastructure now as they move forward to this new landscape for all of Canada. And as Craig mentioned, we went from contract signature to live in 3 quarters with Bank of Montréal through partnership on how we approached that implementation. So extremely proud of that. They did a joint press release on that achievement.

The second customer profile ABN-AMRO last month, you would have seen another press release out about this customer. Very, very proud that ABN-AMRO, who had been a long-standing customer signed an RPS Agreement with ACI. And you will note in their press release, they intend to continue to innovate product options for their customers in the form of wearables, wallets. They're going to focus on new areas like public transport, all while also driving some efficiency objectives in their platform. So very excited to again partner for the long term with ABN-AMRO and very proud of that relationship.

Okay. So now I'm going to transition into the Q&A segment. So I'm going to welcome Adam Bremner to the stage. So Adam is the Senior Vice President of the Banking and Financial Services sector at Cognizant. And Adam focuses on really the transformational initiative in this segment with customers and helping, in particular with technology, choices and programs to address the opportunities. So welcome, Adam. All right. Here Adam. Thank you for joining us.

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### Adam Bremner

Hi, Mandy. My pleasure. Great to be here.

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### Mandy Killam - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

So Adam, I am going to use your perspective to talk about 2 particular topics, the move towards open technologies and also the public cloud. So we'll start with a couple of questions on open system moves that you see. So what do you think are the key drivers as you're looking at transformational initiatives of this sector? What is really driving the move to open systems? And what are some of the major hurdles in terms of speed of getting there?

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### Adam Bremner

It's a great question. I think we've even heard today around banks and the need for innovation and change. I think you're seeing a shift from, for example, open banking. The notion of going with it's my data, my software, my hardware. You're starting to see that model completely change. And given that if you think around open APIs and the need for banks to be more open in terms of both sharing and consuming, you think that's driving a discussion on the open source and open system. So that's one, I think, transformational theme that we're hearing. The second is clearly total cost of ownership. All other things are being equal, if I can get a lower TCO with open source, that's great. Given of course dynamics around risk and all those elements but everything else being equal, that's the second. And thirdly, I think if you think through in the banking sector, in particular peers using it an examples that gives confidence. So I think you would argue that from an operating infrastructure point of view plenty of examples there. And even on the HP associated Hadoop open source. You've seen those pieces. So there's a bit of an ongoing (inaudible) at least consider open source and open systems. But I think it's kind of a 50-50 story here. I see there is still a leeriness and concern around open systems, now you can debate technology sector's been doing this for multiple years, the banks themselves use vendor technology that is partly open sourced, but I think there still is leeriness around risk, it could be cultural, it could be generational, but there is at least a skepticism at some points around that. Hand in hand with that goes the fact that would you see a core banking system or a core payments platform right on open source, probably not for the larger banks, never say never, but I think there is the nature of may be more of a hybrid model way. I have my enterprise, software with a higher service and support demand that most open projects can support with a open system open source piece to complement that. And then finally there's always the regulated question. I think it's a (inaudible) public cloud as well. But as you maybe up the stack of open



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source, what happens, what are regulators going to say unknown question, but again going back to that culture piece, you will also see a difference between the incumbent players, and I think the digital natives who will start to approach a different way there.

**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

Yes. So you mentioned total cost of ownership and obviously ACI has a perspective on the benefits a customer can gain as they adopt these open technologies. And in particular, we like to talk to customers about how a dollar is spent? And as they decrease the dollars that they spend on hardware, which isn't adding value necessarily into a payment transaction flow, it's good to get them thinking about the entire payment transaction flow and hopefully drive some innovation around what else could be done that further improves the total cost of ownership. So are you seeing the total cost of ownership driving innovation in your customer base?

**Adam Bremner**

I think it's an interesting point around financial services firms, they are not R&D hubs. So innovation is done for a benefit and value. And so we're seeing that discussion of what is the value of my innovation. And I say value, not cost necessary. So where is the end-to-end transaction flow be it for any software that you want to think it through from a hardware, software, customer benefits. And if I can quantify that and that's the key piece. That becomes the business case. And so that tradeoff between look, the software may be slightly more, but there is massive value to net yours and see they won't cut corners for that. So I think there is a bit of a -- it's an integrated business case that people want to get to. And therefore a TCO has to be truly front to back revenue and cost. I mean that's a business case you could start to think about.

**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

Excellent. I'm going to shift now to public cloud. I think it's been a surprise, I think, for me at least in just the acceleration of how this is showing up in our customer strategy. And even a two-pronged public cloud strategy in most cases. So I guess, can you share your view on what's driving this acceleration and customer strategies? And what's behind that? What do you think some of the key considerations are?

**Adam Bremner**

I mean there's no doubt -- we're in a different spot now say even 2, 3, years ago around the public cloud debate. I think there's a series of catalysts that have driven this. And there is no doubt that a customer expectation and demand for different services, better responsiveness, are forcing -- banks will say, I just can't support that with my current infrastructure. That's number one. Number two, to make things even worse, you have the digital natives and you have the FinTechs rapidly embracing new technologies and getting faster to market. So banks have to do something differently and do it first. Those 2 things led you to, oh gee how could public cloud help me. Third is that you now have regulators in certain jurisdictions signaling their support for public cloud. And (inaudible) have shown that when the governments and regulators support an initiative, adoption goes up. And finally, I think you'll find that the cloud service providers of the world have listened to the banking industry and have adjusted their models. And so be it data residency, compliant security standards, regular access to facilities, they will kind of embrace that and are willing to adjust. So I think that's all going there. There is still more to be done, and there is still questions around regulatory supervision that will kind of support other jurisdictions. I think that's the better firms get up migrating right from prem to cloud that will kind of help it, but you can feel there is this continual groundswell of movement there.

**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

How material do you think it's going to be in near-term customer strategies? And what implications are customers grappling with?



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**Adam Bremner**

I think you end up seeing this dynamic between my business technology strategy and context. It's different for every firm not surprisingly, but the extent to which you already use third parties versus not. What is the broader cloud strategy? To what extent are you driving a technology transformation with DevOps, et cetera, whereby this becomes an extension of the piece. But I think to be fair, this is one of the balls that these firms are juggling. It is clear that the TCO performance is dynamic. Facts are facts. So it had to deliver what I need, comparable to what I have today if not better. Then there is this security regulation piece. Every bank's going to have its own standard they want to hit. So I think there is a kind if you like, the bare minimums to get right and then depending on their business context and the markets there in that would drive, I think, the public cloud's dynamic.

**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

And lastly a question around how quickly will this show up? So what's the horizon, which we actually see customers using public cloud for some of the payment application, their banking application that we...

**Benny P. Mikkelsen** - Acacia Communications, Inc. - Co-Founder, CTO & Director

My crystal ball here says -- it depends I think what we have seen -- so 2 interesting things that we see in the market place today. One is a discussion now around how to migrate, how to reduce the risk of migration increase time -- reduce time-to-market as opposed to why migrate. Secondly, in payments. 12 to 18 months ago, cloud came up as a concept and a bit of an interest. I think today we're seeing it's not why cloud, it's kind of what should I be thinking about putting in the public versus private cloud? And that's a fundamental shift. And I think it's supported by firms -- we have some examples on the screen here, firms such as a JPMorgan and UBS publicly announcing they're doing some pieces right in the public cloud. I think you're going to see that -- maybe (inaudible) you're going to see hybrid combinations. And it's no surprise that you see the digital natives and the asset-light firms going all in, but I think you're going to more of these -- you going to see more of these established firms. And the final thought is Capital One came out publicly and said, we don't see any reason why anything is -- nothing could be on the cloud, public cloud. I think that's an interesting observation.

**Mandy Killam** - ACI Worldwide, Inc. - Group President of ACI on Premise P&L

Bold statement, right. Well thank you, Adam. Thanks for joining me today. We certainly appreciate your perspective. So I'm going to transition now to Dan Frate. Dan runs our on-demand P&L, and he is going to share some customer insights from that side of the business. So thank you.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Thanks, Mandy, and good morning, everyone. It is -- I'm excited about getting to this next portion of today's Analyst Day to really introduce 3 of our customers. And even before I start, and I'll probably do this a couple of times, I really want to thank them. This is a big time commitment from them not only in terms of coming today and spending time with us, but also going through all what it takes internally at their own institutions in order to get here. So thank you, and I wanted to ensure that I'll started with that and didn't forget. As Craig said earlier, what you will see with these 3 customers are 3 different solutions of ours. And you heard a lot about the technology and use cases, but what's really important here is how we're garnering value not only for our customer, but their customers. And you will hear very different ways in terms of how they're going about doing that.

So the first value proposition is around fraud. And as all of you know, the fraud experience is a real important experience for customer loyalty. In fact, once you experience fraud on your account or what have you, you're much less prone, unless that experience is a good one by the financial institution to use that product in the future. So for our customers ensuring that we get it right and ensuring that we do a good job in terms of getting the right transactions identified as fraud is critical.





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In fact, I would ask, I mean we went around last night at dinner, how many folks around the table had had experienced fraud over the last couple of years. I'd just ask you to raise your hand, if you have? Okay. So the rest of you probably just use cash. But all seriousness from 2016 to 2017, just here in the U.S., fraud trends people that have experienced fraud grew by over 1 million. So it continues to grow, and it's a continued focus for us. So with that, I wanted to bring up Amala Duggirala. Amala is the CIO for regions. Hi, Amala. Thank you for coming. And some of you may actually recognize Amala. Amala was with ACI just until a couple of years ago. In one way you might say she is here because of that, but in another way you might say she knew what we had to offer and chose ACI. So Amala, let's get started. Maybe you could start by just talking a little bit about regions bank? What it's all about? What its goals are?

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### **Amala Duggirala**

So I work in Regions Bank, and it is in Birmingham, Alabama. It's kind of classified as a super-regional. It's 16th largest bank in United States, and it's about \$125 billion asset base with this really strong leverage and liquidity because of the customer set we have. We operate in the Southeast segment of The United States, strong customer base, our (inaudible) is very low, but most of our challenge comes from adoption to the latest innovative technology and digitalization and things like that. So our goal then as a bank is to maintain our customer base because our strong deposit base comes from that customer set and also encourage them to use more and more of our digital channels, digital methods and acquired customers through digital transfers. So that's been the major goal of the bank for the last 3 years.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Great. And you've been a customer of ACI for a while, can you talk a little bit about that experience and the solutions that you utilize at Regions?

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### **Amala Duggirala**

I think we have been customer of Regions for ACI for about, I would say, 22 years, I forgot when where it has been so. Region has been a long-time customer of ACI. We use MTS. It's very [heavy], I think, money transfer system is very heavily used. We use some small [select posts] which kind of does the end of the day balancing from the wires and also we were a big customer of PRM, On Premise for a very long time -- for 11 years.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And what drove -- so Regions moved from an On Premise solution to the AOD platform solution for their proactive risk management on the issuing side of the business. What drove that decision?

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### **Amala Duggirala**

So I'll give a small history. We actually had (inaudible) come in and do a huge strategy project with us, as I was mentioning one of the partners that everybody knows. So they did a huge project with us and then one of the dimensions and outcomes of the project was to kind of emphasis on our 3 goals is how to accelerate our journey into digitalization, how to modernize our software, I think a lot of the comments that the former colleague was making and then the last but not the least is how to improve customer satisfaction. So if you see on all these [things], Dan, our focus was not on cost saves but as cost save was an immediate benefit of all these strategies, that is what the thinking was. One of the elements of these 3 strategies was modernizing the technology behind the things. And then how do we actually get there. And then I took a pretty strong stance about 1.5 years ago that said every opportunity we get, I will be very open to going on to the cloud using hosted solutions, using software-as-a-service rather than building and maintaining our own infrastructure and then kind of putting in a huge capital cost in the front of it. And so that is where the drive came from. Right now I'm at 160 applications already on the cloud and then PRM solution is one of our part of the strategy in which we've evolved into going onto the cloud also.



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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And we were talking a little bit earlier too around how you're utilizing it from a customer perspective and an alerts perspective. Maybe you'd want to talk a little bit about that because that's a -- to me that's a real competitive advantage that a bank like Regions can have compared to some of the larger banks in the country?

**Amala Duggirala**

So then talking about the second leg coming off of the cloud side. I think, the second leg is all about digitalizing and then what kind of architecture do we need in a bank to kind of accelerate the digital journey. Regions was already on the digital journey, but they were very much focused on doing it for consumer, commercial and (inaudible) . Very much a business department driven kind of approach. Whereas we took an enterprise approach and we decided that there will be 19 capabilities that the bank will launch, which will be acting as an enterprise solutions that all 3 consumer, commercial and wealth management and including solutions and capital markets will just consume. One of them happens to be a customer portal that Dan was referring to. Within the customer portal, our goal is to provide flexibility to customer to log in, ability to look at all products that he or she or company has and manage the alerts, fraud setups or any type of interaction or decisions that they would allow us to take on their behalf, if fraud happens. How much decision can the bank make versus when do we call them like all those things. And then the enterprise alerts was an initiative that triggered all of this. And PRM Solution actually happens to be one of the critical component of the enterprise alerts, availability to detect fraud when it happens or ability to do real time by choice, near real-time by choice or by badge by choice is there the necessity to have a very strategic partner, who actually has an API-driven strategy to be in the call flow and give us an (inaudible) that you guys were referencing to nonfunctional requirements and the stability. And the trust that the transaction if it is a fraud will be caught become a very, very important and that's when we went into kind of RFI/RFP mode and rekindled ourselves to the product.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

The big data component around this from a customer perspective for Regions must be important too. So you're not only looking at the credit card data or the debit card data or the checking. You're looking at customer behavior holistically, right. So whether that would include account takeover, customer identity protection all of which can be done via one system in an integrated, call it data mart?

**Amala Duggirala**

Absolutely. I think data has become very strong part also. We are 9 months into the journey, Dan. And then we do look at the data as a whole, like you said, it's not just credit card transaction that we look at or debit card transactions we look at. We look at what locations they call from. We are actually implementing a pin drop, where even look at their voice and the telephone signal lines to understand the customer holistically. So when they call our contact centers, we can immediately tell them exactly what's going on. So for us, the security, authentication, authorization and fraud is coming from the core origin of enterprise thinking and data as a -- and then the analytics platform becomes a very, very important dimension of our strategy. And then, I think Craig was referring to this, going live immediately was a big part. As a new CIO, I have to prove something immediately. So having a partner, who can assure us that this will go happen and then ability to show that to the board or to the customer base, to the investors that this is not a 4-year strategy, this is immediate. We will be able to go live and show the value immediately could become an important part of the strategy also. That ability to have APIs readily available to us, the ability to have install the software, I think 2 weeks into it -- we were able to get there, get the transactions flowing in a test mode and then kind of fine-tune the rules. Even the fact that there were a lot of rules predefined, we can just customize the rules that we want to tune and fine tune made a huge strategic difference in our big data strategy.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

That's a big driver too with regard to the level and number of interfaces that need to be built and worked seamlessly in order to drive that system into production.



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### Amala Duggirala

Dan, we actually had to integrate 17 existing systems within Regions to make the solution work. And if APIs were not there, it would have been a very, very tough decision for us because it's point-to-point integrations and then time to go live is very difficult. And also there was a seamless integration, I think, even pre-integration into FICO Solution, which was also very important part, because one of the enterprise solutions, Dan, also was to bring in a FICO-centralized decision engine into the bank. And then we implemented that and then having a solution that pre-integrated into that was also a big decision factor for us. And I think ACI's PRM system was also pre-integrated.

### Daniel J. Frate - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes. For those in the audience that may not know that particular solution that Amala was referring to would be mostly concentrated in credit and some in debit card and the PRM solution would coexist with those solutions that would be primarily driven by a debit or credit transaction, which is an important component, I would imagine to the overall strategy.

### Amala Duggirala

It does. And I think the business case, even though there are a lot of strategic advantages, Dan, as you know, the CFO always looks for the business case, where is the ROI? So I have my version of Scott in the bank, and then the business case was justified just by our 1 million debit card transactions. Just by a response and then reduction in fraud to our 1 million debit card transactions to justify the business case and everything else just become an add on and on top of the whole thing.

### Daniel J. Frate - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And I understand the need for the CFO and ensuring that you get him or her comfortable with it, but where I would be where, I think, you are is that the customer experience and really differentiating that customer experience versus your competition is really what's driving the value to attract customers and retain customers as well?

### Amala Duggirala

I think super Regions digitals are in a very, very unique place Dan compared to the large money-driven banks because in the 16 states that we operate in, we're either the #1 or #2 in our market capture. And then if you look at it, I do not have as complex software architecture like the big guys. So we're in a unique position where our differentiation has to be how quickly do we respond to an event. It's not that the event will not happen. And when event happens how we respond is after that the customers going to stay with us or not. And we even done a lot of studies Dan that says event will happen. Customers not expecting that event will not happen. How we respond to the customer after the event happens pretty much makes the customer forever for the bank or leave the bank, and that is where our focus is mostly on. How do we respond to the event, how do we catch it and sometimes even not even bother the customers if we can stop it before it happens.

### Daniel J. Frate - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

I know it wasn't part of the business case, but were there specific fraud trends that you were targeting?

### Amala Duggirala

I think debit card was a big part of the business case. Apart from debit card, we were looking at most of credit card side whole transaction-based account levels frauds, balance transfers and then the real-time. So we went live with Zelle, Dan, and then as we were going more and more real time and we went live with their clearing house on the commercial side, there is a big fear in the business that real-time will dramatically increase our fraud trend, which is a genuine fear. So that is another place where we're actually expecting to see a lot of benefit from this solution.



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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Okay. So that was part of the implementation -- of the solution?

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**Amala Duggirala**

Part of the implementation. Second -phase that we're planning on implementing. We're going live with the debit, I think, pretty much anytime now and then I think the second phase is going on (inaudible) .

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Well, great. Thank you, Amala, and thank you for being here today. I think you are a fantastic customer and really have done a nice job of deploying PRM across the enterprise.

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**Amala Duggirala**

Thanks, Dan. It's a great pressure. Thanks a lot.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Okay. So now we're going to switch gears a bit here and talk to a merchant customer. And as Amala said, she is a joint customer of both AOD, my business line as well as AOP, Mandy's business line. And we'll see that again with the next customer. And as we said, merchants here really want to experience a consistent experience across all of their payment channels that's critical, we talked a little bit earlier today about the growth of not only e-commerce, but really m-commerce or mobile commerce, where it's actually making up about almost 25% of the overall payment transactions in the U.S. today. So m-commerce is critical to our merchants and will represent about \$117 billion in transactions in 2018. So here to share some of his experiences with ACI on the merchant side is Josh Birdwell, Josh? Thank you. Have a seat. Josh is the Senior director of Pilot Flying J, as you may not know, CEO is actually the owner of the Cleveland Browns. And I'm from Cleveland. So we've got Josh and I have that in common and talked a lot about them last night. So welcome, Josh.

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**Josh Birdwell**

Thank you.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

So Josh, to start with, can you talk a little bit about the business?

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**Josh Birdwell**

Absolutely. So Pilot Flying J is a travel center company, the largest in North America. We have about 750 locations across 44 states and 6 provinces. We also have a large food business, 400 restaurants in addition to our own brand PJ Fresh.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And can you talk a little bit about the solutions that you utilize from ACI? I sort of let the cat out of the bag that you're an On Premise customers as well as an AOD customer.

**Josh Birdwell**

That's right, we've been an On Premise customer for about 15 years. Heavy bastillion customer using, I'm going to say the full suite. So ACI products drive our terminals at our locations. They do all the credit switching. We have more than 20 end points that we connect out to and process with. And ACI Solution drives our own proprietary fleet card in addition to the security features like point-to-point encryption, tokenization. And recently we became a PAY ON customer driving exciting stuff in our app and website.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Why don't you talk a little bit about that? I know that's near and dear to you.

**Josh Birdwell**

It is. I want to give a short out to Mike about having the myPilot app on his phone when he put it up there. So I appreciate that, Mike. I did get a picture of it. So thank you. Two years ago, we launched a revamped version of myPilot app to really revolutionize how people purchase fuel. Purchasing truck diesel for a professional driver is tough. It's about a 15-minute transaction as they pull in and pull out. And 3 to 4 minutes of that is actual -- is payment. There's a lot of security features around a commercial transaction, where a trucking company will ask the driver for driver ID, odometer, trip number that kind of information. Using the app and ACI technology, we took that 3 to 4 minutes of payment down to about 15 seconds. That was 2 years ago, and we continue to add utility to the app to make doing business with us as easy as possible.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

So how do those -- how do you build out those different payment options?

**Josh Birdwell**

A couple of ways. So through our On Premise products, we utilize that in the app to, I'm going to say, reconnect back to our payments On Prem and then back out to our traditional processors. And recently, we've leveraged the On Demand products to enable payments not On Prem. So as a driver is in our parking lots are away from our store, they can purchase showers or parking.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And you actually have a process in your app where the trucker could understand whether or not there is a parking spot available to him or her?

**Josh Birdwell**

That's right. So parking is a big problem in the trucking industry with new hours of service regulations, and we have about 72,000 parking spots in the country. So a big provider of parking for the industry. And we've done a couple of things. We, in parts of the country, we show drivers what parking spots are available. We have sensors in every single spot and they can, through our app, see what's full, what's not full, et cetera, plan their day. In addition to that, we also allow drivers to reserve a parking spot for the night. So as they're planning to drive to Dallas, for example, or wherever they may be headed, they can plan out and say I'm going to be there, I want to reserve a parking spot to guarantee that I've got a spot and we do that through the app and website using PAY ON.



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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes. Initially you wouldn't think Pilot Flying J, m-commerce and e-commerce would be so newcomers would be as important to them maybe than to some other merchant retailers. That's really not the case.

**Josh Birdwell**

Not the case at all. Super exciting for us. We're becoming kind of a digital first company. We want to provide utility and speed to our customers and guests, and we're doing that through technology that they already have, like the app or their phone, website, et cetera. So we want to interact with them when and how they want to. And we're doing that through digital.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And you also obviously have the fleet customers, but you also have consumers. So very different needs and very different needs from -- in terms of payment approaches. How do you think about that?

**Josh Birdwell**

A couple of general ways. Like I mentioned on the professional driver, they have a very complicated transaction. And therefore, their business and their job, a lot of utility there. The consumer, which is all of us, they're there for different reasons. Whether it's food or a rest stop or fuel, of course, they're looking for value. And we provide kind of different services through payments to service those 2 customer bases, but we try to simplify as much as possible for them.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And you have EMV sort of coming at you soon, right?

**Josh Birdwell**

We do. We do. It's a tough question, Dan. So we do accept EMV transactions inside our stores. We made a decision with ACI a few years ago though to focus first on the security stuff, like point-to-point encryption and tokenization. So last year, we started the EMV transactions inside, it completely rolled out, and we are working on EMV transactions at the dispensers now. We have over 10,000 dispensers to worry about those. So we're taking the approach of focusing on locations that are most important from a broad perspective.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And you've also been very open to work with us on some of our new technologies, right? Can you talk a little bit about that, specifically, our new fraud platform? Thank you for that, by the way.

**Josh Birdwell**

Absolutely. Yes, we're excited about it. There is a lot of fraud in our industry. It's easy to -- whether it's test credit cards at a pump or as we embark on these eCommerce and mCommerce kind of journeys, we're worried about fraud. So we're starting down the path with some of your products to mitigate that risk. Really excited about it.





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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes. And we're excited to work with you, especially with regard -- the seamless integration with your mobile app, and ensuring that you keep that safe and secure.

**Josh Birdwell**

Safe and secure and fast. Speed is a big, big deal to us -- for us and our customers to get in and out of our locations as fast as possible. So adding that protection without impacting fees is top of mind.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Josh, any closing comment that you might have, or...

**Josh Birdwell**

Right. Really appreciate ACI's kind of commitment to creativity and pushing the envelope with us, and that's why we are here.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes. And thank you for being a great customer, and helping us add value to your customer base as well. Thanks, Josh.

So next, we're going to bring up a digital banking customer. And Mike talked -- Mike Braatz talked a little bit about our digital banking solution earlier. We spent a fair amount of time in the last Analyst Day really outlining our investments in that arena, and they have been significant. We have -- we basically reengineered the user interface. We made that user interface much more configurable for our customers rather than needing to customize it each and every time. You also heard too, a little bit earlier, around adding the APIs to our digital banking offering, which will allow our customers to innovate on top of the digital banking platform. And because of that, we believe that this will add significant value to our customers and, obviously, their customers. And digital banking or corporate banking, wholesale banking, as you might imagine, 4 out of 5 customers typically will stay with their bank based upon the digital banking offering that particular institution is providing, whether that be online or mobile.

So with that, I want to introduce Steve Fricano from Santander. He is the CIO. Come on up, Steve.

And Steve joins us, and I didn't know this, even though a Santander is headquartered in Boston, Santander U.S., Steve actually lives in Cleveland. So another Cleveland connection. I didn't know that, that was going to be there. But thanks for coming, Steve.

**Steven Fricano**

All things come back to Cleveland.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

That's right. So Steve, maybe you could talk a little bit about Santander, what you guys are trying to accomplish here, and what the overall goals of the bank are.



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**Steven Fricano**

Sure. So Santander in the U.S. was formerly Sovereign Bank, which was the collection of a number of acquisitions over a number of years. And so it consisted of many specialty commercial businesses. We had a floor-plan business, a multifamily. Real estate, we had standard CRE. We had small C&I. We had mortgage warehouse. We had leasing. It was a collection of just many specialty businesses. And it really didn't hang together as a unit. And so the specialty businesses also didn't derive a lot of cash management business. And so we didn't invest a lot in it. And so the transformation really that Santander is undergoing from a commercial banking perspective is really to move to more of a traditional C&I business model, where we're full service, where we offer both lending and our strong in-cash management capabilities. And so the starting point for this transition was a significant investment in UOB from a cash management perspective.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And Santander decided to move from an on-premise model or decided that it would be better to deploy it in the AOD cloud versus doing something on premise. What was the driving reasons behind that decision?

**Steven Fricano**

Right. So our former platform was Enterprise Banker, which is also an ACI product. And we ran that as an AOD service. And we had that platform for 15 years. When we first made the decision to go with UOB, the decision was actually going to be to run it on-premise. And then with further thought and looking what the complexity would be to stand up a true high-availability, high-support, 24/7 capability in-house, we looked and said, our service with Enterprise Banker had been very stable and highly available. And so we made the decision to actually continue with the AOD service when we moved to UOB.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

What components of the solution did you guys find most attractive?

**Steven Fricano**

Right. So Enterprise Banker was solid in its day. But we hadn't really invested enough in keeping current. We hadn't really built a number of capabilities around it. And so there are a couple of things that I think were really valuable. One, the user experience now brought us into the 21st century, which we needed to do. It also had strong information reporting capabilities. So if we think about our customers, our customers are businesses. And with their businesses, they need to see their ERP systems. And so information reporting and the ability to get at the data and feed their ERP systems is of very high value to those customers. And we felt that UOB had a very strong reporting capability and the strongest reporting capability available. And then we felt technically, the architecture where ACI was going aligned best to where we wanted to be from a product perspective.

**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And I talked a little bit earlier about the open APIs and the investment that we made in the UOB platform, and that was a significant component of that investment. How are you thinking about utilizing those APIs?

**Steven Fricano**

Right. So I think there are a few ways where the APIs will really come into play. So our first use of the APIs was for the onboarding of customers, our authentication. So we have a portal, as many banks do. We have single sign-on capability. But we also build out is a provisioning capability, the ability to set up the administrators for our customers, and to basically create these roles and push the entitlements into UOB as part of provisioning

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the service. And we are able to leverage one of the first APIs that -- or one of the APIs, at least, that UOB had available to allow for that integration of our portal and provisioning and push the entitlements into UOB for a very seamless experience for our customers and their administrators.

But then there are other cases where, I think, APIs are really going to be appealing. And again, our customers being businesses, I see the potential for host-to-host integration where our customers will interact with us through their ERP systems. So instead of them going to our portal or our portal or the UOB user interphase will be an option and be used in some cases, there also be a very strong option for them to interact directly through their accounts payable and accounts receivables platforms. And so that's where I see the real growth. And then we talked about the Flying J use of merchant. Many of our customers use payment capabilities. So as they can -- so as ACI makes available their APIs, I'm hopeful that there will be a number of third-party solution providers that will align to the different industries our end businesses play, and allow them to interact with us through standard connectors. So the way I see it is, for those of you who are familiar with Salesforce, Salesforce has a number of capabilities in terms of standard APIs or standard connectors to -- in our case, to Moody's, to S&P to a variety of capabilities. And I would basically see something similar emerging over time with UOB.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

The open APIs and the integration with the ERP systems is an interesting twist that I didn't think about, but that allows you to compete with the much larger players that have a much more nationwide sort of footprint, correct?

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**Steven Fricano**

It absolutely does. As -- I mean, as a regional bank, my view is we shouldn't build what we can buy. We don't have the scale. I don't have the R&D dollars to really drive the innovation. So even if I can put something out there in the market, I can't maintain it and evolve it fast enough. And so as I will look at it, I need to look for partners and kind of an ecosystem that I'm plugged into. And I want to be plugged into a winning ecosystem, one that is driving innovation and driving breadth and depth of capabilities, and I see the open architecture as a key element of helping me achieve that.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

That's great. And then, have you seen tangible value now show up since you implemented UOB?

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**Steven Fricano**

So, yes, is the answer. So we were having issues with growth and retention from our commercial customers. We -- they didn't see the innovation. They didn't see the investment. And so with the investment, one, the direct feedback is, we are -- as -- many of our commercial customers have multiple banks. And so what the feedback has been is we are as good or better than most of the other options that they have. We've halted or slowed what the trend had been as far as customer attrition. And it's allowed us to compete much more effectively in new RFPs or sales situations. And so we've put together a growth strategy. And right now, UOB is helping us track to that plan.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

And real-time payments is a coming event. How are you thinking about that?

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**Steven Fricano**

So real -- I mean, real-time payments is interesting. Right now there are a number of banks and everybody can receive, but nobody is originating. So there is no liquidity at -- from a real-time payments perspective. I think the verdict is out in terms of how it will -- where it's going to grow. I have



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heard it'll cannibalize ACH. I hear it will cannibalize checks. It will generate net new growth in payments that -- digital payments that wouldn't have occurred. So there are a variety of things you hear. From a commercial banking perspective, I think the interesting dimension will be those that need real-time settlement or availability of funds. So in New England, one of the areas where we're strong is in fishing, the fishing industry. So if you think about it, anybody who has seen Wicked Tuna, as an example. So imagine this scenario where the fisherman pulls up to the dock, meets with the broker, agrees on a price, and actually receives payment into their account immediately. Those are the kinds of scenarios where I see real-time payments really having an impact, those that need access to the funds immediately. And so that's what I'm, I guess, envisioning as the real play. Things like payroll, I'm not sure that it's as much of a problem to schedule a ACH file 1 or 2 days out. I'm not sure that will be the killer app, bill pay certainly. Or for customers, we showed the example of buying the soccer ball, and that's interesting. But that -- I'm late on my rent payments, okay? And -- or I need to make a down payment or I need something to close. Or I'm on Craigslist and I want to go pick it up, and I want to take it with me here and now. I think there is real potential in those types of applications of real-time payments.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes, we're seeing that too. We have consumer -- I know you're big in consumer finance at Santander. Well actually, globally, we're seeing that as being an important component for our consumer finance customers as well. Sure, I need the mortgage payment. I need the mortgage payment today. Or delinquent customers and what have you, and actually having real funds show, show up, is critical. Any closing thoughts from you, Steve?

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**Steven Fricano**

No. I mean, the move to UOB is a very major undertaking. It's difficult, and from my experience, it went it well as I could have imagined, okay? Not that it was perfect, but it is really, really a significant undertaking. And I felt that the partnership that I had with ACI in being an Enterprise Banker customer and then moving to Universal Online Banker, I felt ACI knowing both ends of the continuum was a real advantage for us.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Yes. And it's where the bank comes together, right? So everything interfaces into UOB, which is basically the bank to your customer base.

Well, thank you for that, Steve.

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**Steven Fricano**

Thank you.

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**Daniel J. Frate** - ACI Worldwide, Inc. - Group President of ACI On Demand P&L

Well, thank you, everyone. Hopefully you enjoyed that segment, and really wanted to expose what our customers are realizing in terms of value from ACI, and I think you saw 3 definitive examples of that. Thank you. Now I'm going to hand it off to Craig.

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**Craig S. Saks** - ACI Worldwide, Inc. - COO

All right. Thanks very much, Dan and Mandy, but very especially, thank you so much to our customers. It's amazing when you see it show up in the real world. It's an absolutely wonderful proof point of the hard work that we do and the great solutions we have, and it's really exciting, actually. I sit there feeling fantastic and very optimistic, and not just naively so. There's actually a last word back to my Don Quixote that I'd like to end with which is a great Scrabble word. It's got a Q and a X and a C in it, and it's quixotic, which means exceedingly idealistic and impractical. And I hope that through this morning's conversation, you have seen that ACI and our customers are anything but that. We are pushing the envelope. We are doing very exciting things. We are optimistic for the future and for growth. But it's rooted in very real solutions and very real market opportunities



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backed up by 2 very strong execution organizations. And I think that bodes well and it's exciting. So thank you, again, to our customers that joined us today. It's a great validation. Thank you very much to Adam as a partner. Partners are an important part of how we can scale and do scale in many markets. And thank you very much to the ACI team that participated.

And with that, we're going to move on to our Q&A session. Scott and Phil will come up and join us. But Carolyn Homberger in front here, Head of Global Sales, is here. Eve Aretakis, who heads our product development, is here. Mandy and Dan, Mike and Jeremy are all available to take questions. So feel free to direct questions at any of the ACI team that you feel would be apt for what you'd like to discuss.

Thank you very much. Scott, Adam, Phil. Right. And John Kraft has got the roaming mic. So if you want to ask a question, please his way, and John will come up to you.

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## QUESTIONS AND ANSWERS

**John Kraft** - *ACI Worldwide, Inc. - VP of IR & Strategic Analysis*

Thank you. So I will hand over here for Brett.

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**Brett Richard Huff** - *Stephens Inc., Research Division - MD*

Thanks, John. And thanks to you all for this additional data, these days are always very helpful for us as analysts. So Brett Huff from Stephens. The one main question I have is, built on the back of the success of RPS that you talked about and the adoption, it seems we're moving now into activation phase, or I think that's the word that was used. Can you give us some nice concrete examples, if you have some at your fingertips, on how we're not just installing the software, but we're moving volume; you are actually seeing the volume starting to move. We get a lot of questions about that from our customers too, so would like to know that.

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**Craig S. Saks** - *ACI Worldwide, Inc. - COO*

Yes, sure. And I think maybe Mandy should weigh in there, seeing that it's Mandy there and she mentioned some of the use cases, just by her teeing it up. Remember, we're halfway through the renewal cycle with RPS, so you know a significant number of our customers have committed. There are still more to come. And in fact, what we're seeing is customers are coming to us and saying, we would like to get going sooner, because we see a real opportunity and advantage in the business case and in the opportunity. So it is tangible and perhaps Mandy, if you have 1 or 2 examples you would like to share from recent times. There's Mandy over there.

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**Mandy Killam** - *ACI Worldwide, Inc. - Group President of ACI on Premise P&L*

Yes, I gave a few examples of the use cases that we've seen. So a couple of customers have implemented RPS to open up channels for new transaction volumes, so things that weren't running on the legacy solution, but they're actually coming in. I gave the example of a couple of customers who have implemented a BASE24-eps to bring on China UnionPay or Amex transactions that they weren't running through the legacy solution. And then we have those customers in process right now that are actually implementing the Linux version that have plans then to move over. So I think there is good proof points of those projects in motion. We talked about the ones that are live. So I think we will start to see more. Our emphasis really is on new volumes first with customers, if we can do that. So I think that brings transaction share to ACI that we weren't seeing before. So that's obviously one of the things that we try and press on is, is they've got the option of moving at their own pace of what's running on, say classic or Postilion, if they're moving to eps. For us, we would like to help them go after net new, because it's net new to us as well. But we're obviously there to support them as they're starting to move over volumes too.



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**Craig S. Saks** - ACI Worldwide, Inc. - COO

And then maybe just for me to give you one other example, just because it's top of mind. I was with a customer on Friday looking at this. As one of -- in fact, they were looking at a number of different opportunities. One was, how do they combine the card with the real-time world, because the -- there is uncertainty in terms of how's the mix between card and real-time going to evolve over the next 5 years. And it's great that RPS can support both worlds. But another example that they were talking about, a lot of their back-ends are running on mainframes. And they are expensive. And one of the challenges that they're facing with open APIs is that every single time a customer lifts up their new iPhone X and they look at it, it opens up. And they no longer have to type in a user name and password and then they just do a balance inquiry by looking at their phone. And so they are finding that they are getting turkeys hammered by people that are doing balance inquiries because suddenly it's so easy, thanks to Apple. And they are just driving volume through the mainframe. And those of you who know how IBM's pricing models work on the mainframe is that they are just consuming their capacity, and they are staring a massive bull in the face. And they're looking at how they can use RPS, which they have got to stand in front of that, and actually do the stand-in balance capabilities of RPS and process all of those open API transactions, taking significant load off the expense of back-end, benefiting from the efficiencies and the scalability that comes with our Linux version. So that would be a practical example where, confronted with open APIs and a massive increase in volume, they're able to accommodate it at a lower and more efficient price point, while protecting their cost structures against their back-end systems.

And we're actually having quite a number of conversations. A similar one, just to close that out, is our speaking to another bank a few months ago. They're doing exactly the same thing, partly because they do not trust the scalability of their host. And they're scared that with all these open API transactions hammering their systems that their host won't keep up. And so they're actually also wanting to use RPS to front-end and abstract themselves from that traffic that is starting to hit them. So there is those kind of use cases that are coming through quite strongly, totally unexpected to us a couple of years ago, that are actually becoming a key part of the conversation.

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**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

Now Brett, I want to answer it financially a little bit. I think these use cases are really great examples that Mandy and Craig gave. And I think we're seeing an acceleration of those use cases right now. But I think the event that has taken place that we feel really good about is that we virtually have 100% of our customers who are -- they're renewing their relationship with us and they're renewing it under the RPS, which is they're taking the old and the new technology and therefore, have the opportunity to migrate across. And we're saying this, combined, to give you both the old technology and new technology, we want 25% to 30% improvement in your TCV, total contract value. Now if you just take the middle of that at 27.5%, that -- you're talking about 5.25%, is that's right? 5.25% of volume growth per year over the 5-year period, because we're talking about 5-year contract and whatnot. So I would say that it's wonderful that the customers are renewing at 100%. And actually there is no pushback on the 5 years. If anything, they are saying, "Gee, can I -- would you do this on 6 or 7 or whatever year," and that's a second positive, but they are asking for the 5. And then they are finding in the case -- they are doing POCs, and the big first step for them is not having, since they've re-upped with us, they really need to get to something like Linux where they can save that 45% to 90% on their -- because if you think of it from a relationship standpoint, before these price improvements, we were about 20% of the cost, hardware, middleware, database was 80%. If you can save 80% of 80%, that's actually a 64% total cost save. So their biggest opportunity is to move hardware, middleware. So that's the biggest payback they have. And then what I believe we're going to see is, we're going to see a second wave. Because as they move more and more things in and they say, "Oh, I can do real-time balances on this, I can do it," that is going to require incremental volume. And without going into names, some of the earliest guys that we've signed, maybe you talk about it a little bit, they've come back and said, "Whoops, we're going to need a lot more volume if we really execute this strategy." So I think we have only seen -- I only think we've seen the tip of iceberg in terms of what this could potentially give us when they get to that more efficient operating basis, whether they go to the public cloud or whether they convert it themselves. And we're seeing it -- we're seeing the whole array of different strategies, but they are very much moving towards the productivity that the new software will give.

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**Scott W. Behrens** - ACI Worldwide, Inc. - Senior EVP & CFO

Well, I think that's the biggest group point, right? It's that one of the early adopters, one of our largest customers that signed on our RPS in late 2016, we are now in negotiations with them for a top-up on their capacity volumes. So the proof point is, they're coming back within 2 years for more transaction volume.



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**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

And that was someone that one end was well at the high end of that 25% to 30% time -- first time in. So it's very encouraging. That's actually very encouraging.

**Craig S. Saks** - ACI Worldwide, Inc. - COO

And that's not an isolated incident. We've got a lot of, to Phil's point, a lot of customers saying, we want to do all this exciting stuff, it's going to take us a couple of years, let's talk about 2 cycles of renewal. And it's amazing, you see the step function in their long range planning between the first 5 years and the second 5 years in terms of the transaction volumes that they're talking to us about. So Jeremy's points about the extra \$200 billion transaction, it's actually showing up in those big step functions in terms of the long term thinking of our customers, driven by things like open APIs, like the consolidation of duplicate infrastructures and so on.

**Brett Richard Huff** - Stephens Inc., Research Division - MD

Thank you. First, Craig, I would like to agree with you. I would like to predict that Scott proves to be a sandbagger. So I was very intrigued by the \$1.5 trillion transactions that you don't feel your current product set addresses. You had very briefly mentioned product build and potential acquisitions. I thought you did a good job of explaining your market share opportunity on the 2.1. But can you address in a little more detail that \$1.5 trillion opportunity? And how you get after that?

**Craig S. Saks** - ACI Worldwide, Inc. - COO

Yes, sure, and I think, Jeremy?

**Jeremy Miles Marius Wilmot** - ACI Worldwide, Inc. - Executive VP and Chief Marketing & Revenue Officer

Yes. The \$1.5 trillion, a big portion of that are the ACH transactions that we see around the globe today. Typically, high volume domestic ACH. We don't have a solution today that we would go and try and compete for high-volume domestic ACH today. But that ACH, as we heard from some of the panel members, is going to cannibalized by real-time payments, by open banking. And we're already seeing that today. We're seeing that with Zelle in the U.S. We're seeing that in multiple markets. So that will be an example of the maturing of our existing solutions into new customer use cases that would then start bringing us into the \$1.5 trillion transactions. And ACH is actually the biggest portion of all the different categories in that \$1.5 trillion. So that's an example of that.

**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

I would like to answer it a different way too. I mean, I agree with everything what Jeremy said. And the only modification I would make is that, that opportunity is ACH debits, it's not ACH credits, right. And I agree with our good customer from Santander that ACH correct -- ACH system works totally fine putting money in your account. It's a totally different issue whether the withdrawal is good or it's efficient and whatnot. Where that whitespace really is, it's ACH. But it's the whole business-to-business element. We're strong in wholesale, which is bank-to-bank. And we are certainly strong at the point of sale. We have not demonstrated any commitment yet in terms of the B2B side of the equation. And the reason I wanted to bring that up is that I believe that is converging on to us. And I would be a little bit reluctant to purchase certain assets in that category. If you think it was taking place in terms of if you have a really good digital environment and you have really -- and mobile becomes more and more the tool, another way of thinking about mobile becoming more and more of a tool, those people who are locked into bank-to-corporate payments or they're in the AR/AP sides of corporations, once you start liberating their capabilities to mobile, it's going to really change the equation. And there is not going to be a whole new set of rails built in terms of how they do that. Everyone talks about, gee, immediate payments may or may not be successful. Banks, after being reluctant, reluctant, reluctant, they've embraced Zelle and they said, well, you're too late, Venmo's way ahead of you. They now

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do 3x the transactions that Venmo do and they do twice the average ticket. And they're just on the beginning of that. Well, a Zelle payment for a small business is an immediate payment. A Zelle payment -- and I get in trouble at work because I say, well, gee, where are we going in terms of having immediate payments or whatever, and they say, "Oh, no, no, that's TCH" or that's this or that. If you are a consumer and a customer, and whether you're a company, a small business, a PA or even a corporation, Oracle and [S&P] have told us, there is AR and there is AP and they are 2 separate things, and you have to build different tracks for them and whatnot. If you think about them as endpoints and APIs and whatnot, I could sit down and have a job that, gee, my job is the treasure -- I need to get x amount of AR brought in today, and that's going to help me manage my AP kind of appetite, you're going to watch these things' convergence, talking about having 13,000 endpoints. You're going to start seeing endpoints build themselves in that category. And in my career, I'm very proud of procurement card, corporate card and whatnot. They are really, really great high-expense ways of doing the B2B side of the business. As these other forms come into place, immediate -- and they're all around our TPS, real-time payment. I think we're going to see stuff, and I think there will be -- we're always courageous enough to buy assets and then take the business apart and put it back together again. And we get punished for the stuff that we get rid of. But the end, the end goal is something good. So I think we can be a lot more picky at this point what we would buy to augment it versus being more patient and let the marketplace come to be the strategy and the tools we put in place.

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### **Scott W. Behrens** - ACI Worldwide, Inc. - Senior EVP & CFO

Well, I feel a little bit compelled to defend my outlook. I would say next year, I think, you'll start to see us moving in the direction of that mid- to upper single digits. I think the on-prem is still on the mid. AOD, I think, will start moving into the upper single digits. But I think that a lot of our customers that are purchasing our real-time payment capabilities are doing so at a very low transaction volume, because they are not necessarily sure when the inflection point is going to come. But I would say if there is -- if there are drivers that could accelerate that growth, it would be a quicker adoption of real-time payments and a quicker ramp. I think that could drive transaction volume up over the 5 years; it could drive revenue up over the 5 years. And because it's already installed and there is really no incremental fulfillment cost for us to add the capacity, it will come at very high margins.

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### **Alexis Magee Huseby** - D.A. Davidson & Co., Research Division - Senior Research Associate

This is Alexis Huseby with D.A. Davidson. So given that we have seen that a draft Brexit deal hit yesterday afternoon, and also that, I believe, just under 10% of your revenue is coming from the U.K., I was just hoping you could comment on some of the range of outcomes that you're expecting with Brexit, specifically adjusting cross-border payment volumes and any potential of global banks moving their data centers. And then also if you think the uncertainty of a no deal might affect any IT purchasing decisions in the fourth quarter?

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### **Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

Let me answer that. I'll start now -- I'll start off for those who probably know us the least, so I apologize for those who know us well. We're an American software company whose international headquarters is Ireland, Free Republic of Ireland. So we are not -- it's not -- some people think it's England and it's not, right. So we're not disadvantaged as it relates to that. We have a good customer base both in the merchant and the bank and the intermediary side in England. Those businesses are between the United -- that business is between the United States and England. We revert -- to the extent that the pound has adjusted, we've already absorbed those changes in terms of the pound's adjustment to what's taking place. I don't believe that unless Brexit temporary agreement and finalized agreement changes Great Britain's mental set towards GPD, I want to say that correctly, GPDS?

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### **Unidentified Company Representative**

GTPR.



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**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

GTPR, which is the data privacy activities and whatnot, there is no sense that Great Britain is pulling out of that. There is no sense that -- first of all, the Europeans that put it in place, they haven't defined it very well, but they've put it in place. That is where things would get more difficult about data centers and whatnot. But the privacy still includes Great Britain. Our main data center for Europe is in Limerick, Ireland. Our backup facility is in Great Britain. And we have the ability -- we have the contractual deal with that data center we don't own. It's -- we have the contractual ability that throughout the term of that contract, we can move it anywhere in the world we want to move that back-up center. So we're not worried about it from that standpoint. We're not worried about from that standpoint either. So that's -- so any...

**Jeremy Miles Marius Wilmot** - ACI Worldwide, Inc. - Executive VP and Chief Marketing & Revenue Officer

The only thing I'd add is, I haven't seen a softening of our pipelines or a softening of the capacity requests from our U.K. customers. In fact, if anything, they've been buying more capacity this year than in prior years, probably because they need double-up, right, one in the continent and one for the U.K. So it hasn't had any interim impacts on the addressable opportunity as far as I have seen. I think, Carolyn, do you agree? Yes, Carolyn is nodding in agreement.

**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

I -- you don't want to play -- this is about ACI and whatnot. I worry more about Germany after Brexit and what it means -- I'm not going to get into that -- than I would worry about Great Britain.

**John Kraft** - ACI Worldwide, Inc. - VP of IR & Strategic Analysis

Other questions?

**Krista Tedder**

Krista Tedder from Javelin. Related to your 2 verticals, you have the on-prem and your cloud business. Historically, the on-prem, it's the larger enterprise companies that can afford to maintain technical staff, run it and everything. But now that you have more cloud-based technology and it's 40%, it opens up the market to a whole lot of new possibilities from a size perspective, more merchants, more financial institutions wanting to own their customer experience throughout. But then you have the balance of you also support the processors that are currently just servicing that market. How deep into the market do you want to go from a size perspective? And where do you want to really focus on the PSP processor relationships?

**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

I'll start. I don't think -- the formation of PSPs has been very -- has been a very important extension of what's going on globally in terms of payments. I believe that once cards created basically ubiquity of acceptance around the world, basically, once we hit the point that all credit cards are accepted any place in the world, we hit the point that anybody who wants to enter the payment world, that acceptance is not the issue. It's -- connection becomes, because Visa, MasterCard, Amex, so on, they can kind of keep everyone out of the propriety of their rails, but as long as you open that endpoint, you connect that endpoint. So just like in any industry, we're going to see a lot of PSPs get created because they're going to provide this connectivity and whatnot. I think we're going to see -- I think we have seen behavior where as if I'm a large acquirer or something, is it more rational for me to buy that PSP because the amount of volume I have in my hegemony, the area that I have a good control in, makes it more profitable. That same company is going to land up coming to someone like ACI and say, okay, that's my hegemony, now I need to connect to the rest of the world. And that's a lot of what we do. And then you're going to have smaller -- you're going to have PSPs who actually need us in terms of their ability. And they've got to decide what their exit or their continuity strategies are. So I'm very comfortable with where we are in terms of that. And I'm very comfortable supporting companies directly, supporting the PSPs and supporting the intermediaries that are there. Because this is a



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greenfield that is being grown up and whatnot. And the people who have the most -- 13-plus thousand endpoint -- the people that have the most to provide this growth should be very active in it. And so, I think, it's something we should be a global leader in. And I would say that we're actually seeing less and less of the acquirers thinking that buying up the PSPs is the way, and they're looking at a much more balanced strategy. You're closer to the market than I am in terms of...

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**Craig S. Saks** - ACI Worldwide, Inc. - COO

I think it's a dynamic that various -- the long time ACIs managed those who's direct and who's indirect through a PSP or an acquirer. That's not a new thing for us. And the model seems to be working out quite well. It really isn't so much a question of size, so much as a question of what the customer wants. If you want a highly differentiated customized experience, then you got to want to license on-premise if you can afford it. And with a public site now, I'd expect there is a new class of customer, maybe slightly smaller, some of the more FinTech start-up guys who may actually be able to start licensing our software and getting going quickly in the public cloud with a lower barrier to entry from an expense perspective. As we become more efficient, as you heard in AOD and we can ramp up customers more quickly and then more standardized in the platform, I do think that opens up a slightly wider addressable market. But you got to remember that the PSPs out there don't just offer the software, they're actually there on a bunch of services. And so customers are really thinking about, what are they looking for? Are they looking for independence? Or they're looking to outsource? If they're looking to provide or someone else to run it, what are they looking for? Are they looking for a technology-centric partner? Or they're looking for end-to-end acquiring service with everything that goes with that. And so customers ultimately choose. The good news for us is that we're a supplier to all of those different classes of providers. We would provide technology to acquirers, and if they are then sign up a whole bunch of people that is good for us. If some of those people like our AOD-shaped offering, then it's good for us if they come in as well. The benefit we have of being neutral in the marketplace, and we talk about ourselves as arms merchants, we have applicability through our 2 distribution models across the ecosystem, and actually meet the needs of the marketplace in a multitude of different ways quite effectively. And I think that's a continuation of what we have done for years.

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**Philip George Heasley** - ACI Worldwide, Inc. - CEO, President & Director

And one other -- I would respond to a statement that you made also, is that we are seeing much less the notion -- I think we went in the notion that smaller companies will use the platform, larger companies will install. What we're seeing is, yes, smaller companies and certain categories like merchants and corporates, they're more apt to use on-demand. But there are large customers are more apt to have both their own installed and use AOD in terms of how they deal with us. What mix works best? We're fine with that, right, in terms of supporting them.

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**John Kraft** - ACI Worldwide, Inc. - VP of IR & Strategic Analysis

We probably have time for one more.

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**Brett Richard Huff** - Stephens Inc., Research Division - MD

I will take that last one, if nobody else is. Brett Huff from Stephens again. Second question is, I think that I didn't understand how deep the rewrite of some of the products was as you guys rebuilt your data centers and as well modernized some of the code to fit in those data centers better to go from hosted to multi-tenant and on-demand. Can you just give us a quick review of the 3 or 4 or 5 main products you have there? And kind of where they started, hosted or whatever, and are they multi-tenant, or kind of where on that scale? Because, I think that's -- it's an important thing relative to the margin expansion that you all have talked about.

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**Craig S. Saks** - ACI Worldwide, Inc. - COO

So I think maybe Eve should start that. So Eve, Head of Product Development, is obviously doing all of that roadmap work. So in front to John? Eve needs the microphone, please.

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**Evanthia C. Aretakis** - ACI Worldwide, Inc. - EVP of Product Development

So I think each product's in various stages on the journey, but there are several things that are very consistent. One is the moves to Linux. You heard that through the theme that we have moved all the products. So it gives the customer basically a choice and obviously can leverage TCO. Second is on open source database. We're in the journey of post-graft and then also introducing DDR to be able to drive basically active to active for those products in an open source community, again, another choice for customers that we can provide in the open source database and they can leverage with significant savings across the board. Other thing we're doing is some of the product that had higher degree of customization, we build configurable options so that they can white-label and pick configuration choices versus having customization done, both from the perspective of an initial start in installation of the product, but also on it in terms of bringing better cost efficiencies on the maintainability because it shares a common code base. And then, of course, those white-labeling can allow them to address specific needs, whether it's strictly branding or also feature mix to their customer base. And so we're continuing in that process across the portfolio, giving them multi-tenancy capability and, of course, leveraging a common set of NFRs across the portfolio.

**Unidentified Company Representative**

That was your last question, I think.

**John Kraft** - ACI Worldwide, Inc. - VP of IR & Strategic Analysis

Well, thank you, everybody, and thanks to all those on the webcast that are listening. The slide deck we used today is on the website if anybody needs to access. And if anyone has questions, please reach out to me or really anyone on the team. We hope you enjoyed the show.

**Unidentified Company Representative**

Thank you.

**Craig S. Saks** - ACI Worldwide, Inc. - COO

Thank you very much.

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