VIAVID
communications simplified.

Visa, Inc.

2017 Investor Day

June 22, 2017

CORPORATE PARTICIPANTS

Jack Carsky, *Global Head of Investor Relations*

Al Kelly, *Chief Executive Officer*

Ryan McInerney, *President*

Jim McCarthy, *Executive Vice President, Innovation and Strategic Partnerships*

Jack Forestell, *Global Head of Merchant & Acquirer Solutions*

Oliver Jenkyn, *Group Executive, North America*

Chris Clark, *Group Executive, Asia Pacific*

Bill Sheedy, *Chief Executive Officer - Europe*

Rajat Taneja, *Executive Vice President, Technology & Operations*

Lynne Biggar, *Chief Marketing and Communications Officer*

Vasant Prabhu, *Chief Financial Officer*

CONFERENCE CALL PARTICIPANTS

Robert Napoli, *William Blair*

David Togut, *Evercore ISI*

Ramsey El-Assal, *Jefferies & Company*

James Faucette, *Morgan Stanley*

Darrin Peller, *Barclays*

Jim Schneider, *Goldman Sachs*

Christopher Donat, *Sandler O'Neill + Partners, L.P.*

Jamie Friedman, *Susquehanna Financial Group*

Jason Deleeuw, *Piper Jaffray*

Lisa Ellis, *Bernstein*

Alex Liloia, *Primecap*

Paulo Ribeiro, *BMO Capital Markets*

Bryan Keane, *Deutsche Bank*

Bill Carcache, *Nomura Instinet*

PRESENTATION

Jack Carsky:

I don't get that at home when I come back from work, I'll tell you that. Good morning everybody and welcome to Visa's now quadrennial Investor Day. On behalf of the Management team here in attendance and on behalf of all of us at Visa, thank you very much for joining today. We know it's a long trip out here for many of you, so it's much appreciated.

An equally warm welcome to those joining us today on the webcast. You won't get to enjoy the free lunch but you did save 1000 bucks on airfare.

A busy day planned. We know it goes pretty late for a lot of you. We appreciate it, but again, when you're only ginning these things up every four years, we want to give you as much value for your time as possible.

I hope many of you have already had the chance to engage out in the Innovation Area. There's a lot to see, a lot of new technologies that we've dutifully been working on for years, so do take the time to interact with the folks out there. They know their stuff and there's a lot to learn.

At the luncheon—this is just a sidebar—as we did four years ago, we will have members of Visa Management at each of the luncheon tables, with the exception of three tables that are reserved and for those of you sitting there, there's a table on the back of your nameplate. It's pretty much open seating and there's a chart in your packet that shows you who is at what table, so if you want to engage with Tech, you can engage with Tech. If you want to engage with something else, that'll be there too.

Lastly, I just want to acknowledge all the people who made the day possible, especially Laura Nadler who's sitting here in the first row, who spearheaded much of the coordination, generation and production of today's material. Thank you very much, Laura. Also, the members of Visa's illustrious IR team: Victoria Hyde-Dunn, Patrick Laney, and our newest addition Joon Huh who joined us about six months ago. Some of you have met him and hopefully most of you will get to do so again today.

Just lastly, we will put up the obligatory forward-looking statement. This is the highlight of every IR career in America. I'm not going to read it but I encourage you to do so.

With that, it is my pleasure to introduce our Chief Executive Officer, Al Kelly. Do you want to come up first?

Al Kelly:

Good morning everybody! Good morning. Thank you for being here. As most of you know I joined Visa in November of last year and I'm really happy to have the opportunity to be with all of you this morning. We really have a robust agenda, as you can see on this slide. You're going to hear from 10 Visa executives, myself and nine of my colleagues. We're going to set aside some good time for questions, and we have, as Jack mentioned, an Innovation Showcase out there for you to see and interact with our various products and solutions that are in the marketplace for our clients today.

My role today is to provide some background and some context for our strategy, and then set up for the rest of our executives to provide in and fill in detail for you. Whatever we don't cover, we'll tackle in Q&A.

The executive summary of today's presentation in its totality is the following. Our business has growth opportunities in payments volume, process transactions and revenue. We have two very strong differentiators, our global network and our brand. Our drive for growth is guided by a clear and sound strategy. We will invest as required behind that strategy, and lastly, our go-to-market action plans will be appropriately customized given that the starting points for countries are in fact different.

Our overarching business objective is to exponentially grow payment credentials and acceptance points around the globe to drive strong growth and great shareholder returns. Our objective very clearly is to be a long term growth company. Today, we don't plan to provide any specific medium or long term guidance, but we will lay out the case for why we believe we will grow for years to come as we have since the IPO. As you know, Visa stock has delivered strong growth since the IPO and over the most recent years.

Let's talk about our point of departure. The payments ecosystem is moving in ways and at a speed that we've never seen before and it's very exciting. Digital payments enabled by the Internet and mobile devices is growing the payments pie. Acceptance points are increasing. New payment forms via new technology continue to be introduced into the marketplace. More players are entering the payment space, playing an assortment of roles. Governments around the world are increasingly focused on payments from two points of view. The first is regulatory where governments are setting standards or policies or directives that in fact impact payments. Secondly, some governments are becoming positive activists with a goal of driving their citizens away from cash to digital and electronic payments. So we are seeing a number of governments actually become clients and we're working closely with them, and you'll hear about these partnerships with governments shortly from Ryan McInerney.

Finally, more and more consumers are entering the payment space every day. When we talk about our strategic point of arrival, it's critical to recognize the incredible suite of clients we have around the world. Our ability to grow with this current lineup of clients is substantial, and it is the top priority for us. Over the decades these terrific issuer partners have grown and today they issue 3 billion-plus Visa cards which in calendar year 2016 were used 162 billion times at 44 million merchant locations, and 2.5 million ATMs. When we talk about our starting point, we have spent decades building a truly incredible brand.

Later today, Lynne Biggar will provide a number of proof points to illustrate that our brand is in fact incredible and differentiated in terms of all competitive products. And as you'll see, the strength of our brand travels globally in compelling ways.

As we look to the future, a few other important points. One of the truly exciting aspects of the payments market is that it is very dynamic and one of the industries where the pie is actually growing every day. We are not having to battle for share in a static market. We're focused on putting cash out of business and getting more and more consumers into the payments market through more and more transactions on Visa cards.

The second point is that the future will not be the same as the past. A focus on enabling innovation and digital capabilities while ensuring we are integrated into the Internet of Things will be very important. We are maniacally focused on and extraordinarily passionate about our innovation agenda, which you'll hear much more about through the course of this morning and this afternoon.

The industry, as it always has, is changing, presenting both opportunities and challenges for us. Visa is no stranger to disruption and change. Throughout our history we have continually faced challenges. There is never a free lunch, although today's will be. We are very focused on the challenges and we're working hard to mitigate them. You'll again hear much more from others and me on these trends today.

Lastly, the basics remain critically important. Whatever the payments industry, wherever it goes, we must ensure that the ecosystem is convenient, reliable and secure and trusted. As we look ahead, the opportunities for growth are diverse and significant. I will outline the case for growth today and Ryan will then get into some of the sizing.

The number one growth lever is the conversion from check and cash to digital and electronic payments. Amazingly, despite the progress that we've made in card-based payments, the level of cash and check is greater today than it was five years ago. Growth will also come from a shift from the physical face-to-face world to digital. In this area, we are fully going to neutralize cash as a competitor, so the opportunity in both e- and mcommerce is large. As we look ahead, the emergence of new form factors, the opportunity becomes even greater. I will tell you we are not at all satisfied with 44 million merchant locations and 3 billion cards. We in fact have a huge opportunity to open new acceptance categories and acceptance points. The emergence of the Internet of Things will enable more devices to authenticate and transact growing usage of electronic payments. The commercial segment has been underserved as it relates to payments and this needs to change. There are hundreds of millions of people around the globe not participating in the payments ecosystem.

Despite the fact that we have the largest network in the world, expanding our network and access to it is a big area of focus for us in the coming years.

Lastly, as it has historically been the case, economic growth and growth in personal consumption expenditures will be a meaningful source of future growth for Visa. As I said earlier, we have always said we had to content with potential disruptors. At the top of the list is regulation. Our strategy has been and continues to be to engage proactively wherever we can.

That said, in our top 60 markets globally, 42 have regulated debit interchange and 38 have regulated credit interchange. Additionally though, about 20 governments are actively putting incentives in place to help drive citizens away from cash. These often include rebates in taxes for merchants and consumers to incentivize them to use electronic payments. So, for example, South Korea gives consumers income tax reductions and provides merchants with value-added tax credits while mandating card acceptance. These kinds of actions have the additional benefit to tax authorities giving them visibility into income.

There has been some growth in national payment systems. Ryan will address this challenge, but among other things, we're pushing for an even playing field. In terms of faster payments, Visa Direct, our primary solution to enable these types of transactions is in the market and it is scaling quickly. New entrants are coming into payment space every day. Ultimately this competition makes us better. Again, an even playing field is critically important.

In terms of China, it remains a long-term opportunity. You're actually not going to hear much about China today. The executive summary is that it is a very strong cross-border business for us. We're continuing to pursue a domestic license. We will be patient because it is such an important country, and we are also proactively investing in personnel, technology and community involvement so that we're ready to move quickly when the market in fact opens.

As we go through the day, you're going to hear about a number of themes which are important to our growth strategy. Open Visa. We are open to talk to anyone, anywhere to see how we might work together but these relationships must be supportive of the four-party (phon) model. We're also open in terms of our technology and innovation, and Rajat Taneja will talk more about that, as will Jim McCarthy, and talk about how we are in fact opening up our technology and innovation.

One size does not fit all. Our approaches to the markets will be very dependent, very different based on many, many factors that make those countries in fact different. As I said earlier, we'll never take our eye off the basis. Digital is increasingly becoming part of the DNA of Visa. Our clients are very important to us and engaging with them and collaborating with them on a continual basis is a hallmark of how we work. As we work with issuer, acquirer and merchant clients, our focus is about how to bring them new differentiated value and solutions to help them grow their businesses.

VisaNet is important and it's evolving, and our brand is important to us, to our clients and to our clients' consumers.

Let me know provide an overview of our strategy which is comprised of seven pillars. There are three foundational strategic pillars: transforming our technology, championing security and leveraging our world-class brand. At the core, Visa is a payments company. We're a B2B technology company so it's not surprising that a continual transformation of our technology is important.

As I said earlier, trust in payments is critically important. We take our responsibility to protect data and to have our network always available very seriously. And I've already highlighted the centrality and the importance of our brand.

There are three strategic growth pillars: drive digital; deepen partnerships, and expand access. Not surprisingly, these pillars are in keeping what I've already managed to message earlier today, but my colleagues want to talk much more about how we are putting these strategies into action.

The seventh pillar is developing the best talent. Talent is both a foundational pillar and a growth enablement pillar. Talent is so centrally important to me and to our company. We believe we have the best team in the business but we must strive to get better and better every day.

So as we go through the day, Ryan, Jim and Jack will cover the strategic growth pillars, as will our three regional executives, Oliver, Chris and Bill. Rajat will tackle the transform technology and champion security strategic pillars; Lynne will discuss our brand, and I will briefly discuss our talent pillar right now.

We have 101 offices in 69 countries around the world. Payments is inherently local and we are focusing on ensuring that we have a local presence everywhere we do business. So we are relatively early in a mission to proactively move more people from central hubs to the heart of the action in markets. Since 2015, we've placed employees in an additional 28 markets around the world. We will continue to move employees to more countries, and we'll increase the number of employees in existing country offices.

While we are a California, US-based employer, nearly three-quarters of our employees work outside of our headquarters, and about half of our employees work outside the United States. Our senior leadership has a terrific balance of tenured Visa experience and new talent who have joined the company in the last few years.

I'm a believer that a healthy organization has a mix of experienced leaders who know our clients, our processes, our culture, our products, etc., and new people who bring new experiences and relationships. They ask good questions, and frankly, they raise our standards of excellence.

We're also raising the bar in terms of leadership. We recently introduced leadership principles at Visa to instill in people the behaviors that we expect leaders to more overtly demonstrate on a day in and day out basis. We will be evaluating our leaders on those principles informally this fiscal year and more formally beginning in fiscal year '18.

In terms of talent, we have been investing heavily over the last two years in innovation, technology and digital experience. Recently, we established new hubs for attracting talent with these important skills. We've established Visa Research in Palo Alto just a few months ago, and we have a relatively new technology center in Bangalore, India that already has 1,000 employees working at it.

Talent is not a subject we take lightly at Visa. At every meeting of our top 25 people, our Operating Committee, we set aside time to talk about talent. We hold talent reviews. We've established Visa University with a few campuses and a remote learning capability to facilitate in-house training on a wide range of subjects throughout payments and including leadership, and we are working to continually improve our performance evaluation process, our coaching and our career development processes.

Through the course of today you will hear from about three of our five regions around the world: North America, Europe and Asia Pacific. Solely because of time constraints, we're not going to be able to spend time on Latin America or CEMEA, our Central Europe, Middle East and Africa region. Given that we're not going to be able to discuss these regions, let me just share a high level profile of each of these two regions, starting with CEMEA.

As you can see on this chart, it is region of incredible and diverse geographic coverage spanning 80+ countries. Despite macroeconomic challenges over the years, it has prove to be quite a resilient region and has a great business. One of the fastest growing businesses in Visa with 17% compounded annual growth in payment volume between 2014 and 2016. Despite the growth over the last few years, overall card penetration as a percentage of PCE is below 10% in many of the CEMEA countries and therefore remains a huge opportunity for Visa.

While the current business is driven mostly by developed countries, the future has in it many large populous and underpenetrated countries that have great potential, Pakistan, Nigeria and other African countries like Egypt, Kenya and Tanzania where PCE penetration is nascent and the fact that the opportunity to replace and displace cash is significant.

In order to grow in these underpenetrated emerging markets, we'll focus on mobile. CEMEA has a mobile penetration of 150% across adults in the country which is far higher than the banking penetration which sits at only 40% of the adults in that country, in that region. As a result, we're focusing our efforts to accelerate the deployment of low-cost acceptance solutions based on our QR code mobile solution mVisa. mVisa is currently installed in Nigeria and Kenya with a plan to scale the solution in neighboring countries over the coming months and years.

In the more developed markets, we will continue to accelerate card issuance and usage by enhancing and differentiating our product proposition specifically as it relates to premium products. Improving local appeal of our marketing assets; a recent example is the FIFA activation in Russia, and accelerating the deployment of our digital solutions like Visa Checkout. Across all of these countries in CEMEA, we will continue to work very closely with the governments and financial institutions to enable market-specific solutions to replace cash.

Now let's hop across the Atlantic and let's discuss Latin America's business. From a macroeconomic perspective, Latin America has some very interesting trends that suggest it will be an increasing region of growth as we look to the future. Currently Latin America is home to 625 million people with a working age population that's growing at a projected rate of 11%, one of the highest in the world over the next decade. Additionally, the region is expected to have a more stable economic outlook and it's attracting both domestic as well as foreign investment. The region also remains an incredible tourist destination for international visitors who prefer to use their Visa cards when they're in Latin America. The combination of stable economic trends and the low level of PCE penetration really makes this region a great growth opportunity.

In order to start capturing cash volume and set ourselves up for growth over the long term, we're focused on the following: expanding access in terms of merchant locations; bringing more consumers into the payments world; getting much closer to financial institutions like savings and loans and credit unions that are currently serving the mass market, and finally, we're trying to close the gap with the non-bank population.

Additionally in Latin America, we're looking to partner with governments and clients alike to drive more electronic payments. Several governments in Latin America are actively trying to eliminate cash and the informal economy and to reduce the costs of distributing government programs. For example, in Uruguay, consumers receive 4% cashback from the government when paying with a debit card. In Argentina, the government has mandated that all merchants accept debit. These types of actions are very helpful for us in advancing our objectives in this region.

We have very strong relationships with our clients in Latin America, which helps us build effective solutions for each market including digital solutions which leverage the fast-growing penetration of mobile phones and the early adoption of ecommerce.

While Bill Sheedy will cover Europe in much more detail, I do want to make a few high level observations given its importance and it's newness to the Visa family. We are off to a good start on all dimensions of integration, and I feel very good about our progress. In terms of revenue, we have the majority of our volume under contract well into the foreseeable future and we're making progress on updating our contracts to be on more commercial terms that incent volume increases.

On the expense side, we're largely done with Phase 1 where our focus was on reducing people count by streamlining processes and eliminating redundancies. Phase 2, which is about harmonizing our technology, is well under way but it's going to take time, but we believe that all our timelines are right as they should be and as we expected them to be.

While we are engaged a search for a new CEO in Europe, we have been very fortunate to have a long-time Visa leader Bill Sheedy serving as the interim CEO. Under Bill's leadership, we're building the European executive team which now includes a number of Europe veterans, a number of Europe Visa veterans who have moved from other regions to Europe and we've hired some people from the outside. That leadership configuration now mirrors the way we have built teams around the world in other regions. We're working with our clients to manage the impacts of PSD2 and we are working hard to import more innovation into Europe. We found Europe frankly behind in terms of digital capabilities and we're moving quickly to bring the full Visa tool set to Europe.

Speaking of innovation, I want to share a few words on this subject. It is an area of huge focus for us and we are investing behind it. Our approach is to be client-centric, solutions oriented and forward looking. We are also focusing in being pragmatic and making sure that as we think about innovation our solutions are in fact workable and scalable. Innovation is an ongoing journey for us and it's an integral part of how we do work at Visa today. We continually have new products and solutions for real pain points and other capabilities in various stages of the innovation lifecycle that are surfaced through one of three approaches to innovation. We have internal developers that build homegrown solutions. We have eight innovation centers around the globe where we work hand-in-hand with our client partners to collaborate on building solutions, and we've created the Visa developer platform where we make APIs available through developer.visa.com, so you can go to developer.visa.com as you're sitting here this morning, and see the APIs that are available, and we have external parties developing solutions for us. Again, you're going to hear a lot more about innovation and our commitment to it through the course of today. I also hope, as Jack said, that you will take some time during lunch or at the end of the formal meeting to experience some of these latest products in our showcase outside.

In closing, here are the takeaways that I hope you have at the end of the day. There is a lot of upside in the industry and for Visa. We are very well positioned and our focus is on winning profitable purchase volume. There will be challenges but we will work to mitigate them as they emerge. Our path forward is defined by our seven strategic pillars and we will make all the investments necessary to facilitate our growth.

Thank you and let me know turn it over to our president, Ryan McInerney. Ryan?

Ryan McInerney:

Good morning everyone. For those on the webcast, good morning, good afternoon, good evening. For those of you that I haven't met, my name is Ryan McInerney. As Al said, I'm a president. I've been at Visa for a little more than four years now. As Al mentioned, we really do have enormous growth opportunities in front of us. I'm going to spend some time talking about what these different opportunities are and give you a sense for the size of them.

There's three specific areas, as Al also mentioned, that we're investing in to capture these opportunities. I'm going to talk about the work that we're doing in each of these different areas; deepening partnerships, driving digital commerce and expanding access to Visa globally. While we constantly face threats and we constantly face increasing tough competition, we have very strong advantages and we're proactively addressing all of our challenges. Then finally, as Al mentioned, we tailor our approach market by market to ensure that our solutions are sufficiently relevant.

Let me turn to the opportunities themselves. Three different sets of opportunities. First is the core of our business all over the world, converting cash and check point of sale payments to electronic Visa payments. This remains an enormous opportunity. Al mentioned that it was bigger than it was five years ago. It's also bigger than it was when our company went public. There's approximately $17 trillion in spending around the world with cash and checks.

The second big opportunity is the way we all shop and buy, it's massively changing. Ecommerce and mobile commerce are growing extraordinarily fast, and we're investing an enormous amount of our resources to accelerate this growth. One important reason for this is, generally speaking, you can't use cash or checks to buy online. As a result, our share, Visa's share of digital commerce is more than twice in the digital world what it is in the physical world.

Then finally, we have several opportunities to expand our network capabilities to enable our clients to deliver smarter, faster, safer and cheaper payment solutions for a range of new use cases. Collectively, we see more than $30 trillion of addressable spend annually, albeit at lower yields than our traditional business, in these new segments.

As Al mentioned, underlying all of these opportunities is continued PCE growth and economic expansion all over the world. So, let's dive deeper into each one of these.

I mentioned that there was $17 trillion in cash and checks spent by consumers last year. Our economists measure these numbers regularly and what often surprises people is the numbers continue to creep up. Even though we and other players are converting massive segments of the world's spending to electronic solutions, we can't keep pace with the general trends of economic growth and personal spending growth around the world.

Between 2012 and 2016 cards have gained share on checks and cash from 31% in 2012 to 36% in 2016, and our volume, Visa volume, has grown almost 1.5X during the same time period. The cash opportunity around the world continues to grow. And it's not super concentrated in any one area. You see a map of the world here and where the cash and checks spending is spread around the world. In emerging and developing economies in Asia, Africa, the Middle East and Latin America, there's an enormous amount of cash spending, and despite our efforts we expect it'll continue to grow before it starts to shrink as these economies continue to expand. But even in the developed market, take the U.S., Canada, Australia, U.K., Japan, Germany, the list goes on, there's still a ton of cash and check spending. You're going to hear a lot more about this over the course of the day from Jack, Oliver, Bill and Chris in their presentations.

The second big opportunity is digital. In addition to all the direct work that we are doing with our partners to electronify cash spending around the world and move it on to Visa products, there's another very significant and very positive trend that's accelerating the shift from cash to Visa products. Quite simply, E&M commerce is gobbling up traditional retail all over the world, and cash and checks just don't work well in ecommerce.

Over the course of the next several years, E&M commerce is going to grow five times faster than physical commerce globally. The trend is even more pronounced as you'll see later in the day in the U.S. and other developed markets, and even with that growth, digital commerce will still be a small portion of total commerce around the world. There's a lot of room to keep growing.

The reason that we invest so much, the reason that we're so hungry to accelerate digital commerce growth is that we benefit significantly from every dollar of spending that moves from the storefront to computers, tablet, phones and other connected devices. In face-to-face retail Visa captures 15% of all spending, or said differently, as you see up on the slide in front of you, $0.15 of every dollar spent in the world, in the physical world, is on a Visa product, but in ecommerce, our share is more than double. We estimate that 43% of all ecommerce globally is on a Visa product. Said differently, for every $1 spent online, $0.43 is spent on a Visa product, and with only about 10% of global commerce happening online, there continues to be considerable upside here.

The last area of opportunity might be the most exciting in the long term. For most of our history, our capabilities have been focused on one simple use case: consumers and businesses buying at the point of sale. We've introduced new products - debit, credit, prepaid, et cetera, and we've targeted different segments, whether it be affluent, small business or corporate customers, and we've enabled the product to be used at different types of point of sale in different ways, whether it be EMV, contactless, started with MOTO and then to ecommerce, but the core of our business has been point of sale spending. For a number of different reasons that we'll talk about through the course of the day, we believe that there's a real opportunity to expand our network capabilities and expand our relationships and partners to enable a much broader set of payments on the Visa network. Collectively, these opportunities represent more than $30 trillion in addressable spend annually, albeit as I said earlier, at lower yields.

The primary opportunities, which you see on the slide, are person-to-person payments, disbursements, whether it be from governments or corporates to end consumers, and business-to-business payments. We're going to talk more about each of these in my presentation over the course of the rest of the day, but to capture these opportunities, we're expanding our capabilities, we're expanding our product sets and we're expanding our partnerships.

One of the new capabilities that enables us to serve some of these new segments is our push payment capabilities, or a product set that we call Visa Direct. Visa Direct is built on a very simple idea. For more than 60 years we've used the Visa network to pull money from one account and use our network to deliver it to another. For another, when I dipped my Visa card this morning at Starbucks, Visa pulled the money from my bank account and it transferred it to Starbucks. We ask ourselves, why not reverse the flow: enable a person, a business or a government to push money over our network to another card, and this is exactly what Visa Direct does. We enable our partners, whether they be banks, merchants, governments or others to push funds over our network. The beauty of Visa Direct is that it leverages our existing network connections, our existing rules, processes, existing key controls that are built into the network such as AML, KYC or OFAC, and it leverages our existing security protocols and risking scoring methodologies. We really started expanding our capabilities in this space last year, and as you can see up on the slide, our business is growing significantly. In the second quarter we processed $12 billion on Visa Direct, up 65% from just last year.

Visa Direct solves so-called fast payment use cases very effectively. We have approximately 1 billion Visa debit cards all around the world, already enabled with fast funds capabilities. What this means is they have real-time posting and real-time funds availability after they're given a push payment. Visa Direct requires a significantly lower investment and enables partners to get up to speed much faster than they would if they had to build new systems or new capabilities, and Visa Direct has a global presence, something no other ACH system can provide.

The global presence is really attractive for non-FI partners such as an Uber or a Google which are looking for a single operator to allow them to disburse funds in multiple countries. We enable these partners to build once and maximize our global reach.

The biggest pain point for global operators is to accommodate every local payment scheme around the world. It's complex, it slows their time to market. We offer one global platform accessible via our APIs.

Now let me talk about another set of capabilities that's enable us to service some of the other segments. The B2B segment is a significant expansion opportunity. The bulk of the spend today is on checks and ACH. In fact, in 2016, businesses in the U.S. made over half of their B2B payments via check, a process that's time consuming, expensive and slow. Visa has been investing in new capabilities to process these transactions on our network. Let me give you a couple of examples that are up on the slide. The first example is the corporate travel space. Dealing with travel payments for airlines, hotels and other services, especially compliance and reconciliation, inside of a big company is a mess. It's a pain. We developed tokenized single use virtual cards that enable companies to issue one-time cards that can be used at authorized vendors for authorized purchases. And all the payments are integrated and easily reconciled across the company's entire spending.

The second opportunity you see up here is accounts payable, it's an even bigger opportunity. Here we've developed a full suite of capabilities to automate payments based on electronic invoices. Then we run payments to suppliers over our network. We typically partner with third parties such as BillTrust who are the ones who actually manage the full invoicing process for large multinational corporations, and what we've done is we've integrated our invoice to payment capabilities directly into their platforms. Additionally, we're building new capabilities to enable Visa payments for healthcare using Visa Direct, and B2B marketplaces by enriching the transaction data.

So let me pull back here for a minute and just summarize the opportunity. We have a very big opportunity. Converting cash and check to Visa cards remains a massive opportunity all around the world. Spending is rapidly shifting from physical to digital and we capture more than double our share for every dollar that moves, and there's very large opportunities to expand our network capabilities to provide new products and services to enable payments in new segments.

Now let me shift a bit and talk about what we're doing at Visa to capture these opportunities.

As you heard from Al, there's three strategic growth levers that we're pursuing. One is developing deep, strong long-lasting partnerships with our clients. The lever is digital, and we continue to invest significant portion of our resources to enable and accelerate digital commerce all over the world. The third is we're investing in products, solutions and partnerships to expand access to the Visa network. I'll explain more about each of these over the course of the next several slides. Let's start with our partnerships.

Visa is the essence of a partner-based business. Our entire business model is built on partnerships. On the issuing side of the business, we partner with banks all over the world to deliver the best payment products in the industry. Our bank partners own the direct relationship with consumers; those are our banks' customers, and we work hard every day to support our banks in deepening and extending their customer relationships.

In addition, on the acceptance side of things, we partner with 3,000 acquirers who've enabled acceptance at more than 44 million merchant locations around the world. While we've developed direct relationships with a small number of our largest merchants, almost everything we do is delivered through acquirer partners.

Most of you know well about these, our issuing and merchant partnerships; however, increasingly we're developing deep relationships with strategic partners who are neither issuers nor merchants. Stripe or Android are good examples here, and we're also doing a lot of work partnering with governments, as Al mentioned, so I'll talk more about each of these four types of partners.

Most of you know about the basic work that we do with issuers. But beyond these basic capabilities, we have built deep relationships with issuers all around the world by delivering a full range of value-added solutions and capabilities. We think about them in three different areas. First, we deliver a range of solutions to help issuers improve their overall business performance. The most basic example here is out debit issuer processing business, what you see listed first on the slide, we call DPS. DPS is one of the largest third-party debit issuer servicing platforms in the world. For our U.S. clients we do everything, from provide online banking to monthly statements to customer service, to for some of clients, building, managing and hosting their entire mobile banking platform. We're a full-service end-to-end solution for debit clients, and we provide these services to many of the largest banks in the United States.

Another example, right below it, is Visa Performance Solutions. These are our consulting services. We work side-by-side with clients all over the world on a full range of services. We work on strategy, benchmarking, portfolio optimization, risk management, digital services and a number of other ways to help our clients.

A third example you see listed here is Integrated Marketing Solutions. We provide our issuing clients end-to-end marketing platform. We do segmentation, list generation, targeting and we go all the way through execution of their marketing programs. We literally send the mail to them.

So as you can see, there's a lot of different things we do to help our issuing clients improve their overall business.

The second area where we help issuers is enabling a great buying experience. A good example here is card level transaction controls. These enable cardholders to turn on or turn off their Visa card for say international travel or ecommerce. We provide this service to issuers via an API that they can directly integrate into their mobile banking platform. This allows them to deliver a great experience to their cardholders and save the technology resources that would be required to build the capability themselves.

Then finally, we deliver a full range of services to help our clients reduce fraud and increase security. A perfect example here is advanced authorization. Every time those of you in the audience use your Visa card, Visa Advanced Authorization evaluates up to 500 different data points to determine if the transaction is genuine or if it's fraudulent. We calculate a risk score in a fraction of seconds, and then we send the information to our issuer which they use to either approve, decline or flag the transaction as suspicious so they can follow-up with the cardholder. They often use the second one of our services which is Visa Risk Manager to do this.

Visa Risk Manager is a cloud-based case management solution that allows issuers to review and investigate any of these suspicious transactions. Because it's web-based, our clients can get up and running within a matter of days with this case management solution versus the 6 to 12 months that it often takes to install and manage software from other third parties.

A third example here is Mobile Location Confirmation. The provides real-time geolocation data that compares a cardholders cell phone location with the merchant location where the card is being used. What we do is we provide issuers with a small piece of code, an SDK, that they install into their mobile app. When the cardholder uses one of our cards, we compare the merchant's location with the most recent cell phone location for the cardholder and then we inform the issuer if the locations match. This allows them to either approve or decline the transaction with a lot more confidence.

So that gives you a sense of the different services and solutions that we're providing to deepen our relationships with our issuer partners. The story is similar for our merchant partners. Jack and others will go into a lot more detail here as the day progresses, but here, too, we're delivering a full suite of solutions to help merchants improve their overall business performance.

Things like Visa Commerce Network which drive new customers into their stores by delivering highly targeted, hyperlocal offers to Visa cardholders, or Visa Advertising Solutions which helps many leading retailers and other advertisers build target audiences for their advertising campaigns, and then measure the effectiveness of those advertising campaigns. We also work with acquirers and merchants to provide merchant measurement tools. These help merchants measure key metrics, such as share of wallet, at a very granular level.

Our best examples in terms of helping merchants enable a great buying experience are our gateway services, Cybersource and Authorize.net which is a commerce engine for thousands of ecommerce merchants all over the world.

Then finally, our solutions that help reduce fraud and increase security. There's two great examples here, our Decision Manager product and Cardinal Commerce, both of which help reduce fraud and both of which Jack is going to go into in a lot more detail later in the day.

Overall, this portfolio of solutions that we provide to our merchants, together with the solutions I mentioned earlier that we provide to our issuers generates more than $2 billion of annual revenue for Visa.

Now I want to go to the third group of partners that I mentioned, which were the strategic partners. Beyond our core issuing and acquiring and merchant partners, we're building deep relationships with a range of strategic partners that are playing an increasingly important role across the ecosystem. Jim C. manages these relationships for us globally and he'll talk a lot more about it in his presentation, but generally they fall into three categories of partners. There's the platform players, players like Android and Microsoft; commerce enablers, players like Stripe or Square; and then there's a long and growing list of players in the IoT space. The common theme across our relationship and engagement with all of these players is that we're developing deep commercial arrangements that strengthen and extend the four party model.

The last of the key partnership areas that Al mentioned is governments. In many countries around the world, governments are some of the most important clients that we have, and our teams all over the world treat governments like we would any other important client. We have coverage plans; we know who is covering which government official. We develop strategic solutions and we're showing up regularly with ideas, real ideas about how we can meet the needs of the government which often center on eliminating cash to reduce corruption and reduce the shadow economy which is not currently taxed.

It often starts with basic but constructive engagement. This is where we are with China these days. It's about education and relationship building. Then we move on to building standards and basic capabilities. We've been very active in India on this front recently. Chris is going to talk more about both China and India, so I'll leave it at that with those.

As you move up the slide you see Poland. Poland is a great example of the positive impact that deeper government engagement can have. Bill's going to go into a lot more detail on Poland in his presentation, but let me go deeper on Egypt. Egypt is a great example. We started engaging with the Egyptian government two years ago in a consulting engagement. They asked us to think about ways and help present ideas to them about how they could run one of their subsidy programs more efficiently. Government subsidy programs in Egypt are a big deal. They're more than 50% of PCE. That work led to relationships with other ministries which led to relationships with other subsidy programs, which ultimately led to me meeting with President Sisi a little more than a month ago in Cairo to sign an MOU outlining a path for us to create a new 10-year exclusive public-private partnership to electronify government spending for all of Egypt's subsidy programs including payroll, pensions, and subsidies for things such as food, energy and healthcare. The program will result in 60 million new Visa accounts, basically a Visa card for every adult Egyptian, and more than 250,000 new acceptance locations.

So that gives you a summary of the work we're doing to develop deep strong partnerships with our clients, issuers, acquirers, merchants, strategic partnerships, partners in governments. Now let's talk briefly about what we're doing on the second theme which is digital.

I only have one slide on this topic because almost all my colleagues going to go into it in a lot more detail. Payments is a critical, maybe the most critical element of digital commerce. If debit cards are not activated for ecommerce, like many of the card in India or parts of Latin America, ecommerce will grow much more slowly and companies will generally develop workarounds using cash and check, or on the other end of the spectrum, if companies can't figure out how to integrate safe and secure payments into voice-enabled platforms, they're not going to be able to activate new commerce models. So with this as background, let me walk you through what we're doing.

The first is the basics, which you see up on this slide. We spend a lot of our time, and a lot of resources, all around the world, working side by side with issuers and merchants to simply enable ecommerce. Even today as we stand here, we have tens of millions of Visa cards all around the world which aren't even activated for ecommerce. We work with issuers to introduce risk scoring methodologies, zero liability policies and calibrate their fraud tools so that they can activate these cards. We also work with merchants to put in place gateway services to enable basic ecommerce solutions. Then we partner with both issuers and merchants to help increase authorization rates. In some cross-border corridors we have authorization rates for large merchants that are 10, 20 or 30 percentage points lower than they should be, and often because the issuer and the merchants just don't have the data that they need to authorize the transaction.

The second thing that we're doing is constantly evolving and improving our suite of security solutions: tokenization, 3-D Secure 2.0, Decision Manager and all the capabilities that we're bringing to market on this front.

The third area we focus on is in ease of use, and the fact of the matter is it's just still too hard to use your Visa card to buy things online, even on a computer today but especially as the device gets smaller. We've been constantly improving and evolving Visa Checkout since we rolled it out just three years ago, and we'll continue to innovate on the platform and expand it to new use cases. We've also partnered with many different players which many of you are familiar with in the ecosystem to enable simpler and easier ways to pay.

The final area we focus on is new commerce models. We partner with all types of different players to imagine, design and develop new commerce models built on safe, simple and easy payment methods, and Jim is going to talk a lot more about this in his presentation.

Now let me turn to the third and the final area, which is expanding access. This has been at the core of what Visa's been doing since the beginning. As you see on this chart, we've made enormous progress expanding the number of Visa cards and acceptance locations over the years. We hit 1 billion cards in the year 2001, 2 billion cards in the year 2008, and recently surpassed 3 billion cards, and on the acceptance side of things we've grown to 44 million merchant locations at a similar pace.

We're actively working to continue to push those curves higher. We still have enormous opportunity on this front. We have an opportunity to issue new core products - debit, credit and prepaid products, especially in emerging and developing markets - and even in developed markets we're expanding in the range of new products that we offer. You'll hear from Jack and others soon about the things we're doing on the right-hand side. We have a significant opportunity to further expand acceptance in the physical world. Point of sale solutions are getting cheaper and smarter every day, and the timelines to bring up new merchants are compressing from weeks and months to seconds and minutes. All of this is enabling us to penetrate new big segments in the economy all over the world.

But the truly transformational phenomenon that's happening is the massive wave of connectivity that we're all experiencing as consumers. Everything in our lives, our jewelry, our devices, our cars, the taxis we ride in, our homes, the cities we live in, the places we shop, they're all being connected. By all reasonable estimates, there's billions of connected devices today and there'll be tens of billions soon. We're working to actively embed Visa payment technology and tokenized credentials into each and every one of these devices. Quite simply, our goal is to enable each and every connected device as a safe, simple and easy way to pay or be paid, which is driving a massive explosion in the size and the scale of the Visa network.

We're down a path right now to move from a network with 3 billion cards and 44 million merchant locations, to a network that has an order of magnitude more access points, something on the order of 30 billion ways to pay and more than 400 million ways to be paid, a 10X increase in the size and the scale of our network.

So just to summarize for a moment, we now have a big opportunity in front of us - cash, digital, and new segments. We're attacking these new opportunities systematically, building deep partnerships, expanding digital and expanding access to our network.

I now want to transition to two other topics: how we're proactively managing some of the risks that we face, and how we're tailoring our approaches market by market.

Let me start with the first of these challenges. It's not really an emerging challenge per se, it's something that we've had to deal with consistently for many years, and we'll continue to have to deal with for many years. In many of the markets that we operate in, for a range of different reasons, the local governments have sponsored, supported, mandated or in several cases launched and managed their own domestic payment schemes. While these competitors have some real advantages - government mandates are a massive advantage - they often have big limitations, such as domestic only acceptance, weaker products, limited to no digital capabilities and especially as we move forward into the future, they'll have a very difficult time keeping pace with the scale and the breadth of innovation and investment required to stay relevant for their cardholders in their countries.

So we'll continue to leverage our advantages, which are laid out on the slide here, and compete aggressively with these competitors market by market. But we'll also continue to engage, engage with governments and show them the benefits of more open competition and more open partnerships.

A threat that really is emerging is what people often refer to as 'faster payments'. As I mentioned earlier, we have built and launched a set of capabilities to deliver fast payments on the Visa network. While others are talking about fast payments, we are processing billions of dollars of fast payments. Our advantages here are significant. Most notably we have a proven global network that has existing connections to billions of cards and tens of millions of merchants. We have established rules and processes plus proven security protocols and compliance tools. In addition, as Al mentioned, we have a credible and a trusted brand. So we'll continue to invest significantly to use our network, the Visa network, to enable new use cases and serve new customer segments.

As I mentioned earlier, there's a number of large, significant players in the ecosystem, some of which can be very disruptive for our business. Our approach here has always been to try to partner: establish a commercial agreement that's beneficial to both companies and supports the four party model, especially the relationship that our issuers have with their end consumers. Some players have chosen not to partner and chosen to go out on their own. Others have partnered with us but could very well decide to go off on their own in the future; we recognize that. But at the end of the day, we've built an incredible global network. It's time consuming and very costly to try to replicate it, and our belief is that these so-called technology disruptors will view Visa as a commerce platform, a platform that's available to them with easy to use and integrate APIs, and simple and ready to go commercial terms. Essentially, a turnkey commerce platform that offers immediate connections to billions of consumers and millions of merchants around the world. These players can innovate on the user experience, the commerce experience or any other way that they can improve commerce, but use our platform to do so. Some will choose to go a different way, and with those we'll continue to compete vigorously to protect our business.

I want to close by briefly mentioning our teams around the world and how we're going to market. Al alluded to this: we have the best people in the business. Period. And as Al mentioned, people matter in this business. We have a great brand. We have a great technology. We have great products, but at the end of the day our clients need great people that can help them deliver for their business, and our people all around the world are the best in the business. They're executing strategies that vary market by market.

We think about the world broadly in three different types of markets, which you see up on this slide, whether they be emerging, developing or developed. The reality is is that the needs and problems are often even country-specific. So as we go through the day, you're going to get specific examples of how we're tailoring our strategies in these different types of markets and in specific countries around the world.

I'm going to close where I started, which is we have enormous growth potential ahead of us. We're investing in three sets of strategies to capture this opportunity, and while we have tough competition and real challenges, we have strong capabilities and plans to mitigate the risks, and we have an outstanding team all around the world that's tailoring its approaches market by market to ensure that we're successful.

So, thanks for the time this morning and I'd like now to introduce my partner Jim McCarthy.

Jim McCarthy:

Thank you, sir. Good morning everybody. As Ryan said, I'm Jim McCarthy. I'm the Executive Vice President of Innovation and Strategic Partnerships at Visa. I've been here 18 years at Visa, so I'm one of the 42% of folks that Al referred to earlier that have been here for quite a while so I've seen lots of change. While I'm going to talk about our innovation agenda, and I'll go deeper on some of the things Ryan and Al both talked about, you know, I'll be straight up that I think where we sit today I've never been more excited. When I left IBM after 13 years to come to Visa, I came for this reason and this moment in time. The fact that technology is converging with payments and payments is converging in the cloud has never been a more exciting time for Visa in terms of the opportunities. So let me dimension that a little bit further and give you a sense of what I'll talk about today.

Number one, the rise of the mobile Internet, both Ryan and Al talked about, providing more opportunity for us to extend the range of our network, right? So again, a huge inflection point for us.

The second thing, the decomposition of the Visa network, which has historically been effectively one pipe into a bunch of building blocks or APIs, allowing us to do things differently than we've ever done before with our clients around the globe; we'll go into more detail on that, but again, allows us to be more nimble, more agile and more quick to market in unique ways.

Then last but not least, the long tail, the Internet of Things as Ryan and Al described. I mean the opportunity to participate in new ways of commerce and the things we're doing programmatically to address those opportunities.

Those are the three things I'd like to talk about, so let me start first with a little bit of the past because I think the past is in this case a prologue to the future. Number one, innovation is in our DNA in Visa. We were there at the beginning when Bank of America introduced the concept of the general purpose card in the late 1950s. Again, I think it's really interesting when you think about that. I would argue it was one of the first agile tests in the financial services business, when Bank of America took the leap and dropped 60,000 pieces of mail to Fresno, California to test this concept of the general purpose card. Remember, at that point in time most consumers had a direct relationship, a one-to-one relationship with a merchant who extended credit. Then in 1958, Bank of America dropped 60,000 pieces of mail to test the ability for a consumer to have a line of credit that travels with them. So, we were there at the beginning of this as Bank of America introduced this concept.

Now, flash forward to 1966, another major innovation, and something that I'll come back to when I talk about the developer platform, but Bank of America decided to take a really, really strategic decision and they opened their network. They decided to license what had been a closed loop network, having consumers and merchants acquired by the bank, they opened it up. So you see here an ad from 1969 where by opening it up they moved to in this case a couple of countries - South Africa, Great Britain, Canada, the U.K., and South Africa, and then with 48 states, but the beginnings of the seeds of the network and the network effect were born. They went from in 1966 2 million cards to north of 40 million cards by 1970 as a result of this.

Then another major trend and inflection point was occurring at the same time, and again, as is often times in life, being at the right point in time is important, so in 1973 Bank of America did something else that was really cool; they took advantage of the advent of the modern computer age and they created what I would argue is one of the first platforms of service in VisaNet, right, our core network capability. As a matter of fact, just to give you a sense for it, the authorization system, which was our first attempt to go from paper based to electronic processing was called BASE1. It stood for Bank of America Systems Experiment. So, again, just being on the forefront of innovation and taking advantage of the changes in the marketplace to expand the network and evolve the network, and so VisaNet was born in 1973.

Then flash forward to the late 90s, as the world connected through the world wide web. We all think about the late 90s, web 1.0, Amazon and eBay go online and we go from retail which was effectively a face to face environment, Monday to Friday, maybe Monday to Saturday in a lot of places, 9 to 5 to 24x7 online all the time. Again, me like a lot of you, you look back on it and you think, "Wow, I could do transactions all the time anywhere," but the fact was our cloud, VisaNet was constrained by the very fact that in order to do commerce, whether it be face to face or even online required the two things you see on here: a phone cable and a power supply, right? So even though we were a platform of service, the network only worked where you had two of those and when you look at a map of the world at night, we only work where you see light and imagine there was a lot of commerce going on in places where you see dark on that page, and as Ryan and Al both talked about, it was cash because that's how business had to occur because we couldn't electronify if you didn't have a wired line cable and a telephone line. So, what happened? We got lucky again, the mobile Internet. The middle of the 2000s, I guess that's next week, 10 years ago the iPhone was born, right? So as we sit here today with 5 billion plus mobile devices around the world, our cloud VisaNet touches the ground, and so what does that do? Just from the total addressable market space, the map looks like this now. So VisaNet has the ability to connect, as Ryan talked about the higher degree of connectivity, to devices now in places that we couldn't reach before. So our network, connecting to the mobile Internet now connects to devices in places where commerce is occurring all around the world.

So, you know, our core asset being VisaNet continues to be in place, but connectivity isn't enough. Ryan talked a lot about connecting to devices, but when you service 200 plus markets like we do, we have 17,000 financial institutions that connect. We've got 44 million merchants that connect. They're all in those markets trying to do things differently. They're trying to build their businesses, those markets are unique. They're all struggling with increasingly digital clients hell that want to do things differently. So we had to reimagine the edge of our network. So, while VisaNet is still the core, we've now decomposed the network, as I talked about, into a set of assets, and exposed it to our Visa developer platform.

What's an API? It's one of these concepts that's very kind esoteric, but think of it as a set of building blocks or Lego where when we decompose the network and expose our capabilities as unique bespoked assets, we can mash them up with others. As a matter of fact, if you look at the showcase you'll see the building blocks out there just to give you a sense for how we think about our network these days.

So we've exposed the network now as a set of building blocks, and when we talk about opening the network, the fact is that who we think about every day when we wake up are our current clients, right? Because we're a payment system. So we connect through our network to financial institutions around the world and merchants around the world to take our core network and do things differently, and that will continue. But because we've now made it easy to consume as Ryan talked about, we can now partner with some of the world's most innovative technology companies, to take advantage of what they're doing with mobile devices, with web services, with messaging platforms, to create the next generation of Visa and commerce capabilities that we couldn't do before because we were constrained not only by the range of our network but by the fact that that we had builds that came out twice a year.

Now in decomposing the network and having the mobile Internet, we can really think differently about the payment stack and how we play, and how we combine these assets to create new use cases, right? So the Visa payment stack is very different because no longer is it take this Visa product, but we're able to actually think differently about how we service our clients' needs. Let me start at the bottom and I'll start working my way up to the top to talk about these use cases. Let's talk about the foundation first, the Visa Developer Platform.

Really simple, right? I mentioned Bank of America opening the network. We're opening our network again to the developer platform. So effectively by exposing the VisaNet as a set of services to the world at large through this Visa developer portal that Al gave you guys the address to - maybe some of you are coding right now; you can show me it later. We now have 60-plus web services and APIs that a developer anywhere around the world can take advantage of and start to build new commerce experiences. We have a sandbox that has a full set of test data so they can actually test that code in real time and see that it works. More importantly, it's not just for external development; we're eating our own dog food. We used to be a company that built products and we would sit and build these product stacks that would take us years to get to market and by the time we got to the market we'd find out that we missed the market or we didn't get it quite right and you go back to the beginning. So, by doing this as a set of bespoke APIs, we can get to market faster and we're using these APIs in our innovation centers to co-create with our clients. Let me spend a little bit of time on this concept.

As I said, the APIs, we're moving from a discussion of products to a discussion of solutions. As I said, we're in 200-plus markets. We've got 17,000 clients, 44 million merchants that all want to do things differently at their own pace to serve those clients in a unique way. So now, by taking this apart we can actually focus on clients, be more agile, deepen the partnerships. These aren't just words; this is reality now. It's the first time in my 18 years at Visa that we can really do these things and it's why I'm most excited.

Again, it's not just authorization, clearing and settlement; it's value-added services, it's risk services, it's tokenization services, it's digital, it's mobile, and it's all at a bespoke level via these APIs. So as we think about some of these APIs, let me give you some of the most important ones and try to make an API something that's real and tangible to you. One of the most important ones that I'll talk about in several of these use cases is the token API, right? We as an industry love to come up with these words to make it sound like these are really important concepts, but we've been in the token business for 50 years. I imagine most of you have a DDA. If I pull out my debit card, you see a 16-digit number that doesn't equal the routing number or the checking account number that I have in my checkbook, right? This is a token, it represents the underlying store or value. Well, in a digital world, Ryan talked about devices. You see the devices on this page, our cards have serviced us well but you don't have a refrigerator that's got an EMV chip reader on it, right? My Apple device doesn't have an EMV chip reader but it does have a chip inside of it, or we have cloud services. So all we've done with tokens is turn that card, that 16-digit number, we put a digital wrapper on it and it allows us to put it into these digital devices, so it gives us the ability to scale into all the new digital and mobile devices that are coming.

Think about that for a second. You just an example of some of those. There's going to be lots of these, including card on file and in-app experiences. So we've got to make it easy for our clients to connect to us and then push to all of these, and so we've created a new network hub for visioning API, something we announced about a month ago, that allows an issuer to connect to us once through an API and push once to all those devices on behalf of their consumers, so this gets us scale.

Then last, think about the fact that now we've moved into the digital space. So now instead of an analogue piece of plastic that you can't do much with, because we're in software, and Ryan mentioned this, we can now expose a bunch of other APIs that allow that consumer through their issuer to control these things. Think of your mobile banking app as a command and control center for all the places that your card is now exposed and how and when and where you decide to use it, right? So that's another set of APIs we introduce.

Then last but not least, another API that you'll hear about as I talk about some of the use cases is the push API, something that both Al and Ryan referred to. Again, all this is is reversing the flow to the Visa network. I mean it's something that's just staring us in the face and we're finally taking advantage of it. We've all taken goods back to a merchant and had a refund. Well, that's a push, right? You take the good back to the merchant and the merchant then pushes a credit to back to your credit card or your debit card. Well we, as Ryan talked about, have hardened that and expanded the functionality of that message to create a whole new set of use cases based on this API, and I'll come back to that in a second.

What I'd like to do for the remainder of my time is talk about some of these use cases, how we take our building blocks, our APIs, combine them with our clients' APIs, financial institutions around the globe, combine those then with third party APIs, whether it be messaging platforms or mobile or technology platforms, to create the next generation of commerce on the Visa network. I'll start first with the digitizing of the physical point of sale, right? How cards and the terminal experience is changing around the globe, primarily by digitizing cards and the terminal. Then I'll talk about the new payment flows based on that push API, how that is actually changing and expanding the range and reach of the Visa network. Then I'll talk at length about the acceleration of E&M commerce, both in the case of Visa Checkout and how we're thinking about the future in this space, and then last but not least, the next generation of commerce primarily driven by the Internet of Things as well as what we're doing in the innovation centers. So, let me start with the digitizing of the face to face point of sale.

As I mentioned, tokens is critical to this. As I said, the token is nothing more than taking you single card that the bank issues to you and then creating a multitude of digital versions of that that we can then push to devices. Ryan mentioned some of these and I'll go a little bit deeper but that one card then on a tokenized basis can be pushed to an issuer payment credential. It can be pushed into Apple Pay. It can be pushed into card on file merchants, and something we haven't really talked about a lot, but when you think about all the places that we store our cards, whether it be Spotify, iTunes, Netflix, etc., we can now tokenize those credentials and protect those credentials. It's Android Pay. It's Samsung Pay and it's QR, right? We don't talk a lot about that be we can tokenize a QR experience.

It's not just about ease of use and getting the card digitized into all those devices but it's more secure. What a lot of people don't understand is while the bank has issued me that piece of plastic with a 16-digit number, when we push a token into all these devices, it's now a unique number with unique cryptography that allows us to see that transaction in a way that we never could before, so that when it comes across our network, even with advanced authorization, if that is ever compromised and taken and tried to be used elsewhere, we can kill the transaction before fraud ever occurs, number one, saving the merchant and the issuer any risk, and more importantly, because it's in software we can then push a new credential to the device. Not having to have the consumer figure out that they had fraud on it, we can actually make that easy and keep the customer up and running. So, again, the token is foundational for what we're doing at the face to face environment.

Most of you know the developed markets, and as Ryan talked about the pay. So today we have relationships with four of the major platforms in the mobile space: Apple, Google, Samsung and Microsoft, but we also support 30 issuer instances around the world in 27 countries today. So, again, when you think about the mobile environment, we've now tokenized credentials, we can push into these devices and consumers can show up at a physical point of sale where they have a contactless terminal intact. So when you think about this, this is great, but that effectively we only digitized one side of the equation which is the card, right? What I mean by that is you still need to find a terminal that's got a plug in the wall, like a Walgreen's, and go tap that, so it doesn't solve the other half of that, which is why we're really excited about what's happening in emerging markets. Ryan referred to it and Chris Clark will spend more time on this—I'm talking about India—but the QR code, because the QR code allows us to remove both the plastic and the terminal. We're working with EMVCo. on a set of standards—you'll hear this come up time and time again—standards are really important here, so that we can actually make this go worldwide and we can give not only merchants and the consumers more choice to use their phone not only to present the transaction but to accept it as well. You hear this concept of scan and pay in partnership now with others around the world. By the way, there's two ways this can flow. Number one is the consumer can get a tokenized QR, think a Starbucks like experience where I've got a QR code on my phone and I present that to the merchant, so we've now created the tokenized capability to present that and have the merchant push the transaction or pull funds like they do today in developed markets.

But more exciting again is what Ryan referred to as the push. So the consumer in this case, and you see it here with mVisa, takes their phone and they scan the merchant QR, and the QR can be static like you see here or dynamic where the merchant actually includes some unique information in the transaction, but the consumer scans it and then they push the funds from their bank to the merchant's bank address. Again, effectively taking fraud out of the experience but also digitizing the entire transaction end to end, which brings me to my next use case and something that Ryan talked about and something we're really excited about which is the push concept.

Again, just trying to make this easy for everybody, pushing the card, think about it as taking deposits via the card. So the card, the 3 billion cards that we've issued around the world, now become acceptance devices, a way to get funds into an account, and it's something again we've been doing for years. We've got 3 billion cards worldwide, all of which are turned on today, by the way. Visa Direct and the Visa transaction set is able to push funds today, but what's really interesting is that around the world the work we're doing now is around fast funds, is turning it into a real-time push rail, real-time notification and real-time availability of funds via those cards, and then last but not least, as Ryan talked about, they're secure. So we've taken what was that refund transaction and hardened it. We've created a data rich message set that includes information such that the bank can do any money laundering and know your customer things that they need to do in order to make this transaction real. Let me give you some more facts on this.

We believe today that Visa is the global fast funds rail. Again, as Ryan talked about, 1 billion debit and prepaid cards that are already turned on to receive funds in real-time, U.S., Canada, Russia, parts of Asia, parts of Africa. Over the next 12 to 18 months we're going to light up another 700 million cards, debit and prepaid cards around the globe, effectively turning them into real time acceptance vehicles. So we're really excited about this, because while others are talking about it, we're live and doing it today. Equally important, as Ryan said, because again, I call on the big technology partners around the globe, the big messaging platforms, they don't want to connect via one-off to a bunch of different partners in domestic markets; they want one partner that gets them scale and Visa does it. As a result, what we're seeing is an explosion of use cases around the edge of this new transaction set: insurance companies, governments, gig economies, gaming companies, all looking to get funds to people in real time. Let me make this real and give you a couple of examples.

The first is the gig economy. This is something Lyft does. So for those that pay attention and listen to the radio as you're driving, like I do, you'll hear Uber and Lyft, you see it in their television ads, talking about the push capability as a competitive differentiator, right? So if you're in the gig economy and you're running a platform like Lyft is, you've got a two-sided network, you're competing for drivers, and if you're a driver working for Lyft or Uber you're driving around all day and all this wonderful stuff for us as consumers, they're getting paid but it's in the cloud; where's the money? A lot of these folks, especially for the Uber pools and the Lyft eco system, they may be students, they may be people that are stay at home and they want to add a little money on the side to buy a gift or buy something if you're a student and go out on Friday night for pizza, you want to get paid. So they talk about this in their ads because it's an incredibly attractive thing that at the end of the day I can push a button on this Lyft app and get money pushed to my debit or prepaid card in real time. We see this across the gig economy, so much so that Visa is becoming the next gen payroll system for the gig economy.

Another use case, right? Small business, cash flow is the life blood of small businesses, right? So you've got Square who powers a lot of small business in this country is now taking advantage of the OCT or the Visa Direct rail, our push API, to actually allow a merchant at the end of the day to say, "Send me my money I made now, in real time to my debit card, so I can go to Costco or I can go buy supplies to power my business, to grow my business." So you can argue that Visa, what we're doing here is powering small business around the world as they can get access to their funds faster and grow their businesses through instant deposit.

Then last but not least you could argue that this is probably the most needy clients, the insurance, the casualty and loss business. What you see here is what All-State is doing with that same push rail today, they can go to a natural disaster, have the claims center set up like you see here, do the claims work and then send money in real time to that consumer that needs the money so they can buy a hotel room or get food or start to get the car fixed. Not only, by the way, is this great for the consumer, the person that needs the money, but it simplifies All-State's back office because their claims process isn't paper based anymore; they can get the money there, they don't need to do ACH, they don't need to cut checks.

So these are just a couple of examples of what we're doing, and again, you'll hear more from my colleagues throughout the day on some of these.

But I think fundamentally to all of this, and Ryan and Al both referred to this, is the partnership model. Visa doesn't scale because we have a lot of people calling on all the opportunities in this space; we scale through partners. The way I think about this is if you look at the partners we've built, whether it be Ivy and Stripe and Braintree, whether it's Chase Paymentech, others, we're working with acquirers and third party processors around the world that turn this on and then in working with them, they're lighting up the world around us with companies like Facebook and Google and PayPal. It's just the network effect. Just like we worked with First Data and TSYS to build our business historically, we're now working with these processors to create a whole new business around just this payment set and we're seeing just a wealth of innovation occurring just by exposing and opening our network.

Let me transition now to the next set of use cases, E&M commerce, and you'll hear more about this from Jack when he talks about the merchant space, but Visa Checkout, right, and Ryan referred to it, a lot of work to do still to make purchasing online, whether it be a desktop, a laptop or mobile or a tablet easier. We do believe that we've created a best-in-class experience for that. We're working hard every day to get merchants and consumers on it because we think it takes scription out of the experience and it's just good, it's healthy and it's good for ecosystem. Again, as Ryan talked about, it's not a zero sum game as a network. Our business is about partnerships and expanding the network, giving consumers and merchants choice and making it easy to use Visa cards. Probably one of the best examples of how we think about this as a network is the PayPal partnership we did over a year ago, or just about a year ago. Not only was it like a partnership that we agreed that we want to do things together, but we've been actively engaged with PayPal to grow our business collectively.

First thing, they made it easy to use cards. So there's no more steering and routing and kind of forcing the consumer into a box canyon; they've opened it up. Not only that but they've started marketing. They're working with our issuers, but if you've been watching this, as an example, the NBA final, television ads promoting cards, both debit and credit cards, to move to the top of the wallet. Then this week they announced how they're taking the Visa Direct rail, the rail I just talked about, and integrating it into both Venmo and PayPal so that consumers and merchants can now extract the tract of funds that were effectively inside of Venmo or PayPal and move them back to their bank account in real time using the Visa rail, right?

So, back to what Al and Ryan talked about, supporting the four party model; we're now taking what was perceived to be a fintech competitor, working in the four party model, using out assets and getting the money back into the bank account, back onto that primary transacting mechanism, the debit card, so the consumer can go spend off the Visa card they've got in their wallet.

Then last but not least, we're actively working with them on tokenization so that we can actually work to get bank cards that are in the PayPal ecosystem tokenized such that they can then be used at a point of sale but it will be a straight through process using a Visa token tied to the underlying account. So, great things coming here.

Now the problem it is, whether it be Visa Checkout or PayPal, we're not alone, and everybody over the last 20 years has awakened to, "Hey, we've got to solve this friction problem," right? So the merchant point of sale, you see a couple of these, it looks like a NASCAR car with all the stickers, and the problem is quite frankly when you have all of this choice, you could also say it's a lot of confusion, and when you have confusion a couple of things happen that aren't great. Consumers don't know what to do, right? The merchants don't know what to invest in. We kind of sat back and started looking at this and saying, "You know, when that happens that's not good for the ecosystem." I come back to the standards discussion. This is the equivalent, by the way, if you walked into a Walgreen's and you saw eight terminals and you had to figure out which card which worked this way, right? So we have a history of making it easy. The reason we all travel and don't have to think about getting cash before we leave the country is because the card works the same regardless of where you go. What we're doing is beginning to think about how we have to evolve Visa Checkout to be more open.

You saw us announce a couple of months ago the Visa Checkout open platform. So, what is that?

Effectively today we're taking Visa Checkout, the acceptance mark, and opening it up to different consumer experiences. So in this case you see on the phone Android Pay coupled with Visa Checkout, and what that means is a consumer that's chosen to use Android Pay can now link that account to Visa Checkout and anywhere they see Visa Checkout they can click on it and use their Android Pay credential or the finger print, or in the future retina or iris scan or whatever, to checkout. Samsung Pay has agreed to the same thing. So their beginning to use Visa Checkout as the common point of acceptance. We're now working with our banks to open it up for them, right? But that's not enough, so this is a great beginning. Now what are we doing?

I mentioned standards, right? We're working with EMVCo to start to integrate a bunch of things that are important to the merchant. 3DS 2.0, the risk based scoring mechanism, but in a way that takes friction out. Then secondly we're using tokenization services. So we're going to tokenize the cards that go into Visa Checkout. Again, obviously Android Pay and Samsung Pay are there already. Then last but not least we're working with EMVCo on something called the secure remote message. Think of it as the EMV track, the thing that we do with the physical point of sale, brought to the ecommerce space where we can carry tokenized data plus incremental data that can take fraud out as well as bank cryptography so that the bank knows that this is really the credential tied to that unique merchant or device. If we do this right, we hit the sweet spot of less friction, maximum consumer choice, simple merchant integration and less fraud, right? So this is really important to us and this is the future of where we're going with Visa Checkout, effectively to like, if you will, that Walgreen's one terminal as opposed to eight.

So, now you're in software, this is great. What we're doing with Visa Checkout, I think is great, but I imagine like me a lot of you have cards in lots of places that you don't even use a wallet, right? Whether that's card on file with like an Uber or Spotify, Amazon as a merchant, so while this is great, this doesn't address all those use cases.

Going back to the network hub push provisioning, one of the things we're working on and have created a new API is the ability for a consumer to go to their mobile banking app and push a credential, a token, into all the card on file use cases and to the pays and to their bank app. So what we've done here, and you see an example of it, is where the consumer can log into their mobile banking app and if they haven't signed up for an ecommerce site or an in-app like Uber, they can now sign up for the account and push a credential from behind the mobile banking app to that device or to that card on file, and by the way, now that they've pushed it, even more importantly, they can control it. So behind the mobile banking app through our APIs I talked about earlier, those control APIs, a consumer can now instrument the app such that they can say when, where and how that card gets used. If you think about this, and I know while you're thinking that might a 'nice-to-have' but for me this is a need-to have and this is why. The Internet of Things.

For those of you that had a card lost or stolen, you know how much fun it is trying to remember all the places you put it, right? So not only does the controls and the push that I talked about before make it easy and in the fact that it's a token I can replace it without knowing, but if you think about a world like you'll see out back in the showcase like your refrigerator, your watches, your wearables, your cars, you can keep going, that all have credentials; how are you going to keep track of it? So the ability to push to these devices becomes incredibly important.

Remember, a lot of these devices won't even have like an input device so if you think about the pays experience for those that have actually done that, you have to get the card into the device, well, some of the things, and you'll see wearables, rings, others, there's no easy way to do that so this push capability is incredibly important and foundational.

So, as we think about the IoT ramp, even inside of Visa again to scale, we've had to start thinking about a programmatic way to approach it. So we're really thinking about this in five verticals and we're approaching it in these five verticals.

If you think about it, the top three are next gen issuance. If you think about wearables, watches, rings, clothing, it's an issuance; we're pushing cards to those devices. If you think about the car, we'll be pushing payment cards into those devices. If you think about homes, the voice controlled ecosystem of Alexa, Bixby, Siri, OK Google, again, it will be an issuance example.

Then you've got the next gen acceptance which is next gen retail, cloud-based retail, even in the face to face environment, and smart cities as cities begin to plan for acceptance: parking garages, payment meters, gas stations, all that's coming online and we've started to look at this as five distinct verticals and we're approaching each one distinctly. But the common thing they all have in common is the fact that they will require tokens.

To do this, if you really believe the scale at which this is coming, we can't do it alone, so we go back to what we've done well historically which is partner. So we've created a third party token service provider construct in partnership with companies around the world to help us get distribution of our credentials out to the marketplace. What that is is, again, banks connect to Visa through our token service, and through companies like Gemalto and G&D, Insight Secure and Bell ID, we've created an ability to scale rapidly to the Internet of Things in markets around the world, because again, that's what Visa does. We use our operating leverage through partners to get access and distribution, and we've done that in a way with Visa Ready that we've done it so that we can actually publish it, and so Visa Ready is our long tail program that allows us to bring folks all around the world in in a way that's certified and provides documentation.

Remember, we're a payments system, so we don't let anybody attach to us, so we have to go through and put our stamp of approval on it. So we've done that with mobile point of sale. Next month we'll be introducing a QR code, Visa Ready program to turn on all those QR programs we want around the world to get into places we couldn't get to before. Biometrics we're turning, so think about what's going to happen in authentication in our lifetime: iris scanning, facial recognition, retinal scans, fingerprints. I mean Touch ID is here today, it's just going to go wider, and so we need to make it a certification process to bring folks in to support the ecosystem and do it in a way that's responsible and secure. And again, as I mentioned, the TSP program as examples.

But the one thing everything I've talked about has in common is the fact that it's in software, as I said, and going back to the beginning, VisaNet is a cloud and then turning it into a set of web services. So we recognize, again as a company, we can't do this by going out and talking to everybody, so we've created something called the Visa Everywhere initiative which is where we talk to startups around the world. To date we've run these programs in every major market around the globe. We've had 1500 startups come in. We've had 90 finalists and I think 9 winners, and the companies in total have raised something in the neighborhood of $2 billion in funding. Next week we'll be at Money 2020 in Copenhagen announcing the latest winner, but what we're trying to do is help these companies grow and we're helping them use our API's, right? So startups and software developers all around the world are looking for access to this and so we've created a program to get to that.

Then last but not least, we started three years ago here in San Francisco with our first innovation center. This summer we'll be opening our eighth in New York, and the key thing about the innovation centers is it not only brings our technology to life with our clients, but most importantly, as both Al and Ryan talked to, it puts our people in front of them, and we have the worlds smartest subject matter experts on payments. So, we bring our people in, we take our API assets, we work with our clients' assets, we work with technology assets and we're co-creating the next generation of commerce together in these centers, and we've grown organically around the world because the demand is there. We have great design assets.

We've got great technology assets and we're doing really interesting things with those issuers and merchants clients creating the next generation of commerce together in these centers.

In closing, as I said, the rise of the mobile Internet has been a tremendous asset for us, giving us access to devices around the world in places around the world we couldn't get to before because of the requirement for a plug and a telephone line. The reach of the Visa network is in places we never could get to.

Secondly, we've decomposed our network into a set of bite-sized assets and building blocks, and again you'll see them out back in the showcase, that allow us to do things with our clients in unique ways that we never could do before, and as such, we're creating the next generation of commerce together.

Then last but not least, we've created a set of long tail programs that allow us to scale with the oncoming wave of Internet of Things devices with partners around the world and taking our core assets and letting them run with those.

So, again, thank you very much for your time. Let me introduce Jack Forestell who will talk about the merchant space. Jack?

Jack Forestell:

Thank you, Jim. All right, thanks Jim. Good morning everybody. My name is Jack Forestell. I lead the Merchant and Acquiring Group at Visa. I've been doing that for about eight months and prior to that I led our Product team at Visa. I've been at the company for about three years so I guess I'm anchoring the new end of the spectrum that Al talked about a little earlier.

From a merchant and acquiring standpoint, I want to leave you with two very simple but very important takeaways this morning. Number one, expanding acceptance remains a big opportunity for us. We have the most established acceptance network in the world, but despite that leadership position, in markets all around the world there's an enormous potential to add new merchants to our network and to open whole new merchant acceptance categories. Technology and partnerships are wind at our backs, helping drive down the costs of getting onto the network and increasing the ease and security of network payments relative to cash and check.

The second point is we're delivering a ton of value beyond acceptance for our merchants and our acquirers. Merchants and acquirers have never been more important to our company. Technology is completely reshaping commerce. Buying and paying is becoming easier for consumers but way more complicated, more complex for merchants and for acquirers. We've developed a suite of services to help our merchants and acquirers drive their businesses through these changing times. So, that's what I'm going to talk about today.

Before I jump into these deals, I wanted to introduce you to our clients and to our team. We serve 3000 acquiring banks connecting 44 million merchants around the globe. We also work directly with merchants all over the world. Some of our strongest relationships are among merchants who comprise our 840 plus co-brand partners which drive a significant proportion of our overall global credit volume.

We also have a growing set of relationships with thousands of technology partners, developers who we work with to build and scale merchant solutions. We have people on the ground working directly with merchants and acquirers and tech partners in 200 countries, all over the world, and we have teams hard at work here in the Bay Area and beyond, building an enhancing a growing portfolio of merchant and acquirer solutions.

Let me jump into what is really Job 1 for our merchant and acquiring team at Visa and that is expanding access to the Visa network.

Now this is a little bit of a complicated chart. I apologize but I think it sums up the global opportunity that we have in front of us to drive acceptance growth quite nicely, so let me orient you to and explain it a little bit first. Along the bottom, along the horizontal what I've done there is plotted acceptance penetration or acceptance density for each one of our major markets around the world. The dots represent markets. Along the vertical I plotted card volume, carded volume by dollar value in the market as a percent of overall consumer consumption expenditure. So stuff on cards divided by stuff people spend.

You could see not surprisingly there's a relationship between acceptance penetration and density and the proportion of consumer expenditure that goes on card, but you can see a few other things in there. You can see an inflection point effect to growing acceptance. That point in the middle of the chart right about 2000 terminals per 100,000 population is at an inflection point where consumers start to feel confident that card payments are ubiquitous and they can count on using their card almost anywhere, and once we hit that point, acceptance growth and penetration of PCE accelerates; the ball starts rolling down the hill.

You can also see something else which is most of the markets that we have in the world are to the left side of the inflection point. This illustrates the massive potential that we have. In fact that gray shaded area of the chart represents that $17 trillion opportunity that Ryan was talking about. It's very real. We understand it at a market level and we're going after it. Our job in going after it is two-fold, right? Think about those markets, what we think of as our developing and emerging markets, the ones down in the bottom left-hand corner. We've got to pull them across the chart and get them across the inflection point. The other job we have is to keep bending that curve; taking the developed markets in the top right and pushing them as far to 100% as we possibly can by attacking new categories and new use cases to displace cash and check.

So in doing those jobs, technology is helping us out, making our job a little bit easier, because until relatively recently connecting to our network almost always involved acquiring and setting up a dedicated point of sale device, and in some markets the cost of the devices and the timelines required to get them in place made getting on to the network too hard, but technology is helping us solve that problem. For example, mobile point of sale devices have taken the cost of getting onto the network, that set up cost down, by as much as 65% and the process of getting onto the network down from days or weeks to hours or minutes. As we then leap to purely digital acceptance, Jim and Ryan talked about it a little bit and I'll talk about it some more, that leap takes us to almost 100% lower cost. There is no dedicated device at all, and it gets you down to timelines that are equivalent of downloading an app and registering in order to get a seller onto the network, so very excited about how technology can help us out.

Now, I realize we often talk about the big opportunities and the trillions that are out there and it can sound a little bit abstract. I want to get a little more tangible, and so I'm going to run through some examples of the kind of work that we're doing out there in real life, in real markets, to attack cash and check and get more merchants onto the network. I'm going to start in our emerging markets, and we have some different challenges in our emerging and developing markets. We have very fragmented merchants in most of our emerging and developing markets, and cost of getting onto the network is a real issue for them, so driving down the cost of adoption is incredibly important.

In many of our markets there isn't as much of an installed base of analogue based acceptance of dedicated devices, so we want to skip as much as we can to purely digital acceptance. We want to leapfrog to digital. Honestly, you saw that incredible mix of markets down in the bottom left, but every market is different. Segments within markets are very different. We spent a lot of time at the local level really developing customized solutions for our emerging and developing markets.

So let me jump in. Going to give you examples of each of those. This is the first one. It's one of my favorite ones on the bringing down cost of acceptance front, and this is from Mexico where we partnered with OXXO, the largest convenience store chain in Latin America and one of the largest retailers in the world. We also partnered with iZettle, a global player in the mobile point of sale device space, affectionately referred to as mPOS. You know, those little dongles that you can attach to a smartphone to enable card acceptance, and Clip, a local Mexican player in the mPOS space. Through these partnerships, we have put affordable mPOS devices on the shelves of 15,000 convenience stores across Mexico. In a way, we're making acceptance of product distributed through convenience stores like soda or detergent. We've coupled distribution with investments in awareness, education and usage incentives and we started this in November of 2016. In the first quarter of calendar 2017, we had grown the number of acceptance points in the entire country of Mexico by 3% in just three months just from this program, so it really shows you the power if you get the costs down and you get the distribution right; you can really have an impact in short order.

I mentioned leapfrogging to more fully digital acceptance. You're probably familiar with demonetization in India. Last fall as the cash was coming out of the system and demonetization was unfolding, there was tremendous pressure across the payments ecosystem in India to get more points of network acceptance up and running. We worked with our partners to drive growth across all forms of acceptance, but the easiest, lowest cost, simplest to deploy was QR code based payments because they require only a mobile device and an app. So we worked with partners in government, partners across the ecosystem, our acquirers and even other networks to create a QR code standard. It's now called BharatQR for India, and we worked with our partners to develop an easy onboarding process for merchants. We rolled it out and over the course of just a few months we added over 200,000 new acceptance points through this method alone.

I wanted to show you a fun video that popped up in the marketplace that gives you a lot more flavor for how this works and just how easy it can be. By the way, we had nothing to do with the creation of the video; it was a local CNBC affiliate who did it. You might find that hard to believe as you look at it. They discovered the product and explain it rather well, so why don't we roll the video, please?

(Video Presentation)

Okay. I'm not sure we could have actually explained it much better than that had we actually been involved with that. A great little piece. And Chris Clark, our Head of AP, is going to talk a little bit more about that later when he gets into India. We're live with that product in India. We're also live in Kenya, Egypt and Rwanda, and going live in about 10 more countries very soon.

Now, I mentioned that all of our markets are very different. You may or may not know that in many of our emerging markets ecommerce is evolved not purely as an electronically prepaid business but as a cash-on-delivery business where buyers often test or try on items, only taking part of the shipment, and then paying in cash at the end of the transaction. In markets like India, Indonesia, Malaysia and Vietnam we're partnering with ecommerce players, delivery companies, mPOS providers to convert this cash habit. Arming delivery people with mPOS gives consumers access to electronic payments and coupling that with marketing initiatives helps to raise consumer awareness. It's early days here but we've seen tremendous benefits and big impacts in shifting cash to electronic payments as a result of some of these initiatives.

Now, let me shift to our developed markets, where the challenges are somewhat different. Here, we've already got great penetration at core retail. We've got everyday spend, we've got core retail, we've got C&E. Here, we're really going after the stubborn stuff, the fragmented verticals, the long tail merchants, really high ticket categories, really low ticket categories, that's where we're going, and just as in our emerging markets, we're leveraging technology and technology partnerships to get there.

Rent is one of my favorite examples. High ticket category, right? We've got about $1.8 trillion in global rental payments, and almost none of it is carded. That said, 80% of renters will tell you that they would prefer to pay by card, and our platform partners who specialize in this space have found that, as they convert property managers to card, property managers spend 65% less time administering rent payments. We've been partnering with several innovators in the rental aggregation space, a couple of them pictured up here, but there are more, to go after the space. It's a relatively new initiative for us over about the last year. In the first six months of the effort, our partners have enabled close to 1 million renters for card payments. So, great early results, but still much more to do.

Going to the opposite end of the spectrum, there's a really low ticket example. Have you ever pulled up to a parking meter, gotten out of the car and realized the meter wasn't equipped for cards, so you didn't have any change? It's a terrible experience. It's testament to how terrible cash is as a customer experience. Spending on parking, by the way, is more than $100 billion globally, and we're working with digital aggregators to eliminate the hassle of coins and cash and displace them. Not just displacing coins and cash, but actually displacing the entire experience with a much better consumer experience. Think about reserving parking spaces in advance, topping up from remote. It's just flat out better. By the way, parking is a category where, for us, it's not really all about the volume. The volume's nice, but really it's one of those categories that habituates the consumer to using their Visa card day in and day out.

Another fun example of some of the low ticket end is charity. We've made a lot of progress over the last several years gaining acceptance in higher ticket charity and electronic donations, but the low end of charity has remained somewhat stubborn. Do you remember those coin containers at the checkout, right, where you throw in your spare change, maybe make an additional donation, or holiday time, the kettles and buckets. As cash disappears, those opportunities to give need to be reinvented or they will disappear, too. So, we work with aggregators up and down the space, but one of my favorite examples is an aggregator who concentrates on the low end spontaneous giving segment. They're called DipJar, and we've pictured them here. They built a low-cost unit that enables you to quickly choose an amount—you can see that one is configured for a $20 donation—and you just have to swipe or dip your card and walk away. They've effectively recreated the tossing cash into a bucket experience for plastic.

I have one more final example, and it's not high ticket, it's not low ticket, it's not even fragmented, but is a place where technology and technology partnerships are really helping us get cash out of the system, and that is in dining. We actually have great terminalization in dining, but even though we have strong acceptance in segments like quick-service restaurant and casual dining, cash is stubborn, it still sits at about 50% cash in this category, and the emergence of mobile order-ahead apps, mobile food delivery services and integrated mobile rewards aren't just making dining a better overall customer experience, they're displacing cash as a method of payment along the way. Think about it. As you order ahead and pick up in store, as you order ahead and have it delivered, that cash goes away and electronic payment fills in in its place. Merchants and aggregators are moving fast here. We've seen in the quick-service restaurant space over the last couple years, when we look at our own data, the rate of growth in digital payments for a quick-service restaurant has grown at a rate 14 times faster than what we've seen in face-to-face payments, and as you think about that, as that growth rate takes hold, that 50% cash is going to tend toward zero percent cash. So, we're very excited about that opportunity.

Now, while I am on quick-service restaurants, which is a segment where speed is incredibly important, speed and throughput, I wanted to spend a moment talking about contactless acceptance. Contactless is a powerful way to deliver a faster and more seamless consumer experience. People sometimes ask me, "Well, you know, it's a little bit faster, but does it really matter?" The answer is, yes, it really does matter, it matters to consumers, and I'm going to come back to that in a second, but it also matters to our merchants. Even small improvements to throughput are incredibly valuable to these sophisticated partners. They're running big operations with great deals of sophistication. You may not know it, but they're often counting you as a shopper. As you enter the store, they know the amount of time it takes you to complete your shopping journey, and they're staffing their checkouts to optimize throughput and operating costs. So, small changes, big deal.

Our teams in select markets, like Australia, Singapore, Canada and the U.K., have invested across the payments ecosystem to help drive contactless acceptance, and in a relatively short space of time, we've moved things a great deal. You can see some of the numbers up here. In Australia, we've gotten to 84% of face-to-face transactions are now contactless. In Singapore, it's gone from 22% to 52%. In Canada and the U.K., we've gone from almost nothing to over 40% of transactions contactless in a very short space of time. In those markets, consumers aren't just speeding through the checkout faster, right, but what happens is once they experience the speed and once they experience broad-based availability of the speed, we start to see spend per card go up and cash get even more displaced. It's another version of the inflection point that I talked about earlier, sort of a micro-contactless inflection point that we see happening in markets around the world where we're driving it. We're very excited about contactless and you should see a lot more from us in the very near future in terms of driving contactless more globally.

So, look, what I've just described—I know it was quick, it was sort of a little bit of a whirlwind tour of examples and the kind of work that we're doing, but it's really just the tip of the iceberg in terms of how connected devices and digital platforms are going to contribute to growing our network. Most of the examples I showed you leverages smartphone, but, again, that's just the tip of the iceberg. As every connected device, phone, wearable, car, IoT, you name it, becomes a potential point of payment acceptance, the scope of our network will grow dramatically.

Now, I've spoken a lot about growing acceptance, adding new merchants, opening new categories, super important, like I said, job one for us, but it's about more than that. Commerce is getting more complicated, more complex. Omnichannel experiences are table stakes now. Security is increasingly important. The winners are delivering great digital shopping experiences and they're doing it by leveraging platforms and partners. It is hard to get it done by yourself, if you are a merchant or an acquirer. We're one of those platforms. We've invested significantly to develop a set of services and solutions that can help our merchants and acquiring partners drive results in their businesses. These solutions go beyond acceptance. They're about risk management, marketing, loyalty and analytics.

Ryan actually gave you a little bit of an overview earlier of some of those services. I would love to have the time to get into detail and explain all of them to you, but I don't, so I'm going to try something else. I want to show you what it feels like and then try and explain a little bit about what's going on. So, I'm going to run a little video of a shopping experience, and then when it's done, I'll come back and give you a little bit of a play-by-play of how some of our merchant and acquiring services are powering that shopping experience that you're about to see. So, why don't we go ahead and roll the video?

(Video Presentation)

Okay. Pretty simple, right? I mean, you know, we've all gotten very used to the kind of experience that we just saw, nothing terribly out of the ordinary, but if you think about it, it was mobile, it had mobile advertising, it was omnichannel, instant messaging. It's a complicated thing to pull that off seamlessly. So, I'm going to show you sort of step-by-step how we're helping our partners out here.

So, let's start at the beginning. Our shopper—let's call her Ellen—started her journey by glancing at social media and spotting an ad. That ad was placed there very intentionally, we all know that. It was designed to be as relevant as possible to Ellen. In this case, the ad was placed using Visa Advertising Solutions, the platform we launched in 2016, that provides merchants with the ability to leverage aggregated and anonymized Visa data that target and measure advertising across digital media. It's early days, but so far we've had a great reception. We've had over 180 merchants use this service, including 90 of our top U.S. merchants have seen great lifts and payback in marketing ROI.

Next, Ellen selected an item, she put it in her cart and she checked out using Visa Checkout, making it fast, simple and seamless. We've grown Checkout now to cover over 40% of addressable U.S. retail commerce, and merchants love it. It drives up conversion, it drives down fraud, it increases revenue per visitor. We're live in 26 markets, with over 20 million registered users, and growing strong. Jim described our migration at Checkout as an open platform a few minutes ago, and you can see here, if you look at the picture, Ellen used Checkout by connecting her Android Pay service to it. We believe that migrating Checkout to an open digital acceptance platform will drive even more adoption and fuel even more growth. We're really excited about migrating to open.

Next, we're also protecting Ellen and our merchant quietly in the background. We have a fraud and authorization management platform separate from VisaNet that serves merchants across all of their network payments. It's called Decision Manager and uses Visa data to help merchants drive down fraud and increase sales, by approving authorizations. Here's how it works. In the split second that it took Ellen to click and confirm her purchase, our Decision Manager platform scored over 260 variables relating specifically to that transaction, built up from analysis of more than 68 billion transactions, and delivered a result back to our merchant, or to a set of Managed Risk Analyst, which is another service we provide, in less than one second, enabling our merchant to predict fraud at a rate 200 times better than they could without the Decision Manager platform. Decision Manager, by the way, is just one part of our CyberSource payment management platform that helps businesses deliver great payment experiences across all network brands and payment types. We are the largest eCommerce payment gateway in the world, and we're continuing to invest in new capabilities, like omnichannel payments for businesses, large and small. We see a lot of growth in that part of our business.

While I am on the topic of security and our CyberSource platform, and Ryan mentioned it, we recently acquired a company called CardinalCommerce. Cardinal is the de facto standard for customer authentication in eCommerce. The platform is integrated with thousands of merchants, enables more secure authentication by passing merchant and customer authenticated related data seamlessly back to issuers for higher quality authorization decisions. Better authorization is higher sales. Cardinal has done this while making it really easy for merchants to integrate through a very easy-to-consume plug-in, and they've also made it very fast. The whole process of authentication can take as little as a second on the Cardinal platform, resulting in a better customer experience, lower fraud, more transactions, higher sales. We're really looking forward to scaling up Cardinal as we integrate.

In fact, a little off the cuff, we launched Visa Checkout yesterday in India, and we did it with a combination of our CyberSource platform, CardinalCommerce's authentication and Visa Checkout, to create a custom solution for the India market, which has some very specific requirements around cardholder authentication. It's one day into it, but so far we're really liking what we see.

The last one. You may have noticed that Ellen received an offer for $10 off an in-store purchase at the end of her initial purchase. We know these types of offers can be really powerful, but also very brittle. Any friction can cause consumers to abandon the process. Through our Visa Commerce Solutions platform, we're taking the work of this type of offer off of our merchant's back and off of the consumer's back. We're leveraging the scope and the real-time nature of our network to deliver seamless experiences. In this case, Ellen just had to click "I'm in." We tagged her account with the offer, monitored her for her next in-store purchase, and delivered a real-time credit and a real-time message through her merchant back to her, instant gratification.

So, look, those are just a few of the services that we've got up and running for our merchants and for our acquirers. We continue to invest and build and develop more. I will leave you where I started, with two key takeaways. One, we continue to see significant opportunity to expand and grow acceptance, to add new merchants, to grow the scope of our network; and, two, we're delivering great solutions to our merchants and acquirers that are driving real value in their businesses.

Thank you very much. I think we're at a break now. I'm going to ask the other Jack to come on up.

Jack Carsky:

As he said, we have time for—it's going to be a quick break, about 10 minutes or so. We're going to start promptly at 10:20. I guarantee you'll not want to miss a minute of Oliver Jenkyn, when we come back.

(Coffee Break)

Oliver Jenkyn:

Well, good morning, everybody. For those of you who I do not already know, my name, as was just mentioned, is Oliver Jenkyn. I'm responsible for North America at Visa. I've been in the role for about seven years, and prior to that I was responsible for strategy and corporate development globally.

Now, for many of you, in the room at least, I would expect that the North American payments market is likely the market that you know best, from both personal and professional experience, and that's of course a bit of a blessing and a curse for the presenter. However, I'm hoping that your familiarity with the market will help our key messages resonate this morning, and our key messages are the following:

First and foremost, we have a strong, established market position in North America.

We have deep client relationships, based on partnering, to deliver real value, including 7 of the top 10 U.S. credit issuers, 9 of the top 10 U.S. debit issuers, 7 of the top 10 co-brand partners, 4 of the top 5 Canadian issuers, strong partnerships through the community bank, credit union, regional bank space, and over 100 merchant and acquirer agreements.

Third, digital leadership is central to these partnerships and central to everything that we do at Visa and in North America.

Finally, notwithstanding this tremendous growth and success we've had in North America, there is still significant opportunity for further growth, with over $3 trillion in cash and check within personal consumption expenditures still to go and get, and numerous new segments to penetrate, such as disbursements, P2P, rent, vending, parking, et cetera.

I'm going to go into all of these in more detail, obviously, in what follows.

Just a quick profile. Over 10,000 financial institutions in North America, we have over 9 million merchant locations, over $3 trillion in payments volume, and as I said, another $3 trillion plus in cash and check to go and get, approaching a billion cards, we're a little under half of Visa's payments volume and over 60% of Via's processed transactions.

Now, to get us started, what I wanted to do is give you a little bit of some observations from the front line in North America, just to get your juices flowing, just to get your finger on the pulse of what's happening in the market and what's shaping our strategy. There's not an enormous amount of time, so it'll feel a bit like speed dating, but let's hop through a few key ones as quickly as we can.

First of all, let's talk about affluent credit in the United States. If you look at affluent credit card spend growth in the years immediately following the Great Recession, affluent credit cardholders, household income greater than $100,000, affluent carried far more than their fair share of the water, with growth in the teens, and for many quarters in this time period well into the teens, while core credit cardholders, household income less than $100,000, grew in the low single-digits, and for many quarters close to zero. But, then, in the 2013 and 2015 period, as the economy began to recover, and specifically as employment began to recover and people moved from unemployed or underemployed to fully employed, core credit card growth spend began to recover. People moved out of their parents' basements, they moved out of roommate situations, they began their delayed family formation, and the spend started to show up on core credit cards, and it came with balances. We mention all of this to say that when we look at growth today in U.S. credit, it's balanced. Spend is balanced across affluent bands and we think it's a really healthy place for the U.S. economy.

Now, since we're talking about U.S. credit, I imagine that if I asked many of you where do you think the majority of the future credit card growth spend over the next five years will come from in the United

States, I imagine many of you would say millennials or Gen X or Gen Y, or one of the up and coming segments. The truth is it's boomers. Visa estimates that almost 50% of all credit card spend growth over the next five years will come from those 60 and over. Don't get me wrong, we all need to make sure that we're getting the younger generations in the top funnel, so we've got future spenders; however, it's important that we capture the growth opportunity that's right in front of us today.

Since I was knocking on millennials, maybe I'll just say a couple more things about millennials. First of all, I'll just say they're the most over-studied demographic group in the history of market research, but more productively, I'll say that Visa's view on millennials in the payments space is they're much more like their parents than they'd like to admit, and let me prove that out. The gray bar on the right-hand side here is the percent of the U.S. adult population that's active on debit and credit cards, 61%. Now, if you split the millennial group in two, into a younger half and older half, you'll see that the younger half, the gold here, is, indeed, lower in terms of their activity. They're very active on debit, but they're a fair bit a lower on credit, and that's because they either don't have access to or don't have need for credit. But, if you look at the older group of millennials, the blue, you realize that as they mature and have access to and need for credit, they start to act exactly like the rest of the population; again, more like their parents than they'd like to admit. Now, how millennials interact with those underlying payments instruments will be very different. They'll load them into digital wallets, they'll expect more digital mobile servicing, but the actual interaction with the underlying instrument is still very similar.

One last slide on U.S. credit trends. Cashback is still king. As it has been for a long time, it is the fastest growing product category in the United States. Bank-branded travels—so think Bank of America travel rewards or Capital One Venture—are still doing extremely well and is actually closing the gap to bank-branded cash. Interestingly, co-branded cards are growing in sort of the mid- or low single-digits, about 5%, but we do expect some increase in that, as some of the value propositions have been refreshed. Then, of course, other, which is generic rewards and non-rewards, are really the ones that are sort of the laggards in this space.

The last speed dating, finger on the pulse topic I wanted to hit was adjusting to change. In settings like this, I always like to just talk for a second about adjusting to change and navigating through change. The main point is that Visa can, Visa has and Visa will continue to adjust to change, and while there's a lot happening right now in North America, this adjusting and navigating through change is what we do for a living. I usually then go through about 10 or 20 really interesting and amusing examples. I'll pick just three in the interest of time.

But, 10 years ago, it's important to note that Square did not exist and now it's a top 10 player in our system. Amazon 10 years ago was not a top 20 merchant at Visa. Now, it's one of the largest merchants not only in the United States and North America, but globally. PayPal was actively introducing friction into the system by steering consumers to linked bank accounts and away from cards, and today they're a partner that's encouraging and marketing consumers in their choice and use of credit and debit cards. So, again, we can, we have and we will continue to adjust to his change.

So, now that you have a few observations from the front line, you have your finger on the pulse, what I'd now like to do is go into the three key growth vectors in North America, deepening partnerships, driving digital and expanding access.

On deepening partnerships, "deep partnership" is a very general term, it can mean a lot of different things to different people. At Visa, it means earning a partnership with real content, real ideas, real activities, sustained support and tangible results. That's how we define it. As Ryan mentioned earlier, it's about bringing the best of what Visa has to offer across all aspects of the business.

To bring it to life visually, it looks like this. Within Visa, we refer to this as Visa 360. We place the client—in this case, a bank—in the middle. We think about their strategies, their goals, their objectives, their issues, their opportunities, their blind spots, and then we surround the client with all of our assets, skills, capabilities, resources and people, and we systematically go around the wheel and think about how each of our capabilities can add value to this client.

We'll start by looking at core products and we'll ask why is this client's core debit portfolio underperforming against its peers; what does our scorecard and benchmarking suggest about where they're falling apart in the funnel and how can we help; is there an opportunity to launch a high net worth product and how can we leverage Visa's product platform and assets; how can the client better penetrate its business DDA base with small business credit or debit cards and how can we leverage our analytics or tools to help.

On digital, which APIs could we employ today to help the client's priorities; what is the client's strategy with respect to the pace and how can we accelerate it; how can we partner with the client to increase Visa Checkout penetration within their customer base for an easier and safer way to pay online; and how can we work together with this client to lead the market and differentiate on contactless payments in North America.

On marketing, which of our sponsorship assets are most appropriate for this client and how can we develop something uniquely for this client in their market focusing on their segments; are there co-marketing opportunities where the client and Visa will pool our money together to jointly invest in a specific market or to attack a specific segment.

On fraud and risk, how can Visa best support the essential migration towards tokenization for this client; how can we partner safely to increase approval rates and, hence, customer experience, while reducing fraud, leveraging Risk Manager, alerts, mobile location confirmation, travel notification, cardholder controls, et cetera.

On consulting, we always ask in which areas can Visa's consulting and advisory services have the most leveraged impact, is it macroeconomic trends, benchmarking, spend insights, analytics, or is it tailored bespoke advisory services, and once we determine the most impactful way, we dedicate and allocate the resources to deliver.

If this bank is also an acquirer as well as an issuer, we'll extend our acquirer site capabilities, so they can leverage these assets directly with their merchant clients to build their relationships.

On loyalty and offers, what is the client's loyalty and offer strategy, how can Visa help; how can we make the client's rewards points more valuable by integrating our real-time rewards capabilities; is the client interested in our offer platform or the Visa Commerce Network.

The point of all of this is to say that there's an enormous amount of work that we can do with our clients and Visa has a very systematic approach to attacking it. In case you're wondering, this is what we do every day. This is what I do every day. This is what my teams do every day. This is what we focus on and this is how we aspire to drive value for our clients. This is what we do. Of course, being engaged very differently with different client groups, our approach for a large national bank versus a smaller credit union practically is going to be different, but the spirit is exactly the same, and, not surprisingly, the exact same story and approach is true on the merchant side on the business. We place the merchant, their strategies, their priorities, their opportunities, their risks, their blind spot, we place them in the middle. We surround them with all of our merchant and acquirer side assets, resources, services and people that we have available, and we systematically ask how we can best drive the value from all of the resources that we bring to bear.

Now, before we leave the topic of deep client partnerships, I'd like to talk about a real world application of deep partnerships, and it's U.S. debit. Give me a minute to make the connection.

The U.S. debit market continues to evolve, consistent with trends since Dodd-Frank and consistent with the environment within which Visa has been successfully competing for years. Visa is very proactive in managing our U.S. debit business. We were prior to Dodd-Frank, we were in response in Dodd-Frank, and we continue to be today. It's important to note, however, that the U.S. debit market is very diverse. I like to think of it as a series of segments spanning a continuum. On one end of the continuum, there's segments that have experienced less change and are relatively stable. On the other end, there are segments that are much more dynamic. I'd like to talk a bit about each side and some examples from each side of the continuum, and for those that are more stable, I'd like to talk about why, and for those that are more dynamic, I'd like to explain how Visa competes in this space, and just in terms of spoiler alert, it's about deep partnerships.

First, on the more stable side of the continuum, a few facts to consider. On acceptance, we estimate that about 40% of all face-to-face, or physical stores, choose to only connect to Visa and MasterCard, since it provides all the functionality that they require and they want to focus on running their business, and online, the vast majority of merchants only connect to Visa and MasterCard, and for the most part PIN debit networks are not accepted. On functionality, Visa has several capabilities that many segments require. Just to give you a couple of examples. Hotels require that the amount that's authorized at check-in be able to differ from the amount that's actually charged on the final bill at check-out, after you raid the mini-bar or order your room service. Similarly, restaurants require the amount that's actually presented to you at the table to be able to differ from the amount that they actually bill after you tip and sign. Online, you can purchase all the items for your family's camping trip with one click and the full amount is authorized. However, each individual item will only be billed when it's shipped from the distribution center, and this requires different capabilities, different processing capabilities and dual message capabilities.

Finally, on risk, Visa's debt reach and fraud tools enhance risk scoring. Last year, Visa scored, risk scored 80 billion transactions, each in real time, each in less than a millisecond, and each employing over 500 risk attributes. This results in higher approval rates and lower fraud, which is particularly important for high-risk segments, such as online, that has higher fraud, and large ticket transactions, that has more at risk. So, for segments where capabilities like this are more important, they are relatively more stable.

Now, there are other segments that in the more dynamic end of the continuum. This can be because of ongoing competitive actions from competitive debit networks, merchants or acquirers more actively managing routing, or new technologies. In these segments, Visa relies on deep client partnerships to compete, and let me explain.

Post Dodd-Frank, in these dynamic segments, Visa needed to win the transaction, and we need to the transaction twice. First of all, we need to get our marks on our client's cards on the issuing side. So, whenever that card shows up at a merchant, Visa's always an option to pay. Second, when that card shows up at a store, we need the merchant or their acquirer to choose to route that transaction to Visa. Hence, the second time we need to win the transaction. We accomplish this through partnerships on both sides of the market. With issuers, we structure unique commercial arrangements that leverage Visa 360, to drive real value and benefit to issuers, and in return we ask replacement on their cards, we ask for them to issue Visa, and we've had great success with large FIs, regional FIs, community banks, credit unions, processors, group service providers, and everyone else on the issuing side. Similarly, on the merchant side, we structure unique commercial arrangements with merchants or their acquirers in which we leverage Visa 360 to deliver real value and benefit to the merchant and their acquirer, and in return, as part of that arrangement, we seek routing of debit transactions.

So, hopefully, that gives you a sense of how we apply deep partnerships in the real world to meet business ends, and hope it also gives you a sense of how we're competing in the more dynamic segments of debit, which is by making the conversation about more than just debit.

So, now let me turn to the second key growth vector in North America, digital leadership. As Jim clearly covered, leading in the digital space is critical and central to everything that we're doing at Visa. Visa's goal is the electronification of paper-based payments and the rise of technology and digital devices will only help this migration, and just a few points to support this.

On opportunity leverage, Ryan mentioned the numbers globally. In North America, for every dollar that's spent digitally, Visa will earn $0.47 of it, which is more than 2x the numbers that we see in the physical space, given the existence of cash and check.

The second point is that the migration is happening now. During the last holiday season, so just in November and December, $12 billion of spend that took place on line, in the prior holiday season took place in a physical store. That's $12 billion shifting online just in the two holiday months, just with one year's difference, and this trend will continue to accelerate.

As mentioned, the rise in digital devices and technology will continue to be a great catalyst for the war on cash.

So, given the great opportunity, what I want to do is talk about how we bring digital innovation to life in North America. In North America, there's a continuum, a different continuum, but there's a continuum of ways in which we serve our clients. Different clients want to engage with Visa differently, and, frankly, different clients are capable of interacting with Visa differently on innovation, and we want to meet our clients wherever they are on their digital innovation journey, and, again, there's a continuum of ways we do it, on behalf of services, off-the-shelf ready to use, APIs, where clients can directly connect into our digital capabilities through APIs, or co-collaboration, where we work side by side to catch unique opportunities, and I'll talk about each one of these.

On behalf of services is where Visa uses our knowledge of the industry, our knowledge of our clients, to determine the products, services and capabilities that we think our clients are going to need, and then we develop them. We make them and then we make them available to our clients off the shelf. This allows for a bit less unique client tailoring, but, on the positive side, it's ready to use quickly with limited effort from the clients, and there are numerous examples here, many of which have been cited already this morning, rewards redemption, advanced authorization, Risk Manager, token service, Visa Direct, Transaction Advisor, et cetera.

The next step up is APIs. This is where clients directly access Visa's digital environment through APIs. This enables our clients to engage with us based on their priorities, on their timeline, with their people, in their way, and, again, examples abound. The one that I like the best is Mountain America Credit Union. So, Mountain America Credit Union consumes several of our APIs. The one that I call out here is Card Controls. So, if a Mountain America Credit Union member is leaving dinner and driving home and realizes that they left their card at the restaurant, they can go into their Mountain America Credit Union mobile app, freeze the card, until they're able to go back the next day and pick it up, when they can un-freeze it and continue to use it. It's worth noting that while Mountain America Credit Union is a very capable and very forward-looking institution, they do not have the resources of Bank of America or JPMorgan Chase, and yet, through APIs, they've been able to very easily offer this great capability to their members simply and easily.

The third way in which we work with clients for digital innovation is co-creation, and here, this is where clients show up at our Innovation Centers with nothing more than a good idea and open mind, and our teams roll up our sleeves and work very closely together to bring it to life. This work is usually four equal parts. The first part is old-school problem-solving with a whiteboard, working through the idea. The second is human-centered design thinking, to make sure that what we're coming up with is actually going to be digestible and useable by real human beings. Third is technical coding, since we want clients to actually leave with an active prototype that they can take back to their shop and build upon. The fourth equal part in this recipe is caffeine, since we work very hard and we push very hard to make real progress in a short period of time, again, so people can leave with real tangible results that they can build upon when they return back to their shops. Again, this is where the real magic happens, and we've found that co-creation allows us to really solve our clients' most important and challenging problems.

The point of all this is to say that digital innovation is not one-size-fits-all. We want to meet all of our clients wherever they are in their digital innovation journey, and as much as we like to talk about these fantastic and wonderful and dynamic co-creation opportunities and initiatives that we launch, more often than not it is a simple on behalf of a service where the consumption of a digestible API can have real impact for our clients, and that is absolutely fine with us. We want to meet our clients wherever they are in their digital journey and we have a continuum of ways to accomplish exactly that.

Now, the third growth vector for North America is about expanding access, and, again, it's been said a couple times already, but the single biggest opportunity for Visa to grow is the electronification of cash and check. It's not about fighting for an incremental fraction of a basis point in market share. It's about expanding the pie. Notwithstanding Visa's fantastic success in North America, we still have a huge runway for growth. There's several important categories that Visa is pursuing in North America, funds disbursement, P2P, rent, education, vending, debt repayment, et cetera, all of which are great opportunities, but all of which are unique. Each requires its own approach to overcome its own hurdles and each has a different set of potential partners, many of whom are listed here, in order to make progress, but we are making great progress, and I'll give three specific tangible examples from the front line in North America.

First is funds disbursements, or businesses pushing money to consumers. As Jim and Ryan already mentioned, funds are usually pulled from a consumer and pushed to a business, but water can flow both ways through the pipes of our system, and once you start thinking about that, a lot of great business opportunities arise, again, as has been mentioned. A great example of this is the Uber and Lyft examples, where Uber and Lyft can push money to their drivers for quick, easy and secure payments, simply by having the driver link their debit card into the app. In the first year alone for Uber, they have pushed almost $1.5 billion to their drivers through this method. At Lyft, half of their drivers have signed up to be paid in this manner.

Again, once you understand this capability of the Visa system, of having water be able to flow both ways, the next clear application that comes to mind is P2P payments. This is me being able to pull money out of my debit card and push it into Al's debit card for the $20 I owe him for dinner last night. With Visa's scale, reliability and ubiquity, this is a huge asset. By way of example, Visa's pleased to have extended this capability to Zelle, the recently launched bank-owned P2P system, to help give that important initiative ubiquity. For Zelle, the larger banks are building direct connections with each other to move money and Visa complements that by enabling those banks to reach cardholders at thousands of other financial institutions across the U.S., thereby providing Zelle with the reach that it requires to succeed.

Finally, rent. As Jack mentioned, rather than an inefficient, heavily check-based approach, Visa has been working with partners in property management, such as Entrata, where tenants can download a simple app, download their debit card information, and make seamless and easy payments, and consumers love it. Since piloting for less than a year, it has already increased card usage by 6X, and as Jack mentioned, significant reductions in rent delinquencies and significant reductions in operating expense. We will continue to expand this program with Entrata and with other players.

So, needless to say, I could probably talk about North America for the next four hours. However, my colleagues have many more important things to talk about from their markets around the globe. So, let me also end where I began, with the key messages. Visa has a strong, established market position in North America, without question. We have deep client relationships, based on partnering, to deliver real and genuine and sustainable value. Digital leadership is central to these partnerships and central to everything that we're doing at Visa in North America. Finally, notwithstanding the fantastic growth and success that we've had in North America, there is still a significant opportunity for future growth.

So, with that, thank you again for your time this morning, thank you for being here, and let me turn it over to my friend and colleague Mr. Chris Clark.

Chris Clark:

Well, good morning, everybody. My name is Chris Clark, as Oliver just mentioned, and I'm responsible for Visa's business in the Asia Pacific region. I've been in this role for the past four years and, actually, I've been in Visa for 15 years. My first role was actually as a Country Manager, of Taiwan, back in 2002, and since then I've had a full range of geographic and management roles across the region, Asia Pacific, mostly managing our P&Ls. So, these days, I'm based in Singapore, which is our regional headquarters for the region. I'm very excited today to be able to talk to you about the growth story that is Visa in Asia Pacific.

So, I'm assuming that most of you have been somewhere in Asia before, but the circle on this map is actually not just to show you where Asia is, it actually tells a very interesting story, because there are at least 3.8 billion people living inside this circle. There are more people inside this circle than outside of it. It has 22 of the world's 37 megacities, cities with over 10 million population each, and within the circle, actually, all the classic hallmarks of globalization are on display. We're seeing increasing cross-border flows of people capital, of financial capital, of physical capital, much of it being led by China, but also Japan, Korea and Taiwan, and I'd also add a new and very important category, we're now seeing increasing flows of technology and ideas.

It used to be that Asia was seen as an imitator way back when it was Made in Japan, then Made in Taiwan, Made in China, but the now the flows within the circle are resulting in Asia becoming an innovator, not an imitator. Think of WeChat, Alibaba in China, Rakuten in Japan, Foxconn in Taiwan, Samsung in Korea, Paytm in India. There's thousands of other Asian innovators that are exporting technology and ideas not just within that circle, but to the rest of the world. So, it's this innovation, this is what's going to be key to Asia Pacific's sustained economic outperformance.

So, with that, these are the key takeaways that I want you to gather about Visa's business in Asia Pacific over the next 30 minutes, because whilst we've got very positive demographics and strong economic growth momentum, the region still runs on cash, and that's to the tune of $6 trillion. This represents a very long-term growth opportunity for Visa, but just how do we unlock that.

Well, first, it starts with our clients. They're absolutely front, left, right and center of every single thing that we do. When they're successful, we're successful. It's just fundamental to our business.

Now, second, we're rolling out different types of acceptance infrastructure, different strategies tied to stage of market development, and I'll speak more on this later.

Third, our existing and future digital assets, we're going to continue to deploy them across the region, but don't forget it's a very diverse region, there are 46 markets, and there are those 3.8 billion people that, believe it or not, speak more than 2,000 different languages, so that means that a one-size-fits-all approach just does not work for Asia Pacific, it's not an option. Tailoring for our markets is, I believe, a requirement for future success.

So, with that, just let me take you on a quick journey to provide a bit more context on these points.

We've got more than 20 offices in Asia Pacific, in 15 countries, and they cover those 46 countries and territories in the region. We do business with 900 issuers. There are 10 million merchant locations. Here, you can see our six different sub-regions that we manage on the map. So, this translates into a business that currently produces $1.6 trillion in payments volume on the back of just over 900 million Visa cards that our clients have issued. We represent 22% of Visa's global payment volume and 7% of Visa's processed transactions. Now, you'll note that processed transaction number of 7% seems kind of low, and that's because we're unable to process transactions domestically in China, South Korea and Taiwan. These are all reasonably impressive numbers, obviously, but what makes Asia Pacific even more exciting is the growth potential for electronic payments, so let's have a look next a the demographic and economic landscape in a bit more detail.

So, as mentioned in my introduction, our growth story is about the rapid advancement of emerging economies, and although the Asia Pacific economies have grown at a varied pace over 2012 to 2016, the 4.5% average is a figure that clearly outpaces Europe and the U.S., even if you took China out of that. Then, look to the middle and you take that large population base, those 3.8 billion people inside that circle, that's almost five times the population of Europe and the U.S. combined, and it contains two-thirds of the world's population aged between 15 and 64, very favorable demographics. Look to the right, when you combine both of these, it stacks up to some very impressive per capital income growth. India, China, Vietnam, clearly, the stars here, and obviously developed economies, like Japan and Australia, being clear exceptions.

So, it's kind of like the perfect storm, a strong growth environment, but all this growth is producing those enormous amounts of cash, way too much cash for our liking at Visa, so let's take a look just quickly at how much there is to convert. It's a whopping $6 trillion. So, 55%, or more than half of Asia Pacific's personal consumption expenditure is made up of cash, $6 trillion out of $11 trillion. Now, the blue circle represents total PCE, the white circle the percentage of cash, and the delta is our industry success rate so far, and there are four big pools of this cash in the region.

First, despite the fact that Japan is the world's third largest economy, it's only 32% penetrated by electronic payments, and 14% of that is ACH. So, that's a $1.5 trillion cash opportunity, and, clearly, it's a big focus for us, and more on that a little later. Now, China has done an amazing job with its domestic electronic payments penetration, moving from almost zero to 50% in just a decade, but there's still a $2 trillion cash opportunity, and we all know what's been happening in India recently, and it's a $1 trillion cash opportunity, and Southeast Asia, a collection of Visa's fastest growing markets in Asia Pacific and one with another $1 trillion cash opportunity.

So, how are we going about unlocking this, what's our strategy to do this? Well, the beauty of our strategy is actually in its simplicity, and it doesn't differ to anything you've already seen this morning. There are three very clear areas of focus for us in the region: firstly, maintain, grow and develop those deep partnerships with all of our clients and partners; secondly, expand access rapidly to Visa payments; and third, maintain our mantle of digital leadership as our clients and partners transition to the future of commerce. So, let me talk through each of these in turn.

So, foremost and fundamentally, it's our long-term deep partnerships that provide the strongest starting point for our growth. In fact, we've got the vast majority of our volume in the region under contract. Let's look at Japan first, in the middle there. Next year, Visa actually celebrates its 50th anniversary in the Asia Pacific region. The first Sumitomo BankAmericard was issued in January 1968. So, our biggest client in the region, the Sumitomo Mitsui Card Corporation, is celebrating its 50th anniversary. As we know, history and relationship count for a lot in this part of the world, and today we enjoy strong support and significant volume from all of Japan's major card companies, based upon the depth of that history and the strength of our brand.

Now, in Australia, we've recently signed exclusive long-term partnerships with two of the countries largest banks, ANZ and NAB, and a key reason for them choosing to partner with us for the long term was our joint commitment to digital innovation and our approach in driving digital innovation in a way that helps them achieve their business objectives.

In China, we've got significant volume and deep long-term relationships with all the major banks, and we've been issuing international cards there for over 30 years.

Now, look over to the left, on the merchant side—to the far right, I mean, on the merchant side, we're doing some really exciting work with traditional players, like Woolworths Grocery Group in Australia and New Zealand, and McDonald's across the region, which, by the way, both help drive our contactless success, first in Australia and then out into the region. We're also partnering closely with new entrants into the commerce and payments ecosystem. That will harness the fast-growing e- and mcommerce segments, that are still growing at very fast double-digit rates. Now, it's these merchant partnerships that actually drive a very clear and cemented strategy for us to grow the acceptance network in Asia Pacific.

So, as I've said, it's the diversity of the region that provides us with both our challenges and our opportunities, so we have to think about acceptance growth quite differently than in other parts of the world. We adjust our approach by market and we tie all of our activities to the stage of market development. We split things into emerging, developing and developed markets, and then we allocate our resources accordingly.

So, look to the left, across our emerging acceptance markets, our focus is to roll out active acceptance locations into core merchant categories, using point of sale, mobile point of sale, and QR solutions. Now, take Indonesia as an example. In 2012, we established a Merchant Development Fund with issuers, whereby they contribute several basis points of interchange to an industry fund that's aimed that growing acceptance specifically outside the big cities. In the first five years, since we kicked off that program, it's helped to grow merchants by one-third in Indonesia, 300,000 new acceptance points, generating $6 billion in merchant payment volume, that didn't even exist before.

Now, in developing markets, we focus both on core and long tail merchant categories, and I'll speak to India a little bit more in a moment, but as you've heard from Jack, we've got a very big focus on our QR standards platform there at the moment, with a use case we call mVisa, and in the short time since its launch last year, it is now enabled to more than 30 million cardholders through their mobile banking apps, and we've seen 1 million transactions on that platform so far this financial year.

Now, moving to the right, the far right there, given that our developed acceptance markets already have a very high level of access to electronic payments, our focus is on driving innovation and capturing that burgeoning eCommerce opportunity. Almost every one of these countries that you see listed here is a heavy user of contactless, the success of which has been based on early adoption of EMV standards. Now, Australia is also our leader in the region for Visa Checkout adoption, with over 900,000 enrollments to date Now, to put that into perspective, that's over 6% of the country's banked population.

So, let me talk about the third leg of our strategy, and the one that's possibly the most exciting. The momentum that we're experiencing leveraging Visa's digital assets with our clients and partners across the region is huge. With our eCommerce volumes growing at over 25% per annum, we're obviously deeply passionate about aiming to be the best way to pay and be paid in the online world, the best and safest way. Today, almost one-third of all our eCommerce volume in the region passes through our secure eCommerce payment solution, Verified by Visa. There's been a tremendous amount of activity with our clients eager to consume our Visa token services. Over the past 18 months, we've enabled tokenization with 90 issuers and launched 149 digital wallet programs across eight markets. In terms of expanding access to electronic payments and driving more transactions to VisaNet, 28% of total face-to-face transactions in the region are now contactless. Push payments volume is $4 billion annually and Visa Checkout has already seen 1.3 million consumer enrollments in seven countries. We've also built tremendous momentum over the past year with our Innovation Center that Jim McCarthy described earlier. In the year since it opened, our Singapore center has had over 5,000 people going through it and, more importantly, it's completed three dozen co-creation sessions; 40% of those have already resulted in live deployments with our issuers, and the rest are on track to come out over the next six to 12 months.

So, now you know a little bit more about how we approach our business strategically, I was going to dive into some of the key markets to show how we're applying that to unlock the growth.

India. So, we've all heard the story that's India. On November 8 last year, the Indian government regulated cash and over 86% of currency in circulation disappeared almost overnight, it was demonetized, and while we talk a lot about governments regulating payment networks, but for the very first time we saw cash being regulated somewhere. Hallelujah to that, amazing. So, what happened when cash disappeared? Well, millions of cardholders actually used their erstwhile ATM cards as debit cards for the very first time to purchase transactions and we saw 19 million new activations just in the

November to January period. Now we're seeing what we call a "new normal." Point-of-sale transactions are around 1.8 times their pre-demonetization levels, and that's mostly contributed by debit, but, importantly, over 1 million new acceptance points have been added in India since demonetization. To put that into perspective, only around 250,000 new acceptance points were added in India in the 12 months prior to demonetization, and importantly, as Jack mentioned, well over 200,000 of those are QR acceptance points.

Now, the government has played a critical role in driving this growth by introducing a number of policy measures, like waiving the 15% import duty on point of sale terminals, introducing tax breaks for merchants, and working with Visa and others on setting up that common QR code standard by our QR, but the most encouraging thing, if you look over the far right there, is that a large part of the transaction growth is being contributed by everyday, non-discretionary spend segments, such as fuel, groceries, department stores, restaurants, et cetera. In fact, fuel is now the leading growth segment in the country.

So, all this is great, but how do we maintain it? How do we make sure that all of this becomes habit-forming and just doesn't disappear? So, not surprisingly, growing debit, its usage is key to targeting the $1 trillion cash displacement opportunity in India. Over the next three to five years, we project that we're going to issue an incremental 200 million cards, both physical and digital, and we think we're going to see a doubling in transaction growth over this time. We're also laser-focused on acceptance growth. There are 16 million merchants in India, but only 2.5 million merchant acceptance points today. So, although, as I said, that's up over a million from a year ago, our aim is to see this grow four times in the next three to five years, and we're closely working with traditional bank clients, with new payment banks and FinTech partners to rapidly scale this traditional and digital acceptance. We've focused our investments to scale these solutions so that QR and contactless will comprise 25% of total transactions in the next three to five years. Now, we've got strong support from the government, as well, in terms of promoting cashless cities, and as Jack mentioned, Visa Checkout launched in India just two days ago. So, it's been a very, very busy time for all of us in India over the past six months, but I'll say it's one that our entire team, both there and across the world, has enjoyed immensely.

So, let's turn to a market that couldn't be further away from India, in so many respects, but it's one that has an even greater cash opportunity. Japan is one of the world's most advanced countries in terms of its economy, its labor market, its technology evolution, but at the same time it remains highly cash-centric, with $1.5 trillion of cash unpenetrated. Now, today, over 98% of our volume in Japan is on, credit cards, but three years ago we made the decision to over-invest in creating a debit market there, to create a momentum to eat that cash, very much as we did in the U.S. back in the early 1990s, because we believe the time is ripe now to do this in Japan.

Now, it is early days, but progress to date has been pretty strong. So far, we've partnered with 17 banks and, most importantly, the megabanks like Bank of Tokyo and Mitsubishi and Sumitomo Mitsui Banking Corporation that between them have over 50 million accountholders, with a target of reaching 27 debit issuers in the next three to five years, and on the back of that, over the next three to five years, we see card numbers growing up to five times their current levels and volume growth six times its levels today for debit, and all of this supports our transaction processing story. Have a look in the middle there. The more transactions that pass through VisaNet, the more value-added services that we can provide to our clients in Japan to grow their business, and in the past five years we've almost doubled that processing penetration to 32% of transactions in 2016, and we anticipate those growth rates to continue.

Now, Visa is a very proud sponsor of the Tokyo 2020 Olympics, and in preparation for this major event, the government of Japan has just this month reaffirmed its objective to move to what they call a "cashless Japan," and grow card payments from 18% of PCE today to 40% by the mid-2020s, and enabling Japan for interoperable contactless and tokenization services is a key focus area for us. We've got very ambitious targets to align Japan to achieving the levels on contactless penetration we see in other Asia Pacific markets over the next three to five years. It is a very exciting time there and there's plenty of opportunity.

Turning now to Southeast Asia, another trillion-dollar cash opportunity. So, not only does it contain Asia Pacific's fastest growing economies, but also Visa's fastest growing markets, and this chart highlights that PCE growth is growing at a CAGR of 8%, and we have a leading share in six out of seven markets.

Let me just zero in one example, Myanmar. So, U.S. sanctions were lifted just over two years ago, we opened an office six months later, and the Central Bank announced that it would allow international brands to issue domestic credit in January of this year. Since then, we've got three banks issuing Visa cards domestically, in just six months, and we've also got thousands of acceptance points. This is the beauty of a greenfields market, is that every single acceptance point deployed is EMV contactless, and every card issued is EMV contactless from day one. It very much mirrors Vietnam, our Vietnam story, where we entered rapidly after U.S. sanctions were lifted over a decade ago and it's now our fastest growing market in the region and it's soon going to surpass some of our more developed markets in terms of volume.

But, a big key to unlocking the Southeast Asia opportunity are digital acceptance and issuing solutions that are tailored to each market and its needs. So, QR, represented as mVisa, payWave, Visa Token Services, are at the very forefront of our strategies. There is a very significant opportunity to leverage these assets to allow these markets to leapfrog.

Now, I did want to mention Australia briefly, not least because it's where I come from, so of course it has a mention, anyway, but you may immediately think that this one is not like the other ones, when you see that it's only a $100 billion cash opportunity. That's somewhat lower than the trillions of dollars that we've been talking about. But, I wanted to mention it because in many respects it reflects North America much more than it does other Asia Pacific markets and it's arguably the most sophisticated in terms of payments evolution.

Now, one of our strong success stories there has been the growth of transactions running over VisaNet, from 82% last year to 88% today, and we project up to 97% in the next three to five years. It's the same story, the more transactions we see on VisaNet, the more value-add services that we can provide to our client partners, but a key driver of this contactless success story is that processed transactions have really moved forward. Australia is the cradle of our contactless success in the region, 84% of face-to-face transactions, and still growing. It's driving those transactions to VisaNet, laying the foundation for digital NFC applications that consume Visa's digital assets, and you can see there some of the other markets in the region where contactless is already jumping forward.

Well, finally, no presentation on Asia Pacific would be complete without the China slide, so here it is. Now, as I mentioned, we have a very, very strong cross-border business in China today, 120 million dual-currency and single-currency cards, driving volumes that grew at a CAGR of 27% from FY13 to FY16. Those deep 30-year-plus relationships have enabled us to achieve the leading cards and payment volume share amongst international brands. China remains a long-term growth opportunity for us. We have made no secret of the fact, as Al has already mentioned, that domestic market entry is a long-term process, it's a long-term investment. We'll be investing in the right way when we've got clarification on market entry details, which we hope, of course, is going to be very, very soon, and meanwhile we continue to actively prepare for market entry, but just let me say this, it's going to be a highly competitive domestic market for us. If and when we receive a license and do enter, it's going to be one that will be very tailored to domestic realities. We can expect it to look very different to other markets in which we operate around the world.

So, to wrap up, I'd just like to reiterate the points I made at the beginning. Asia Pacific represents a very attractive opportunity for growth of the Visa business with its $6 trillion in cash and check. We've got a very, very powerful client roster and very deep partnerships that stretch back over 50 years. Our acceptance expansion strategies are carefully tied to levels of market maturity and our key to success is how we leverage our digital assets and leadership. More importantly, we know that one size doesn't fit all, we have to tailor our approach by market, because it's a very big, it's a very diverse region, with more of the world's population living inside of it than outside of it.

Thank you.

So, now I'd like to introduce my friend and my colleague, Mr. Bill Sheedy, who's the CEO of Visa Europe.

Bill Sheedy:

Thank you, Chris. I was honored to be granted the pre-lunch speaking slot, and then I listened to Chris. I don't like following such a cool accent, so I apologize for my Midwest accent. Good morning. For those of you who I haven't had the pleasure to meet, I am Bill Sheedy. This is my 25th year with Visa, so, like Jim, I'm part of the 40-plus percentage crowd that have been at Visa for more than 10 years. Today, I'm joining you in my capacity as CEO of Visa Europe, but I'm also responsible for Visa's corporate strategy, pricing and government relations.

So, similar to the reviews you've heard thus far covering U.S. and Asia markets, I'll spend the bulk of my time discussing the European market, provide some observations about the business and focus on key elements of our growth strategy, but before I talk about the many ways in which we are enthusiastic about the long term growth prospects in Europe, I'll start with an update on the integration of Visa Europe.

It's been almost exactly a year since our $21 billion plus acquisition and I'm pleased to report that we are exceptionally encouraged by the progress of the integration activities and even more enthusiastic about the position of the business we've acquired, as you heard from Al earlier. As for the state of the business, the first thing that struck me, because we really dug into the European franchise, was how extraordinarily diverse it is and the true mix of compelling growth opportunities, which I'll talk about. Even in the context of a complex regulatory environment, we see massive opportunities in digital processing and targeted initiatives, like contactless, and building on Visa's historic roots, which Jim outlined really well, we are at the core at how the Visa payments system was built. We're committed to our local clients, to tailor our investments and solutions by individual market.

Now, as I said, before I talk about the European business, I want to start with where we are regarding the acquisition and in the integration of the European company. The prospect of acquiring the European Visa business had been an important topic of conversation with our clients, investors and our employees since the formation of Visa Inc. almost a decade ago. The benefits of the two companies coming together are, in some respects, obvious, but given the significance of the transaction and the importance of the integration effort, it was critical that we focused our primary benefits as we built our strategic and financial business case for the acquisition and prioritized our integration activities against that business case. Our acquisition thesis, then and now, centered on the following four drivers of enterprise value for the combined Visa organization. Basically, this is how we thought about the power of integrating Visa Europe into Visa Inc.

Greater scale. The efficiencies of running a global business must translate into organizational synergies, costs, and otherwise.

Innovation and digital. In my conversations with the largest European banks prior to the acquisition, the enhanced product and service roadmap were the primary impetus for selling the company. They felt that a combined Visa would deliver more value to their business.

Deepen client relations and secure volumes. As a client-driven business, with the acquisition, we could better serve our global clients, in particular, and structure longer and more commercial contracts to our mutual benefit, to the benefit of Visa and our clients.

Transforming from an association. Improving yields and pricing is definitely part of this, but it was absolutely critical that we look at the management team functions within the company to make them stronger, given the tremendous opportunity we have in front of us.

So, now I'd like to talk a little bit about our progress to date. I'm pleased to report that the integration of technology and the other functions of Europe are going well. Across our acquisition KPIs, we are on track or a bit ahead of where we thought we'd be, both on financial and timeline dimensions. We've also made solid progress on the innovation and digital fronts, as well, as you've already heard. If you come to our London office, you'll see our largest, and I think best, Innovation Center globally. Our significant investment in the European market sent a great message to our established clients, emerging partners and our employees. We're making great strides with our digital initiatives and leveraging our global partnerships, as I'll talk about in a moment, and as we march towards the migration to the global VisaNet processing platform, we'll unlock even more capabilities for the European market in FY18 and beyond.

As I mentioned, at the core of our business is our clients. For the first time our global clients have a single coverage team and seamless account plan. That just wasn't possible before. Likewise, I'm pleased with our progress in migrating our clients to longer term agreements with more rigorous commercial terms, consistent with our approach in the rest of Visa's regions. Our migration of these contracts will continue at an active pace over the coming months. It's going well and it's a high priority.

Lastly, this isn't just about modifying pricing and increasing yields, which we've successfully done. It's also about corporate culture, leadership, management skills and decision-making. The team in Europe was strong, but operating as an association was different. We've made significant changes to the Management Team, as Al described. The management structure and the improved speed with which we make decisions has improved the company. This is an essential part of unlocking the potential of the organization.

Okay, so enough about the acquisition and the integration. I'm going to move to the European business.

I want to give you—just probably start on how we think about the business in the macro and then we'll drill down into the growth. The goal is to convince you what we already know. There's tremendous growth potential in the business. We saw it when we were separate companies, but it's even better than we thought.

Similar to the U.S. market, Europe is massive. We have over 3,000 financial institutional clients, which we manage across the seven geographic clusters that you see on the chart. It's an impressively large franchise, with over $1.7 trillion payment volume on our network and more than half-a-billion cards. You can think of Europe as being roughly a quarter of the global Visa payments system. A consistent them you've heard throughout the day, from Al, Ryan and others, this is a long runway of growth given the enormous cash opportunity, and that's true in Europe. Our current $1.7 trillion of payment volume on the Visa network compares to a much larger $3.7 trillion European cash opportunity. This is the source of our growth into the long term. As you look at Europe, you see tremendous diversity across the markets. Massive cash-based growth economies will fuel most of our growth across all of the markets, balanced by a few countries, like Norway, which will be hotbeds for digital innovation, given that they've already essentially moved to a cashless economy. While the cash economy and the opportunities in Europe are large, like the rest of the world, there are some unique European accelerators of our growth, noted on the right-hand side of this chart. The current EU political dynamics aside, our data show—and I'll give you some more information on this in a moment—that there's an accelerating rate of European cross-border activity within the Union, and when transactions happen across-border, Visa is uniquely well positioned to compete versus local brands.

The second point about regulation is the point of my next slide, so why don't we just go there?

It's difficult to think about payments in Europe without talking about regulation. The pace and complexity of regulation in Europe is unlike anywhere in the world. It's often thought of as a headwind for payments in Europe, but, as I think you've already heard today, we have a slightly different view.

Let's look at the core elements of the European payment regulation, interchange fees, PSD2 and the role of local and national regulators, whose presence will be increasingly felt, in our view, similar to what you've already seen in the U.K. For the top and bottom boxes, you can see that we have invested in an organization and made it a high priority to be extraordinarily active in our engagement with governments and regulators. Al and Ryan already walked you through this. It's definitely the case in Europe. This is the new reality of our business and we're seeing truly good results from this investment, as you will see when I cover Poland in a few minutes. As for PSD2, there are core elements of the regulation that drive us to stronger authentication, faster funds and open banking. We don't believe any network is better positioned to serve European clients and assist in the evolution of digital commerce. As importantly, we feel at the core of PSD2 is a push to new emerging digital services. This has the potential to be a strong positive, when we invest and engage in the right ways.

So, what does it mean to invest and engage in the right ways? Well, as you've already seen today, these are the three growth pillars from our global corporate strategy. So, as I outlined on the prior slide, regulation in Europe is a big deal, but the core elements of the growth strategy are the same in Europe as is the rest of the world, driving digital, expanding access not just with merchant acceptance, but with contactless, as well, and deepening partnerships, deepen and widen the definition of our partnerships. As an association, prior to acquiring Visa Europe, they were focused on their financial institutions, their owners. In a short period, we've expanded the definition of clients and have invested to leverage these partnerships to drive our growth.

For the next few slides, I'll now translate these three growth pillars into specific Europe initiatives that will accelerate and drive our business in Europe.

Initiative number one in Europe relates to digital. It's important to invest to move markets in certain directions, but sometimes it's best to invest behind solid momentum. Looking at the U.K. market, as an example, you can see that almost a third of our business in the U.K. is already in eCommerce, and eCommerce is accelerating. It's up six percentage points of the total from 2013. The U.K. consumer is highly digital. Looking at the right-hand side of the chart, which is a compilation of the U.K. and a handful of other developed EU markets, you can see that these digital consumers are driving almost 40% of eCommerce activity across borders in Europe, and this trend is accelerating. It's up 16 percentage points since 2013. Again, we're in a much stronger position to compete when our volume migrates to cross-border, and because we process 100% of these cross-border transactions at the moment, we have greater opportunities to add value to our merchants and our issuer clients.

Next, I want to move to contactless, and moving from eCommerce and digital to face-to-face. I'd like to talk a bit about the most compelling killer of cash in Europe, which is going to be contactless, and as you've already from Jack, the best way to convince consumers and merchants to move away from cash is to increase the speed and improve the convenience, so that they never think about digging into their pocket for cash. Our experience is that contactless is key to this initiative. With deference to Chris Clark, who showed you some truly impressive numbers in Asia on contactless, what we've rolled out in Europe really is leading the world on contactless. We have an issuer mandate, which we've just passed in 2016, where all new cards in Europe need to include the technology, and as you can see, we've seen a massive increase in contactless terminalization, where we have a full market mandate that all new terminals must be enabled by 2020. So, these investments have had a profound impact on how consumers are paying. Across the whole of Europe, you've got 40% of face-to-face transactions now are contactless, and as we look at opening up critical sectors, like transit, we're seeing exponential growth.

We've talked about digital and contactless as growth drivers for our business. An equally important long-term critical objective is for Visa to expand its local processing outside the four or five countries in Europe that comprise most of our local processing today in that region. Even though Visa is Europe's largest processor of inter-bank transactions, we have a relatively small share across a highly fragmented market. At the moment, however, there's a sea change in Europe on processing. The considerable regulatory mandates and the migration to a host of digital platforms that you've heard across today are resulting in serious questions about whether these local processors are positioned for the future. What's our strategy on Europe processing? One, we'll compete for local processing. Two, we'll partner with local processors and companies to marry VisaNet's capabilities with local networks. The API and the Developer platforms that Jim talked about are key to that strategy. Three, we will make acquisitions when they make sense. When and how we pursue any of these three strategies will depend on the unique dynamics of the various markets and the valuable feedback we get from our local clients.

Now, as I move on to the final slides of my deck, I'll summarize core elements of our strategy and growth thesis for the three specific European countries that I chose. We chose these particular countries because, and the use of respective strategies, because they are reflective of the ways in which we will grow across the whole of Europe.

The United Kingdom. As I already mentioned, this is our largest debit market in Europe, by far. It's a fantastic business and our relationships across the large U.K. banks are deep and strong. You can see by our debit cards in the market, compared to the population, we have a very strong position. It's a great start. But, it's particularly important in the context of the range of regulatory shifts and emerging payment systems services that we feel will be heavily concentrated in the U.K. demand deposit account. As you heard from Ryan and others, we're delivering world-class services in the context of faster funds, PSD2 and open banking. We feel these important changes to the business will highlight the unique strengths of Visa and VisaNet and position us extraordinarily well to capture what we consider to be a $2.7 trillion opportunity across person-to-person, person-to-business and business-to-business. Moving into next year, with the start of the VisaNet migration to Europe, Visa will be in an even stronger position to support the U.K. market and our clients with the capabilities noted on the right-hand side of this chart.

Turning to an economy that's 40% larger than the U.K., you can see that Germany is a much less evolved electronic payments market. The nearly $650 billion in annual cash dwarves Visa's $41 billion in payments volume. We've made solid investments in the German market, particularly with our 38 million Visa debit cards, compared to the German population of 41 million, so, from a card standpoint, we've got good coverage. How do we grow a heavy cash economy like this? We've already talked about the benefits of contactless and shifting commerce away from cash, that'll be key. In addition, we're shifting our focus and our resources into the German market to grow in the most fundamental and powerful ways, consistent with how we've historically grown. We'll play to our strengths and capabilities to partner with our local clients to double merchant acceptance, promote Visa VisaNet's digital capabilities, as you've heard throughout the day, and make brand and other marketing investments to drive awareness and drive behavior.

The very last market I'd like to review with you is Poland. Ryan talked about the importance of government engagement. Poland is an absolutely wonderful example of how to unlock electronic payments growth through a coordinated set of efforts across the industry and with government. We believe the Polish market will be a model for how other governments move to cashless and we're posed to leverage the example in other markets. Two years ago, the Polish government set down a path to create their own domestic payments scheme and potentially regulate interchange to zero. We started deep engagement with the government and, among other things, talked through case studies from other countries around the world, showing the benefits of an open, free market payment system. As a result of that engagement, the government has fully embraced Visa, and other networks, and a few weeks ago we signed an agreement with the government to move towards a cashless Poland, focusing on doubling the number of point of sale terminals. As you can see, the growth in electronic payments is impressively strong in Poland. We're proud of our agreement with the Polish government, but we're equally bullish over the $170 million Market Development Fund we've launched with our local bank partners to further expand our business in this favorable environment.

So, I'll close with the same key takeaway slide that I showed you earlier. Just to reiterate, the acquisition of Visa Europe and the integration is performing well. It's in line with our acquisition thesis and the business is as good or better than we expected. Looking to the future, and in the context of quite a bit of regulatory change in Europe, we're feeling good about the state of our client relationships and the opportunity. Ultimately, we believe the regulatory changes in Europe provide us with an opportunity to accelerate our growth and provide our clients value by leveraging Visa's digital, contactless and processing strengths.

Thank you.

Now, I think Jack wants to come up and send you off to lunch.

Jack Carsky:

Yes, right, thanks, Bill. I appreciate it very much. So, we're going to break for lunch now. As I said earlier this morning, there are three reserved tables, everything else is open seating. Feel free to sit with whatever member of Visa Management you'd like, and we're going to be back here then at about 12:30, and don't forget to take advantage the Innovation Showcase during the hour. Thank you very much.

(Luncheon Break)

Rajat Taneja:

Good afternoon. My name is Rajat Taneja and I have the responsibility for technology, operations and security at Visa. I've been with the company for almost four years and I'm delighted to talk to you about technology at Visa and to describe the work that Al spoke about in his opening remarks around transforming technology and championing security.

At the heart of Visa lies a technology infrastructure powering billions of payments annually in-store, online and on devices. We are, in fact, one of the largest real-time SaaS, Software-as-a-Service, systems in the world, operating at a scale and breadth that is truly unparalleled. Our goal is simple, to be always on, to deliver continuous service 24 by 7 by 365. Even more essential is security, protecting the network is job number one, and we have an unrelenting focus on championing security. To that end, we have built one of the most sophisticated cybersecurity systems in the world. Our Technology Team is also on the front lines of Visa's digital transformation. We are partnering closely with our clients and partners to shape the next generation of payments innovations.

When you look at the key foundations of Visa's business, it really comes down to three key assets: the technology that powers our products and services; the Visa brand, which is one of the most valued brands in the world; and our operating regulations which establish the framework for all parties to work together in a manner that is compliant with local regulatory requirements. Together, these three pillars help us keep our brand promise, to be the best way to pay and be paid for everyone everywhere.

Let me start by describing in more detail the components of Visa's technology platform. At the center is our core intellectual property, our software, a set of more than 350 commercial applications that power payments and provide the capabilities for network processing, issuer-facing software, our digital and mobile capabilities, merchant and acquirer applications, and all our data-driven applications. We have recently opened up our software applications through application programming interfaces, APIs, through the Visa Developer platform. We host and run these software applications on very resilient and high-powered hardware that is housed in our data centers. We have deployed a very sophisticated tele-communication network that connects our software applications to the broader ecosystem. Finally, we have multiple layers of security tools encompassing our entire technology footprint. Together, these systems power payments around the globe securely, reliably, and in compliance with local laws and regulations.

Let me now talk about software in a little more detail. Our software powers the core functions of transaction processing, including authorization, clearing, settlement, advanced authorization, and other related services. Taken together, these network processing applications are what we often refer to as VisaNet. It's the constellation of software that sits at the center of the four-party model and that provides essential services to the ecosystem. As Ryan mentioned this morning, we also have a set of very rich issuer-facing applications that can be used by issuers as a platform for debit and prepaid processing, and we have recently added a host of issuer-facing capabilities with the launch of applications like the Visa

Digital Commerce app and Visa Direct. We have a number of applications covering the ecosystem channel, that Jack spoke about, including Visa Checkout, CyberSource and Authorize.Net. Our mobile commerce applications add additional capabilities to enable peer-to-peer push payments, contactless NFC payments and token services. For transactions made, we have mobile devices, like Apple and Android Pay. All of these applications connect back to the VisaNet grails in the back end for the core services.

In running all of these systems, we generate, collect and process several terabytes of data every single day. We have built a very powerful data platform that systemically ingests, stores and processes this data for several upstream and downstream applications. This transaction data is then used to power several data applications, like risk services, commercial cards, marketing and loyalty services, and analytics. In aggregate, these applications are our crown jewels and are unique IP. Taken together, we have well over 50 million lines of code in production.

We run our software on a mix of open systems and mainframe hardware, along with all the critical network systems that connect these to each other. Last year, we processed more than 100 billion transactions across 160 currencies and 200 countries and territories. As many of our transactions involve specific ISO messages between issuers, acquirers and our networks, our system actually processes over 300 billion messages a year. At peak period, we handle over 17,000 messages per second. It's a scale that is truly staggering, and we have the capacity to scale up to handle many times our current processing peak.

Our data centers are a critical part of our global processing environment. They are the engine rooms powering the network. Our data centers and our operations and security command centers sit in multiple sites on three continents. All of our data centers have high redundancy of network connectivity, power and cooling, to ensure constant availability of our industrial systems. They are also built with fortress-like physical security. Our data center in Virginia is designed to handle earthquakes and hurricane winds of over 175 miles an hour. In fact, we experienced a 5.5 earthquake in 2011 in Virginia. It had zero impact on our systems. Continuous availability and the ability to run all our important workloads from at least two active data centers is a hallmark of our design. Fault tolerance and the ability to operate if multiple simultaneous failures take place is basically our DNA.

Telecommunications is another vital element of our infrastructure. We need to connect our multiple data centers with our internet exchanges and the thousands of client data centers scattered around the globe, and those network connections must have the highest security, availability and performance possibility. Our wide-area network connects all our data centers with multiple high bandwidth links. We connect to and pair with the Internet service providers at several locations across the world, and each location leverages dual redundant links. We use the same philosophy in connecting with our thousands of client end points, each connecting with leased lines from at least two different telecom providers, with routing over the networks to multiple data centers. We have, in fact, built a virtual private network that covers a distance of well over 10 million miles, connecting us to our clients and across our own infrastructure.

As Ryan mentioned earlier today, VisaNet connects more than 3 billion cards with more than 44 million merchant locations. With the rise of mobile devices and the growing Internet of Things, we are getting ready for 10x growth in ways to pay and 10x growth in ways to be paid. This is truly an exciting time. We are energized at what we can do for payments in the future. At the same time, there are a number of technology trends enabling us to accelerate the pace of our technology transformation. With advances in compute and hardware, we can store massive data sets efficiently, while machine learning systems and neural networks are dramatically improving our ability to interpret data and to develop new products and services that are entirely data-driven. Software-defined architectures allow us to use standardized and commodity hardware to quickly build and expand our infrastructure for computation, storage and network. New open standards and technologies are changing the way we architect and build applications, because they are easier to use, lower cost, and enable faster innovation. Finally, intelligent credentials with constant connectivity, GPS coordinates, and local CPU and storage allow us to create more seamless forms of authentication and new payment experiences.

We are embracing these trends as we focus on transforming our technology and championing security. These efforts include building new on-ramps to VisaNet, evolving our VisaNet architecture, and advancing both payment and cybersecurity. One of the major initiatives we are working on is to create new on-ramps to connect to VisaNet. Historically, the interface to VisaNet was highly restricted, both in who could connect and what they could do once connected. As my colleagues Jim and Ryan have described, we have adopted an architectural approach to open our core services using standard protocols and programming languages. We are doing this by decomposing VisaNet into its underlying elemental services and layering this with additional digital services and products. We are now exposing these services via our new Developer portal, which went live in February of 2016. This Developer layer enables interoperability across our services, regardless of which product they originated from. This will enable quick and easy access by our clients, partners and ISVs, who can then use these services to innovate for their markets in unique ways and can create applications using an ensemble of APIs from many of our different services. We are already seeing the results of these in many great examples, as described earlier by Oliver and Jim.

This is an example of our new on-ramp being used by mVisa, a solution that allows merchants around the world to immediately accept digital payments from their customers via QR code. The Developer platform provides seamless connectivity between four specific APIs from VisaNet and the issuing and acquiring financial institutions. In this example, we are authenticating customer identity across three platforms and then enabling the push APIs to process a payment that originated from a customer mobile phone scan.

This is another example showing how an NFC payment made on Android Pay uses our open APIs and seamlessly interoperates across five different Visa services and the Google and our issuers' platforms.

This is just the beginning, in terms of the type of innovations our new on-ramps and an open standard-based architecture will enable.

A second major initiative in our technology transformation is the evolution of our core VisaNet architecture. We are creating a new version of VisaNet that has the ability to scale down and run in a very cost-effective way in local markets. We recently put an instance of this new VisaNet architecture in our U.S. data centers to exclusively provide capabilities for easy cash, ATM, network transactions in Cambodia, and just this month we launched a local instance in Indonesia for processing domestic debit point of sale transactions. We are continuing to build on this architecture to provide domestic processing of citizens' card subsidy transactions in Egypt next year. We believe this architecture is the best way for us to evolve our applications for the future, when we might need more domestic presence. This system will basically act as a mesh with hub-and-spoke capabilities. This allows us to serve local requirements, while at the same time leveraging scale and central capabilities, like cross-border processing and fraud and digital services.

Let's shift gears slightly and talk about security. As I mentioned earlier, security is job number one for all of us at Visa. Our efforts to protect the ecosystem fall into two main areas, payments security and cybersecurity, and in both of these areas we are focused on moving from a reactive to a proactive stance.

With payments security, we are primarily concerned with safeguarding transactions and card credentials, in-store or in any online mode, and we do this through four data-centric strategies. First, we are protecting data from thieves through tools like encryption and PCI compliance. Here, we are moving from standards that defend against attack to standards that ensure payment technology is built securely from the start, such as Visa Ready standards for mobile point of sale. Second, we are devaluing data by putting it into a form that criminals cannot use through technologies like tokenization and EMV. By making sure that the data flowing through the system cannot be used to commit fraud, we are moving from a world in which stakeholders need to invest heavily in detection and defense to one in which the technology is inherently secure. Third, we are harnessing data with tools like advanced risk analytics which detect and prevent fraud in real time, risk-based authentication, and using our data to disrupt the criminal networks that are the source of the attack. Finally, we are empowering consumers with services like transaction alerts, which help cardholders identify fraud in real time, and transaction controls, which allow cardholders to prevent certain types of transactions. Our focus on payments security is helping us to secure transaction data as it moves through the ecosystem and to reduce payment fraud.

The second area of security is cyber protection. This is all about protecting our network, as well as the vital data we hold. Our approach to cyber is best described as defense in-depth, meaning we employ multiple redundant layers of protection. Our systems are deployed in concentric zones and it becomes harder and more restricted to traverse across these. We also have several security controls that are constantly protecting these zones across all types of tech vectors, including malware, volumetric attacks, and any software or hardware vulnerabilities. We also correlate our internal security controls with external threat intelligence, to analyze these together in our security systems. To stay ahead of today's cyber threats, it's vital that we take a proactive stance in finding and taking down threats, while remaining agile and vigilant about all activities on our network.

In the last few years, we have placed new emphasis on shifting away from a reactive position in which we respond to alerts at the surface, to a proactive one in which we hunt for traces of activity to intercept would-be attackers. We collect over 6 billion daily threats, and that gives us deep insight into what is happening in MasterCard our infrastructure and network on a real-time basis.

We marry this large quantity of data with the external intelligence we receive, and use machine learning and neural nets to catch and action anomalies, whether externally or internally induced. We have built a customized cyber security system called the Threat Intelligence Fusion Platform that glues all of this together, and is the central system for enriching and enabling the 24/7/365 monitoring of our network. We run this platform globally in all regions so there are multiple teams across time zones detecting and responding to issues. We have a short video to showcase the capabilities in our Cyber Fusion Center.

(Video Presentation)

Technology, operations, and security teams are also an integral part of engaging with our clients and driving innovation, hashing out new ideas, prototyping new applications and features in various ways, whether face-to-face in our Innovation centers, or virtually via our developer platform. Rapid prototyping is the approach we take, so these concepts go from ideas to working systems really quickly. Technology, as we have been discussing, is a vital part of a Visa and central to everything we do. Our scale and reliability are well-known. We think this is one of the most exciting moments in the evolution of payments and commerce, and the work we are doing to transform technology and champion security will be key to scaling up to handle 10X growth in the era of digital payments.

Thank you, and let me turn things over to Lynne.

Lynne Biggar:

Hi. My name is Lynn Biggar. I'm Visa's Chief Marketing and Communications Officer. I've been with the Company for 16 months today, and it's been an action-packed adventure so far, that's for sure. I'm proud to represent the foundational strategic pillar that Al described earlier about our brand, which is, as I think we all know, one of the core assets for Visa, so as you can tell from all of the colleagues of mine that preceded me, our business, our products, our partnerships, and our opportunities, are incredibly robust. Another incredibly important contributor to our business success is our brand, but it's not just our brand. It's also what it stands for amongst our customers, our clients, issuers, merchants, and others, and other key constituents, so over the next 20 minutes or so I'm going to demonstrate four key things about our brand and our marketing efforts.

The first is that we have a power house brand, a global powerhouse rivaled by few others. The second is, that based on its strength, the Visa brand and our advertising, marketing, and Communications drive substantial value to clients and to Visa. Third, that our partnership model exponentially amplifies our own sizable brand investments, and fourth, that we are keenly focused on ensuring Visa goes from strength to strength by evolving ahead of the industry transformations that you've heard so much about from many others here today. The roots of our brand can be found in our time-tested company vision statement. You've heard it woven through a few presentations. It's to ensure that Visa is the best way to pay and be paid for everyone, everywhere. Each word of this vision has been chosen carefully, but none more than the word everywhere, which I will come back to in a few slides, and this vision guides how we think about our brand and our brand messages. All powerful brands have a set of core emotional and rational benefits that differentiate it and anchor it. The Visa brand has been, and remains, rooted in the rational values of the universal acceptance and payment security, but at the same time, our brand stands for some more emotional values, and they include confidence, meaning I can feel certain that this transaction will work reliably and it'll work easily, and a lack of friction, meaning that it will be simple and effortless, and it’ll leave me feeling free and unencumbered.

Our consistent focus on these core attributes, along with their relevance to our business of today and tomorrow, has enabled us to create a category-leading payment brand. In the U.S. among credit and debit card holders, nearly 70% prefer Visa, which is close to two and a half times the other two largest global network brands combined. This is true, not only for the broad cardholding U.S. population, but it's also true when you look at key subsegments, like millennials and the affluent, where the Visa brand holds equal or greater strength. This strong position is echoed throughout virtually every market where we measure Visa’s brand preference relative to other global network players. It’s true in markets as diverse as the U.K. and the UAE, Japan and Peru, Panama and Taiwan, and Russia and India, and it's great to see this but the why—honestly, why does it really matter? Well, it matters because brand preference is an active measure of a brand's health. It’s compared to more passive, and honestly, frankly, more common measures such as brand awareness or brand perception.

From our studies, we've been able to understand the correlation between what a consumer says, which is that they prefer the Visa brand, and what a consumer does, and what they do is speak with their purchasing power, leading to a share-of-wallet for Visa and our partners that is, at a minimum, a 4 times and as much as 12 times greater than a Visa with not preferred. This is true across the set of markets that represents almost 70% of the available purchase volume, excluding the European region. We don't yet have this data for Europe, but it's on its way, so wallet power of the Visa consumer is carried into our merchant partners as well, and is absolutely recognized by them. In a physical retail branding study that we completed late last year, it's clear that consumers are looking for the Visa brand to signal those values of acceptance and security and confidence that I mentioned before, and our merchant partners are benefiting from this halo effect, so for example, in the U.S., when a Visa mark is present on the merchant door, consumers say they are 2.6 times more likely to trust the merchant. They say they are close to 2 times more likely to enter a store they’re not familiar with, helping to secure new business, and 2.2 times more likely to return for a repeat purchase, helping to secure customer loyalty. In today's often challenged retail environment, Visa can provide our merchant partners real value in the form of new customer opportunities and this enhanced loyalty.

This brand strength is also reinforced from our recent annual global client survey, where close to 8 in 10 issuers and merchants told us that the Visa brand is stronger than any other competitor brand, and in fact, our brand is the single strongest attribute listed in the client survey amongst issuers, and in the top five for merchants. Given this significantly advantaged brand, we are in a great position to proactively support clients through our powerful marketing actions and activities, so let me just share two quick examples of how we've evolved to better support our client partners and create added value for their businesses, so as I'm sure you’ve known and—know, and you've seen from some of the work that's been on the screens today, we have been a proud global sponsor, and the exclusive payments provider of the Olympics for over 30 years. For much of that time, we've used the sponsorship to focus on building the Visa brand, creating more anthem-style brand expressions, often distinct from our clients’ brands.

At the 2016 Summer Olympics in Rio, we decided to take a very different approach. Across a variety of global markets, and notably in the U.S., as shown here, we ensured that this sponsorship, and the multi-dimensional assets that went along with it, including our 50+ global team Visa athletes, worked really hard to achieve three goals. The first was to support our joint payment innovation agenda with key bank clients across a multitude of channels. The second was to spotlight unique merchant integrations, such as highlighting our new Costco acceptance relationship in the U.S., and a social media effort with Uber designed to further embed Visa payments in their app, and the third was to elevate digital payment methods by partnering to drive Samsung Pay enrollments and usage, along with Visa Checkout enrollment and usage at key merchants, such as Best Buy.

Our Olympic sponsorship, along with many of the other sponsorships and partnerships we have, work really hard for Visa and our clients. In the U.S., in the Rio Olympics, over half of our media spend included an issuer or a merchant tie-in, and it's estimated that 81% of the U.S. population aged 18 to 49, and 86% aged 18 to 34, was exposed to a Rio Olympic message from Visa, with the average exposure being close to 8 times during this period, really amplifying our client messages in materially increased ways. More globally, our focus on client activation drove 900 or more clients in over 95 markets to leverage the Rio Olympics and our sponsorship assets in some way to support their business, which they could only do by partnering with the Visa. You heard from Chris Clark about the positive impacts and opportunity coming from the India demonetization activity of the end of last year, several months ago, including transaction growth, everyday spend category growth, and expanding acceptance. Our marketing activities supported our strategy in India, and are examples of ways that Visa can use its brand power to create a national call-to-action platform for Visa, but that can be amplified by issuer and merchant partners, which is a great example of that old adage of the rising tide lifts all boats, so what did we do? We created a national campaign focused on expanding the use of debit and electronic payments called #KindnessIsCashless.

The campaign was based on the insight that the younger Indian population were actually supporting the older generations through the demonetization activities by helping them to better understand how to join the digital payment ecosphere. We provided ample media weight of our own against the efforts, and then we invited our issuer and merchant partners to leverage the same campaign to guide issuance, adoption, and usage amongst they're prospect and consumer bases. In relatively short order, in addition to the metrics that Chris talked about earlier, we reached over 125 million consumers, installed Visa brand signage at over 40,000 new merchant locations across 10 cities, and turned 1.2 million ATM security guards into digital ambassadors for Visa's Debit Solutions. Importantly, seven public sector banks in India, representing about 20% of debit cards enforced in the country, directly leveraged our campaign and placed it at the heart of their marketing toolkits, on their bank web pages, and in their digital channels. These banks amplified our own media weight by over 120%, and had year-on-year Visa volume growth over 40% higher than those banks that actually didn't leverage our campaign.

Given our global scale and reach, we must, and do, invest significantly in our brand in order to grow our brand strength and preference, and to drive active outcomes for Visa and for our clients. Our all-in annual brand marketing and communications investment is close to $1 billion, but this is really only the beginning. Our investments are amplified by those that others make to drive further brand value. They include the three billion cards that carry the brand mark. These cards are being used every second to generate, on average, over 270 million transactions a day, continuously reinforcing acceptance and security values of our brand. In addition, the over 44 million merchant locations reinforce Visa branding moments within the store and/or within the point of sale experience.

Our clients also work with us, and on their own, to invest their own marketing dollars and products that carry the Visa mark through their own channels, their own media, and other activations, and as ecommerce and mcommerce continue to grow, so does the placement of the Visa brand at the point of sale, and through innovative products, such as a Visa Checkout. So while the sum of this activity is hard to quantify, we are confident that, collectively, they lead to many hundreds of billions of brand impressions for Visa across paid, owned, and earned media, and partner efforts. I'm pretty certain that this level of activity would put us in very good company amongst the world's largest advertisers.

We're also increasingly deploying our Visa media dollars in digital channels, because we find that these channels, as they grow and develop, they work really hard to bring across our brand story. As an example, in the U.S., today more than half of our media spend is deployed across the digital ecosphere, and globally our digital investments are spent in our own channels, and in partnership with key content platforms, like Facebook and Google, through unique activations on social platforms, such as Twitter and Instagram, and through partnerships with leading digital brands, such as Waze and TripAdvisor. We are increasingly leveraging digital owned, earned, and paid media across mobile and other digital platforms, and our brand translates in these media incredibly well, and while it's nice to speak about the tens of millions of global merchants who proudly display the Visa brand at the point of sale today, we all know that that point of sale is evolving rapidly, and we are working very closely with the payment ecosystem players to ensure that the Visa brand and acceptance mark continue to work its magic, but we're not stopping there.

Today, and increasingly moving forward, transactions will be occurring everywhere; in our homes via the smart speaker devices, in our cars as we drive home from work, through our mobile phones, our wrists, and our refrigerators, and rest assured that the Visa brand will be present in these transaction experiences as well, continuing to stand for acceptance, confidence, security, and now a truly friction-free payment experience, so let me just show you a very short clip of how this could come to life across some of these moments using unique-to-Visa animation, sound, and vibration.

(Video Presentation)

Love that unique Visa sound, trust me, so now is the time I come back to that notion of everywhere, which I mentioned at the beginning, and which is an integral part of our vision statement; the best way to pay and be paid for everyone, everywhere. We have brought that to life over and over again in our global reach and scale, our brand foundation based on acceptance and confidence, and through our tagline since 1986; Visa, everywhere you want to be. Everywhere you want to be is as relevant today as it was when it had its first impression, and I would argue it would only become—it will only become more impactful as Visa leads the transformation of the payments ecosphere to a place where everywhere is now, in fact, truly everywhere, globally, around the world, and locally in your world, and then there's Morgan Freeman too.

Thank you very much, and let me now welcome Vasant Prabhu, Visa’s Chief Financial Officer.

Vasant Prabhu:

Okay. I'm the last speaker of the day. I'm sure that if you looked at the slides on the lower right, there's a little number, and just as I was walking up I saw that the number on Lynne’s last slide was 233, so we've thrown a torrent of slides at you today, and but knowing all of you, I know that you have this insatiable appetite for facts and information and you're not complaining. I hope by the time I'm done you are not only satiated, but you raise your hands and say, “Enough, enough,” but that's an aspiration goal—aspirational goal I'm sure I won't meet, so what I'm going to do in the next 30 minutes is try to bring together the major messages that you heard today in the context of Visa as an investment proposition, because in the end, that's what you care about.

What is the Visa investment proposition? First, an extraordinary long-term global growth opportunity. We'll talk about the inflection point we’re at and what it means; second, some extraordinary assets, powerful assets that we can bring to bear against this growth opportunity; third, a clear strategy that we walked through today to capture this opportunity and tactics that we will tailor by market. We're also very clear-eyed about the fact that transformations come with challenges, and we know there are plenty today and there'll be more in the future, and we’ll talk about—we’ve talked about how we want to deal with them. Of course, in the end, what counts is can you execute, and we'll walk through the fact that we have executed. We've delivered on our commitments. We have a track record. Most important, we’ll go through the growth model for the future, and then operating performance is only part of the equation in creating shareholder value. We'll talk about our disciplined approach to capital allocation, so those are the components of the Visa investment proposition, so let's jump right in.

I'll try to walk through the first few pretty fast, and then spend most of my time on the growth model and the capital allocation priorities, so what is the growth thesis? You heard a lot about it today; $17 trillion in cash still sloshing around the globe. Despite all the gains in digitizing cash, as you heard, there's a lot of feedstock. Cash is our feedstock, and in addition to this, there is more cash in the B2B space. Second, we're at an inflection point, and I'll go through some numbers that you will find eye-opening on what has happened to our business through these inflection points. Third, in a world with connected devices, every connected device is a way to pay or a way to be paid, and this could lead to a massive expansion, as you're already seeing and use cases and acceptance points. All this makes it an exciting time and a significant opportunity to accelerate payment volume and transactions growth, so you saw the cash opportunity that we identified around the world. I'll just make two quick points here.

First, even in the developed economies where there's been a lot of progress in digitizing cash, there's still almost $7 trillion in cash left, because these are rich economies and large economies. In the developing and emerging markets, it's a double-barreled opportunity. Not only is there a lot of cash, but these economies are growing. Middle classes are getting more affluent, more spending power, opening bank accounts, getting credit and debit cards, and PCE penetration levels can grow massively from very low levels at this point, so the feedstock of our business is still vast, even after all these years, but the best news is the engines to convert that feedstock, digitize it, are getting even more powerful, so let's look a little bit at the inflection points that Jim talked about earlier today.

It starts with the seminal decision that BankAmericard—the Bank of Americard made to open up the network for the first time, and just before that happened around 1960, there were about a million cards in circulation and about $1 billion dollars in payment volume, so that was the first inflection point, opening up a BankAmericard. Fast-forward to the second inflection point in the mid-70s. By the time we got to the mid-70s, the BankAmericard now being an open network, we had seen a 40 times increase in cards in force, and a 10X increase in payment volume. Now, this was the time when VisaNet was launched and the Visa brand was launched, two major events, transformational events, which was the second inflection point. The back end of Visa was digitized. This took us to the third inflection point which was in the mid-90s; the early days of ecommerce. By the time we got there you see what happens. Cards have gone from 40 million 10X again, 11X almost, to 415 million, and payment volumes have gone 60 times higher.

Now, that happened for a variety of reasons. One, there was a massive increase in acceptance. There was significant globalization through that period, and of course inflation in the 70s helped payment volumes along, so as you can see, these transformations that we've seen have been 10X or more, every one of them over long periods of time, and what you can see also is that Visa tried through transformations, so transformations are not new to us, which brings us to the fourth transformation, which is where we're at today, and this is what Jim described as the cloud touching the Earth. This is where the last mile gets digitized. This is where every connected device can be a way to pay or be paid, and we are at 3 billion and 7 trillion, and which is why when you heard Ryan say this morning that if 10X is possible, you can see that's not a pipe dream. It has happened, and we've deliberately used the words ways to pay and ways to be paid because it is our aspiration that every connected device has to become a way to pay or a way to be paid, and the concept of cards is changing, and the concept of merchant locations is changing. It's all about embedded payment credentials, or embedded credentials to accept, and so it's ways to pay and ways to be paid is how you will hear us talk about this more and more.

When you put this all together, it makes us very excited about the kind of growth that's possible as we look ahead, and you heard the reasons why. First; lots of cash, lots of feedstock. If we have a mission, it can be easily described in six words; see cash, digitize cash, grow business. It's what we've done from the day Visa was created, and the engines are getting a lot better. Digital commerce is growing five times as fast as physical commerce, and we have twice the propensity to gain a transaction in the digital channel that we did in the physical channel, and not only that, there's a whole new set of segments that technology now allows us to serve in ways we could not do before, whether that's fee-to-fee or G2C or B2C or even better solutions for B2B, so that is the thesis for growth. Now you may say, well, it's wonderful to hear you're at a transformation, but transformations are bad for incumbents very often, and the transformation highway is often filled with road kill of incumbents, so why would you, Visa, succeed through this transformation?

Well, we bring some extraordinary assets to this transformation. The first is the resources of the four-party network. The second is the incredible scale, reliability, and security of VisaNet. The third is the power of the Visa brand, and the fourth is the financial resources that this wonderful business model generates. We are a partnership business. This business is about a network, and you know Metcalfe's law says that the power of a network is proportional to the number of its nodes squared. This is a network that has three billion cardholders at one end, 44 million merchant locations, connected by 17,000 partners in 200 countries, in 160 currencies, processing 270 million transactions a day, 100 billion a year. That's what this network is all about. This is at the heart of what we bring to this transformation, so if you want to compete for what this transformation offers, you have to create something like this, and this network has been built one partner at a time, one acceptance point at a time, one card at a time, over 60 years, and it has been built in such a way that every node gets value from the network and contributes to the network, and you have to be able to do that too, so at the heart of it is the network, and this network is being reinforced as you heard all through the day, with new strategic partners who are becoming new nodes in the network, once again, coming in on terms where they benefit from the network, but also contribute to it, along with governments, as you heard about a bunch of governments that are now deeply engaged and working with us, so that's asset number one.

Asset number two is VisaNet; the incredible scale, reliability, and security that Rajat brought to life. It is hard to imagine something like this, not to mention its scope; 200 countries, 160 currencies, the scale, the reliability, and security of VisaNet are an incredible asset that is very hard to replicate. As Ryan said at the very beginning, our job is to make sure that this great asset is available to anyone who wants to transact. We have to make it easy and frictionless for people to get on our rails, because these are the rails anybody would want. They're efficient, they're reliable, they're secure, and if you can get on these rails, efficient, easily, and without friction, there really is no need for another set of rails. That's what we all believe.

Our third asset, and one you cannot underestimate, is the power of the Visa brand. Consumers make decisions every day to use the Visa brand to the tune of $7 trillion a year or more. They send the business to Visa rails because they trust them, and consumer trust, as you know, is a difficult thing to gain. This has been built over 60 years. They know that what Visa stands for is almost universal acceptance, security, reliability, and increasingly, and easy way to use. It used to be that the only way you could get on our rails was to swipe a card, but today there's a new way to get on our rails every day, whether it's tapping. You saw the power of tapping, or clicking, of course, and many other ways that Lynne described. Visa truly is the best way to pay and be paid everyone by—for everyone and everywhere, and our consumers know that, and Lynne shared some compelling facts with you about how differentiated our brand is and how powerful it is relative to alternatives, and how it drives spending on cards and why it becomes such an important factor when our partners are making decisions on who to work with, so don't underestimate the power of the Visa brand, asset number three.

Finally, transformations require investment. Transformations are not cheap. You saw all the things we're doing. We have to invest a lot of money in new capabilities, not only to develop them, but also to deploy them, and to invest them to build usage—invest in them to build usage. We have a wonderful business that is high growth, high margin, and high cash. We generate internal resources that can be deployed at high rates of return to build the capabilities of the future, to continue to build the Visa brand, to continue to make our rails the most efficient, the most reliable, and the most secure, and even after making healthy investments in our business, over the past five years we generated over $30 billion and operating cash flow, so those are the four assets we bring to the party, and we have a strategy on how we're going to deploy these assets to capture this opportunity that we walk through today. I'll just quickly do it as a refresher.

The six pillars that Al talked about at the beginning, the foundational ones and the growth pillars. This is a business of partnerships. It is a network. The network is built with partners, and Oliver did a great job of telling you what a partnership really is, and how deep and broad these partnerships are. The range of capabilities and services that we provide our partners, how deeply enmeshed we are in their businesses, and this depth is getting deeper every day as this transformation moves forward. This is not just a conversation we have with our partners about the price at which they license our brand or what they will pay us to process a transaction. These are truly partnerships where we're joined at the hip, creating value on both sides of the equation, and not only are these partnerships deep with our issuers and acquirers, but also with merchants, and Jack walked you through all the things we can do for merchants.

Merchants derive a lot of value from displacing cash too. That has been the original message of Visa, and one we sell in the emerging markets every day. That is the cost of cash, and we allow merchants to eliminate that cost, but we're also doing a lot more than that. We bring them more business. We're also making it cheaper and faster, as Jack told you, to become an acceptor of cards, and then on top of that, we have a whole suite of services that we offer merchants. Now, the way we approach these services is to support our core business. Sometimes we include them in our core service. Sometimes we bundle them in with client incentives, and sometimes we charge for them. We generate over $2 billion in revenue from the services today, and we will keep adding to these services and making them better, so partnerships are crucial. No transformation comes without a heavy dose of technology, and this is no exception. Jim did a wonderful job of describing to you what we're up to when it comes to preparing for this transformation. It is another era in which VisaNet is being opened up through the Visa developer platform.

The capabilities of VisaNet are being decomposed and made available in building blocks, and these building blocks can then be put together to create a whole new slew of use cases and ways to be paid and to pay, and our partners can have many ways in which they can plug into them, along with new partners, to create these new use cases, and what Jim described was how, with the token digitizing the physical card, we are opening up four broad categories of opportunity for digitized cash, digitizing the point of sale, the new payment flows he described, how we're accelerating ecommerce and next-gen commerce. This is what's going to allow a massive expansion in the use cases that are now possible for consumers to use cards in, and what's important here is that every one of these that he described, they're not visions or concepts. They're live services in market today, scaling rapidly, whether it's the phase in developed markets or that wonderful example you saw in Visa in India, whether it's Visa Direct and all the capabilities that it offers. We are in the fast funds business today with more scale and scope than anybody else out there, with better functionality than anybody else can offer, accelerating ecommerce by making Visa Checkout truly a digital point of sale, essentially a digital acceptance mark, and of course, what's coming is the Internet of Things.

We will not rest, as Jim would say, until every connected device is either a way to pay or a way to be paid, and this is what makes it possible. Over the last few months and years, we've thrown a lot of concepts at you and acronyms at you and new initiatives at you. Hopefully. what Jim did today was give you a framework to think about all this. Where does it all fit in? Where does the phase belong? Where does Visa Checkout belong, and then everything else we're doing is tied to them. Either it's enabling it or it's providing the security for it or it's allowing you to connect it to our network in a way that's easy, so hopefully this framework is helpful as we keep talking to you about all the things that are going on. The third, of course, is access, which is where it all starts. This is the painstaking job every day that our people do, that Chris described, that Bill described, that Oliver described, on how we build issuance and acceptance day-by-day, market-by-market, and this job will never end and we just have many more tools to do that.

Then you get to the foundational elements. Rajat described to you how we were transforming our technology. At the heart of it, we're opening up VisaNet, we're building more on-ramps to it, we're making VisaNet more flexible, allowing VisaNet to be used in many different ways, and scaling VisaNet to prepare for the 10X that we see coming through this transformation, and you have to do all this without losing reliability and security. Security is job one. We can never do anything other than the utmost when it comes to security, and we're doing that, and we'll keep doing that, and then finally, leveraging the Visa brand. This is a brand that is amplified, as Lynne described, by what our partners do. It is a brand that we're evolving for the digital world, and it is a brand that is evolving for a world where the physical point of sale is no longer where most transactions happen, and nothing is possible without the best people. We truly believe we have the best team in the business, but we can always be better, and Al made it very clear by focusing on this one that this is his number one priority, as it is for all the leaders at Visa, and we will continue to enhance the quality of our team, especially where it matters most, which is the closest to where our customers are, because serving our customers is where this all starts, so that is our strategy and we will tailor it by market.

This is a global business, but it is also very local. There are many local flavors to it, and some of this is self-evident. What we do in developed markets has to be different than what we do in developing and emerging markets, but even within developed markets, as you saw, what Japan requires and the opportunity in Japan is vastly different than the opportunity in Australia. Chris described that to you, and then Bill showed you how the U.K. was very different than Germany and then if you go to emerging markets and developing markets, it's even more diverse. What you do in Africa is very different than what you doing Asia, and China and India have almost nothing in common when it comes to what we have to do, so tailoring our approach by market is absolutely vital. We don't go into this with comfort that because we're Visa, everything's going to be okay. We know that these kinds of transformations pose a lot of challenges and we are appropriately paranoid about all this, and we only talked about some of these challenges we face.

We talked to you, and Ryan talked to you early in the day about how we plan to approach them. What is it we have to bring against each of these challenges, and what is our approach to dealing with them, and there'll be others. We will remain appropriately paranoid as we go through this transformation, as we have through other transformations, so now you might say well, that all sounds very good; rare opportunity, you've got a strategy, and this is a time when, I'm sure, when you talk to people who give you money to manage, they say, "Oh, you've got a great thesis, but how do I know you're going to make me money?" and that's when you trot out your track record, so we'll do the same right now. Just want you to know that we have delivered, and you know that. We have executed. We have delivered on our commitments, and this is the last five years. Our net revenues compounded at 10%. We had operating leverage in the business that drove our margins up. That allowed our operating income to grow faster than our net revenue, and then by pulling some financial levers, tax rates, shares coming down, our EPS grew at 18%, so we had great operating performance over those five years, but of course, operating performance is only part of the equation when it comes to shareholder value creation.

What matters also is how good are we at capital allocation? We have invested at a healthy clip in our business. We have invested what we think it takes to grow this business, and even after we've done that, we've been able to grow our dividends more than 3X. They have compounded multiple times over the last few years. We have returned over $5 billion in dividends, and we have returned over $25 billion in programmatic stock buybacks with the excess cash we had after paying dividends, and we have been able to deliver superior shareholder value, well in excess of the S&P 500, and a variety of other benchmarks, and we have done so over the last three and five years, and even more so since the IPO, so we have delivered, so again, going back to your own business, you have to say at this point that past performance is no guarantee of future results, so let's go to the next one which is how are you going to keep doing it, so let's talk about the Visa growth model.

Why do we think we can sustain a high level of operating performance in net revenue and EPS growth as we look ahead? Well, it all starts with payment volume and transaction growth, which drives net revenue growth. With operating leverage we can drive operating income growth, and then if we can pull some financial levers we could make EPS grow faster than our operating income might. It all starts with volumes and revenue. As you all know, this is a revenue-driven business, and revenue is the single biggest driver of value in this business, so let's start with what levers do we have available to drive revenue and how do they look as we look ahead? It starts with personal consumption expenditures, or PCE, as we like to say in our business. It is the spending power of consumers that drives this business, and PCE is linked very tightly to nominal GDP growth around the world, and the key word is nominal, so inflation actually is our friend, so the best outcome for PCE typically is high real growth in GDPs, high inflation, and ideally, a weaker dollar, because a weaker dollar means it's more money in dollars, which is how we count our money, and if you look at the last five years, they couldn't have been worse on all three dimensions, so we had probably the weakest real GDP growth in our lifetimes. We had, some would say, a deflationary time, and the saw—dollar actually got stronger, so PCE growth was not a very strong variable or lever available to drive net revenue growth, but despite that, you saw, we drove 10% compounded net revenue growth. Why did that happen?

It's because of the second lever here, PCE penetration. PCE penetration is, by far, the most powerful lever we have available to drive volume growth and revenue growth. That's why we spend most of the day today talking about PCE penetration. Everything you heard today was about driving PCE penetration. PCE penetration is the lifeblood of our business, and it is what we're focused on day in and day out, and PCE penetration is the reason why very low, 2% or so, nominal PCE growth in the last five years was translated to 10% net revenue growth, and as we look ahead, PCE penetration is a lever that continues to be a powerful lever, because we just talked about all the opportunity there is to digitize cash and how good the engines have become and the means we have available have become to drive digitization of cash.

We go to the next lever, market share. If we can grow our share, we can grow faster than the market. Clearly, share is a variable, but growing the pie is far more powerful, as Al said at the beginning, to grow profitably in this business. We have the superior brand. We believe we have superior capabilities that we can offer our partners. We believe we make great partners, and we have great people, and if all that helps us drive our share, that's what we will do, and we have gained share in the past few years, so our growth has, in fact, been faster than the market. The next variable is net pricing, and this, again, the key word is net, so we can raise our prices, our list prices or rack rates if we want to, but the price we realize is a function also of market conditions, the competitive environment, what we have to do in client incentives, which I'll talk about in a few minutes, and the net pricing that results from that, and net pricing has contributed to our net revenue growth also in the last five years, and finally, value-added services, over $2 billion today already. They'll keep growing. They can add ballast to what we have to do on all the other levers, so the ones in blue are the levers that we either control directly, or have a lot of influence over, so as you can see, we have quite a few levers to drive net revenue growth, but let's see how much they've contributed in the last five years, because it'll give you a flavor for what might happen in the next five or ten years.

Sixty percent of the net revenue growth we generated in the last five years has come from PCE penetration. Digitizing cash remains the single most important mission for this company and the best way to create value for our shareholders. Twenty percent came from PCE growth. Eighty percent of the revenue growth we got in the last five years came from growing the pie, which is why we keep creating value and growing the pie is what we should be doing. That is where the money is. That is where the opportunity is, and that is what this inflection point allows us to do, so as we look ahead—and then the other 20% came from the other levers we talked about, pricing, market share, and value-added services, so as we look ahead we feel very bullish about PCE penetration. Inflection points are great for PCE penetration. You saw what happened through the last three inflection points. The idea that, as we get through this inflection point, we will have another 10X, is not a pipe dream. It is not inconceivable. We didn't throw that out just as a corporate speak kind of feel good goal. It has happened, so PCE penetration will be where we're focused. That is where all the money is.

PCE growth last five years have not been great, so you can imagine if the global economy just goes back to nominal growth rates, to mean growth rates and nominal terms, you can imagine PCE growth being a more important lever in the future. When it comes to market share, if we can gain share by being better, of course we'd want to gain share, but we're single-mindedly focused on growing the pie. In terms of pricing, it's all about the value you create. We want to create more value for our clients, and if we create more value, we can price for that value, and of course we have to modulate that by external factors, like what the competition is doing or whether there are certain regulatory constraints, and so on, and we will remain focused on growing the value-added services business, but if you look at this, this pie is what tells you how we will grow in the future and what levers will drive that growth.

Let's talk a little bit about line incentives. These get a lot of attention, so it was—we thought it might be good to talk a little bit about it today. Why do we have them? Well, we have them because we drive growth—volume growth with client incentives. We have them to incent what we call win-win outcomes, where our clients grow their business and we grow their business and make more money along with them. We have them to secure multi-year contracts that are good for both sides, and of course, our rack rates have to be tailored to the unique needs of different clients, and incentives allow us to tailor them, and allow us to be competitive in the marketplace. Why have they grown as much as they have in the past few years? Well, they grow with payment volumes, and payment volumes have grown, so they're going to grow double digits just because the volumes are growing, but it has been a trend towards exclusivity, because these partnerships are becoming deeper and deeper and clients are realizing that there's value and focus in making them anonymous.

Contract terms have become longer for the same reason. There's been some issue of consolidation in some parts of the world, and at least in the U.S., some expansion—not a lot—some expansion of incentives to merchants and acquirers. Now, we're getting into lots of conversations on quarterly calls about incentives not being quite what we expected. Well, we have not, and never will, manage our business quarter-by-quarter from the standpoint of getting deals done. We don't think you want us to do that, and we won't do that, and that's what causes some of these variabilities from quarter-to-quarter but the bottom line is this. Client incentives are a means to an end. What you should be looking at is the end itself. Have we grown volumes and revenues? Client incentives are facilitators to do that.

Moving on to expenses, as in any business, volume growth drives cost, but in our business we have a high fixed cost, low variable cost structure. This is a business where economies of scale matter. Economies of scale are important in this business because it's not a cost-of-goods sold business where your costs go up with every unit you sell or a cost-of-sales business, so our variable costs grow lower than our fixed—than our volumes would grow. There are real benefits to scale. We can make it even better if we can add productivity to it, which we do. We're very focused on productivity and buying better. Offsetting that is inflation. We have to deal with inflation. We control it up to a point within our market conditions, and the inflation around expenses. That drives the growth in our—what VisaNet we call our core expenses. That is what we need to run our business, but there's another important variable, which is investments. We make investments every day to build the capabilities we talked about. These are investments to, not only build these capabilities, but to maintain them, deploy them, invest in them to promote usage, to help outlines, implement them, to invest in our brands, to invest in countries well ahead of revenues. These are P&L investments. These are investments that don't pay off in the year in which we spend the money, so investments are probably some of the most important decisions we make, and they also add to our expense growth, so how do we generate operating leverage?

We thought it might be helpful for you to see how we spend our money. You see it on our P&Ls, but this gives you another look. A little over a third of our expense goes into technology-related expenses, the people, the data centers, the development we do, and so on. Another 30% is the people we have dedicated to our partners, whether it's salespeople, product people, or service people, and another 20% is brand related. As you can see, we spend our money where it matters, on the three core assets I talked about earlier. Finance, Legal, HR, Risk, etc. are 15% in the support functions. The leverage in this business comes from economies of scale, and then it comes from productivity and purchasing, offset by the two variables I mentioned. On the right, we gave you an order of magnitude, because these are not easy always to be very precise about. There's some judgment involved. As you can see, in the past five years, with 9% to 10% volume growth, thanks to economies of scale, despite investing at a healthy clip, our expenses grew about 6%, so that's where operating leverage matters in this business, which is why we can drive profits faster than revenue, so how did we grow our EPS in the last five years? Which of these levers added the most?

Revenue is what counts. Revenue is job one, two, and three. Revenue accounted for more than half the profit growth we delivered. Operating leverage contribute too, and then financial levers added about 70%, so a 70/30 mix between operating and financial levers. Feel very good about revenue going forward. There will be operating leverage because of the economies of scale. We'll continue to focus on productivity. This will be offset by the investments we make. As Al said, we will not scrimp on investing in our business, and then, of course, we'll do the best we can on all the financial levers, some of which we control where we can have tax strategies, but then governments also control what the tax rates are, but this could give you a flavor for what the profile of EPS growth is going forward, but operating performance is not the only thing that matters. How are we going to allocate capital? One, we're going to invest at whatever level we need to, to fund our growth initiatives. Second, we'll pay a 20% or 25% dividend, a percent of EPS in our payout ratio as dividends, and we will return excess cash to you through stock buybacks, and finally, we'll manage our capital structure, which after Visa Europe, includes debt, to sustain our debt ratings.

We have, over the past five years, spent $2.7 billion in capital investments, and that number you see, but beyond that we have spent another $3 million to $3.5 billion in what we would call cash P&L investments. Those are the investments I talked about earlier. Now, these are not easy to estimate precisely, which is why I give you a range here, and we've spent $24 billion on acquisitions, of course Visa Europe being the biggest, CyberSource being next, but we've had a variety of acquisitions with a very clear objective that we will only buy businesses that strengthen our core business. We're only interested in technologies or capabilities or anything that makes our core business stronger, so as you can see, we have invested at a healthy clip in our business. While doing that, our wonderful business model has generated sufficient additional cash flow to maintain a dividend payout ratio that has gone from 12% to 20%, and over $5 billion in dividends, and our policy remains to be 20% or 25% in net payout ratio, given that we are a growth company and you should expect capital appreciation, and we return excess cash in the form of buybacks, over $25 billion over the last five years, and the buybacks tend to be more programmatic as a return of cash.

Finally, our capital structure, we introduced debt. We had a goal of being somewhere in the A+/A-1 range in ratings. Our goal is to sustain that. Our goal was to be in the 1.2 to 1.5 times gross debt to EBITDA range. We have come down from the 1.5 level since we issued the debt. Those are the maturity schedules of our debt. We have a maturity coming up in December this year. We expect to refinance that maturity and we will look at whether we need to issue a little more debt to finish the buyback associated with the Visa Europe acquisition where we promised you we would neutralize the impact of the stock ratio. At the end of the last quarter we had $10.8 billion in cash around the world. Just as a reminder, we need some of that cash to back stop our settlement guarantee. We need some working capital on top of that, but that is our cash picture as it stands today. We have been repatriating cash post the Visa Europe reorganization. We said we repatriated a net of $1.5 billion last quarter, and we have repatriated more this quarter to the tune of about $3 billion, so our capital structure and capital planning remain unchanged and we will keep you updated on what our debt plans are for issuance later this year.

To summarize, to close out the presentation part of the day, hopefully we made the case today that we have a sizable global growth opportunity. We have some powerful assets to pursue this opportunity. We have a well-defined strategy and tactics that we will tailor by market. We have a track record of delivering on our commitments and executing. We have a disciplined approach to capital allocation and a robust growth model, and we feel that we are very well-positioned to continue to deliver the superior shareholder value you've come to expect from us, so that is the end of the presentation part of the meeting.

At this point, we'll move to the Q&A, so I'm going to invite—sorry. As Al, Ryan, and Jim are walking up, just to let you know, there will be several people walking around with mics, that they will hand to you. When you ask a question, it will be wonderful if you let people know your name and the firm. Al will take every question, and then direct it as needed, and then we'll be done when you're done with your questions. Hopefully we have at least 45 minutes that we could use for this, and with that, I think I'll sit down and we'll get started.

Al Kelly:

Hopefully with 291 slides, we've given you a lot of information, but we want to be able to answer any questions you have. Bob?

Robert Napoli:

Thank you. Bob Napoli from William Blair. It sounds like with discussion around inflection points and a 10X opportunity, some of the secular growth trends online and contactless, that you expect the revenue growth rate that you've had over the last five years of around net—10% net revenue growth to potentially accelerate, which could also drive an acceleration in operating income growth. Is that what I'm hearing?

Al Kelly:

That sounds like a guidance question disguised in some way.

Robert Napoli:

But it does seem like—I mean it sounds like that you feel like you're at a point to accelerate growth.

Al Kelly:

Look, today is about talking about and providing you some flavor of how we believe there's a good deal of upside in the business through all kinds of vectors; the digital world, geographically, and in terms of penetrating new segments, so it's not a day to get caught up in exactly where all this translates to from a target revenue growth. As we've done in the past, when we talk about '18, we'll give you some guidance around next year, but we're not going to do long-term guidance.

David Togut:

Thank you. David Togut with Evercore ISI.

Al Kelly:

Hi, David.

David Togut:

Hello Al. Two questions on Europe, if I might. I'd just like to unpack two of Bill Sheedy's statements. First, he said that net revenue yield was higher than expected. I'm wondering if you could flesh that out. Is that related to faster than expected extension of issuer relationships in Europe, or is just pricing better than you anticipated at this point in the acquisition?

Al Kelly:

Well, I'll let Rajat add onto this, but I think that we've had good progress in terms of moving a lot of DCOs from rebates to commercial terms, but as much as it might be better, we still expect Europe to be on the lower end of the regions around the world in terms of DCOs.

Vasant Prabhu:

Yes, as you know we started at nine basis points in Visa to Visa Europe transaction, and you know that the nine basis points was inclusive of the rebate dollars they had when this was a membership. A variety of things have happened that have been better than we expected. Fundamentally, the growth in payment volumes has been better. The cost part of business has been better. In addition to that, there has been some pricing, and that pricing has been helping us with deals, so when you put it all together, we underwrote this without assuming—with no heroic assumptions. We had conservative assumptions because some of this was unknown, and we're happy that it's playing out better than we expected.

Al Kelly:

Your second point you wanted to unpack?

David Togut:

Just the second question, Bill, in his presentation mentioned that you're considering adding some capabilities in advance of PSD2, and I'm wondering if that might include an acquisition of a payment initiation services provider that could facilitate ACH-based ecommerce payments in connection with PSD2.

Al Kelly:

It probably wouldn't surprise you that we wouldn't talk about what we might or might not acquire, but I think that everything's on the table as it relates to PSD2 and what we need to do to make our clients as successful as they possibly can be, as that regulation comes into effect next year.

All right. You in the middle.

Ramsey El-Assal:

Hi. Thank you for taking my question. Ramsey El-Assal from Jefferies. I heard the word push quite a bit today. Can you help us understand the degree to which the revenue models are becoming more fully baked beyond all of the incremental products and services and TAM you're opening up, or you hope to open up with this push rather than pull functionality?

Al Kelly:

A couple of points; one is that right now we are focused maniacally on trying to drive adoption, and that's our number one goal. Number two, a lot of what's in Visa Direct today is P2P. You saw, I believe it was in Ryan's slide, maybe added to in something Jim did, we believe there's a lot of use cases related to push payments and facilitated by Visa Direct. I also think over time, some of those use cases create opportunities to wrap other potential services around them that potentially generates in economics as well, so I think, at this point, our focus is to try to really drive adoption, and as we drive adoption, we think about use cases that can come to the fore downstream. I think there we'll start to really figure out where we think the economics will go.

Yes, sir. Right here.

James Faucette:

James Faucette, Morgan Stanley. I guess following on that question, you talk a lot about the services, etc. Under what conditions, or where has it made sense, or would it make sense to offer services for transactions that aren't necessarily going across VisaNet. You see a lot of countries, in particular, trying to sponsor their own payment networks, and does it make sense to offer out Visa services to those initiatives? Thanks.

Al Kelly:

You're talking about where we go process?

James Faucette:

Right.

Al Kelly:

Well, we do that today. I mean there are many cases where we're not processing where we've got a relationship with the issuer and we're providing other services.

Ryan McInerney:

Yes. I mean Jack talked about a few of things, for example, in his presentation. With CyberSource and Authorize.Net, we have the largest gateway set of services in the world, and when you're going to talk to a large merchant about being their commerce engine, you've got to support all tender types, so we provide, we think, the best risk-scoring capabilities in the world, called Decision Manager, delivered through our commerce platforms, whether it be CyberSource or Authorize.Net, and we're scoring transactions of all different tender types all over the world every day around the world, so we think we have great capabilities in that space, and if you're going to be credible in terms of delivering real value for merchants, you've got to be doing that.

Jim McCarthy:

And we have markets where we have domestic processing competitors, and the issuers are coming to us for the token service because, again, we've connected to all the players, so again, where you have historically not been able to get into the market, they're actually using us to get there.

Al Kelly:

Over here.

Darrin Peller:

Thanks, guys. It's Darrin Peller from Barclays. Thanks for all the info. Al, I just want to hear a little more from you after, what, about six, nine months in this seat now. I know you were on the board before, but looking through a fresh lens, you're a much bigger company than you were years ago. I just wonder what areas of investment need to be the same size and magnitude as they used to be? Do you really need to grow marketing spend like you used to, or other areas of investment? As revenue is now at this scale, what areas should we expect to really show the slowest growth on the operating expense line in favor of just innovation?

Al Kelly:

Well I think a couple of areas of growth for sure. One is on the merchant side, I think we've been a bit more biased toward the issuing side as a company, and you saw it today in Jack's presentation that we're starting to develop a tool set for merchant that isn't quite as big yet as the tool set for issuers, but we want to get it there for sure, and so that's going to be an area of growth. You also saw in my presentation that we really dialed up the number of people that we are hiring that have digital expertise and the number of people that we're putting into our innovation centers. We probably didn't, through the course of the day, characterize what goes on in our innovation centers in its totality, but across these eight innovation centers around the world, every day we have clients—issuer clients—acquirer clients and issuer clients coming into those innovation centers and we have to continue to be able to hire people who can engage in meaningful conversations with these folks as to how to solve pain points and build capabilities that they don't have that will help facilitate growth in their business, and I think it's supportive a lot of the work that Rajat is doing. We have to continue to make sure that we're investing in, particularly the security side of our technology.

I said it a couple of times in my remarks this morning, and I continue to believe, it's critically important that—a bad cyber attack in the payments ecosystem could really break down the trust that people have and it would take some time for that trust to get built back up, and Vasant used the word paranoid a couple of times and his presentation, and I think that Rajat and I and the rest of the Management Team probably share a fair amount of paranoia about cyber security, and we've got to just continue to invest in it. I think anybody who thinks they're at an A or an A+ level there is crazy. I think that we—as good a job as we think we're doing and all the layers we have, we've got to continue to keep investing there. I don't think, going to the other side of your question, I don't know that you're going to see big increases in our marketing spend. I think that Lynne has shown you today the amplification of the brand, and I think under Lynne's leadership we're pushing to actually drive even more cooperative marketing and amplification of our marketing efforts and our brand work that I don't think that we necessarily have to see anywhere near the growth that we expect in the business on that line—on that marketing communications line. That said, we'll continue to shift as it makes sense. You saw that we're shifting a lot today already to digital assets, but I'm not going to say that we'll—we won't put more money in marketing. I just don't see growing it at the same level as we expect the business to grow.

Darrin Peller:

Thanks. Just one quick follow-up and then I'll turn it back. On the services side, it does seem like there's a lot more talk in the industry over using services to differentiate oneself in deals. I know you have a lot of different offerings you listed here, but they're not often packaged the same way some of your competitors do, and so I just wonder if that's something you look to shift or change, or do you believe your services offerings are the right set up? Thanks again, guys.

Al Kelly:

Well, first of all I'd say, in the eight months I've been in this role, I've probably sat across the table from at least 150 or 170 issuers, and not once ever heard anybody say anything but really good things about our services, and I don't think anybody who does business with us in any way, shape, or form feels cheated by it. We charge for some of our services and some of them are part of our core offerings within a deal. The reality is that we actually do generate quite a bit of revenue from services. We may or may not, over time, try to get to the point where they're packaged a little bit differently. I think today we tried to do a little bit of that for you guys in terms of, if you looked at the wheels in Oliver's presentation where he actually subdivided services into various places, but honestly, we're in the business of sitting down one by one with client by client and saying, "Hey, how can we help you?" and we'll then bring to bear whatever we need to bring to bear. I don't want to get in the business of being too slick about this and feeling like you can either take package A of services or Package C or package M. I think every one of these things should be customized to the unique aspects and the unique needs and the unique growth opportunities of particular clients, and that's what we're more focused on.

Jim Schneider:

Jim Schneider from Goldman Sachs. I wanted to ask you if you could expand on the B2B, or business payments opportunity, which has kind of been elusive to date, to say the least. If you look at the long-term opportunity, can you maybe give us a sense about, first of all, what is the number one key point—key pain point you feel like you need to overcome to kick-start that market; two, what are the weapons you have in your arsenal to make sure that that volume stays on Visa Direct and not on ACH; and the third one is, when do we see the numbers?

Al Kelly:

I'll let Ryan tackle most of that, but I think to some degree everything in life, it starts to focus. It's just not a segment that we have focused on at the same level that we've focused on other segments, and we now have somebody underneath Ryan, and a group focused on the commercial segment, and I have a lot of confidence that with that group of people now focused on it-- they come into work, they work through the day, and they leave at night worried about this particular segment. I think, from there it's going to be about building tools, but let me turn it over to Ryan.

Ryan McInerney:

Yes, I think, first of all, on the one hand, we've had great success in the easiest part to capture, which is in the commercial card business. A great commercial card franchise, we think the best in the world, not just here in America, but all over the place, but what you're really talking about is that $20 trillion opportunity that we were talking about earlier in the day. On your three points, listen, I wish it was as simple as one thing. It's just not. Every different business sector, every different opportunity that we see in the B2B space, it's unique. That's why it's been harder to capture. I talked through some of the different examples today. Healthcare is fundamentally different than corporate travel is fundamentally different than how do we automate the invoicing processes of multinational corporations, so as Al said, we built out of team, kind of a dedicated team inside of our company, end-to-end, running it like a business, people who are responsible for the products, for the ideation of new business models, all the way through to the people that are meeting with clients all around the world, and we're building expertise vertical-by-vertical just like we have in the issuer space and in the merchant space, so that we understand their needs and then we can come back and build capabilities to meet those needs.

In terms of a ACH versus Visa Direct, whenever we sit down with clients, Visa Direct is just a fundamentally better product. There's no question about it, for all the reasons that we articulated; the scale, the reach, the embedded risk management and compliance tools that are built into it. If you just reflect back for a second, as I said earlier, we really just started this journey with Visa Direct 12 to 18 months ago in earnest, so as Al said, it's all about reach. It's all about getting out there to the world, to clients, to help them understand the products, and then tying it back to the B2B space, making sure that we're working with the invoice providers so that Visa Direct is embedded in their electronic invoicing capabilities, making sure we're working with the Echoes of the world who are automating a lot of the flows between patients and providers in the healthcare system so that they can choose a fundamentally better payment product.

Al Kelly:

Why don't we go over here?

Christopher Donat:

Thanks. It's Chris Donat with Sandler O'Neill. I wanted to ask you a question on Visa Checkout, and in my view it looks like it's going to be a key part of your future growth in mcommerce and ecommerce. How do you—well, I'm interested first in how has it succeeded so far, if you can give us some color on that, or anecdotes, either in terms of regions or types of issuers or types of merchants where it's gained a lot of traction, and then also think about how you've positioned it in the future, because you had one slide up there. It is a crowded field in terms of other offerings on a—at the point of sale for the mcommerce transaction. Just how do you stay ahead, or at least, on pace with others?

Al Kelly:

Well in terms of—and I'll give—both Jim and Ryan probably have comments on this as well—in terms of implementation—I think we had some stacked on one of the charts, but we're in 26 countries, including now, since we've got into Europe, I think we're in five different countries that are in Europe. We've got over 325,000 merchants. I think it's about $175 billion of addressable volume, and we've got 22 million accounts signed up in Visa Checkout, so that's the first point, so we're making good progress. Number two, we're really looking to make this a platform. We're trying to hope that we can have the best possible answer to making the movement from somebody shopping to buying, actually as smooth and have the greatest amount of throughput possible. That's the most important thing in ecommerce right now, is making sure that the throughput works from somebody going from shopping to actually buying, and by the way, as they do that, that the transaction is secure, and then thirdly, by the way, we're trying to help drive up authorization rates, which are way still too high versus the physical world, so we want Visa Checkout to be a platform that our clients can plug into, but we do it over time as we continue to work with the industry and moving away from this NASCAR kind of situation that we do have ecommerce Checkout today. You guys want to add?

Ryan McInerney:

I'll just add a couple of things and if Jim wants to—first is just backing up to the higher order issue. We just want to make it easier for you all to use your Visa cards to buy things, and it's just too hard today on your tablet or your phone or your ring or your watch or what have you. When we launched Visa Checkout, which was about three years ago almost to the day, there really was only one or two other platforms out there that were trying to accomplish that. PayPal was a good example, and we thought they were bringing something to market that was more focused on the cardholder experience and doing that made sense, and that's what we've done, but every six months that we've gone through the process, we've innovated the platform and tried to evolve it. You asked which merchant verticals we've had more success in than others. The truth is, it's across the board. I mean Jack showed we now have, I think, 40% of the addressable ecomm volume, at least in the U.S. here that accepts Visa Checkout. It's airlines. It's clothing retailers. It's quick service restaurants, up and down the vertical categories, and then just, I think what Jim mentioned in his presentation, with this proliferation of others that are out there; Android Pay, Samsung Pay, what have you, we realized Visa Checkout is more. It can be an acceptance mark of the digital world, and so we've opened it up, because again, we're not trying—the endgame here is not to get everybody using Visa Checkout per se. It's to make it easier for all of you in this room to use your Visa card to buy anywhere you want as quickly and easily and safely as you possibly can.

Al Kelly:

Jim, did you want to add anything?

Jim McCarthy:

I mean just that the physical point of sale analogy, I think, holds, which is you all have different choices. You all probably have lots of different cards in your wallets, but none of you are confused when you get to the physical point of sale because it's not just the payment rail, but it's the terminal itself is ubiquitous the way it works, in a tap, dip, swipe, whatever, and so what we're trying to do with Visa Checkout is really move it, as Vasant talked about, to being the digital equivalent of that, which means cooperation across the industry, setting standards that, as Ryan and Al both said, that number one, take friction out of the experience. It's just too hard. Number two, takes advantage of partnerships, because again, as you guys know, the browsers and others are doing things with fingerprints and iris scans and retinas, so we want to take advantage of that because that authentication is really important, and again, we want to be able to take advantage of best in class, but at the end of the day, put it all together with a highly secure, highly less friction process. We think cooperating across the industry is the best way to do that, and so the way I describe it is, it's like next gen EMV for omnicommerce.

Al Kelly:

Yes, sir.

Jamie Friedman:

Thank you. It's Jamie Friedman at Susquehanna. I was hoping to get your perspective, when we skate forward to the next quadrennial Analyst Day 2021, what would...

Ryan McInerney

No forecasting.

Jamie Friedman:

Hey, you cut me off. What would be the factors that would drive pricing higher or lower? Will prices be higher or lower then than they are now? Absent Europe, we have a very low bar.

Al Kelly:

I think that's a good question. I think many of the things we talked about today will continue to evolve. I think that we have to make sure that our network and everything that is built into it that was described throughout the day by numerous people is still viewed as the best and most secure, most efficient way to move funds. I think that it's going to be, number one, our growth is going to come in volume, in a classic right volume game. I think volume's going to play a bigger role in our growth than price, but I also think that we have to continue to look for ways to, as we move into different segments, to provide additional value and services for which we can get paid to augment whatever we get on a transaction by transaction basis.

Vasant Prabhu Vasant Prabhu:

Speaking of quadrennial investor days, as you can see, we have positioned them very strategically in between the Olympic years. We didn't want the Olympics to lose their audience because you are all here. We'll keep doing that, but speaking of pricing, it's all about value, and so we are—the question Al asks every day is, how are we creating value? Where can we create more value? Our goal is to focus on pricing to value, and our pricing, as you can see if you look at it, is adjusted to where we create the most value, so for example, when you facilitate a ecommerce transaction cross border, that is an incredibly valuable thing to a merchant. If I'm a merchant sitting in France and I get business from Brazil, from someone who isn't even in France, that is truly a wonderful thing for a French merchant. It's worth a lot of money. They will not quibble about what they have to pay for it because we create a lot of value, and we are the ones that make it secure. I mean without us there, no French merchant would sell something to an unknown person in the middle of Brazil, so—and that's just an example of pricing for value, and so the goal is really how do you create value, and we should be also open-minded as we look ahead as to new models for monetizing what we do, so don't assume that the traditional models of pricing will continue into the new world. As you know, we're entering the B2B world, and the B2B world, there are no commercial enterprises at either end. It's you and me doing our personal business. Could require a different revenue model; could be a subscription model; could be an advertising model, and we should be open-minded about that.

Al Kelly:

In the back over there. Yes. Thank you.

Jason Deleeuw:

Jason Deleeuw, Piper Jaffray Question on Visa Direct and push payments, and just how we should think about the Visa market share evolving over time with Visa Direct, and I want to hone in on the issuer market share and card market share that Visa has right now. I mean is that a key factor for how we should think about your Visa Direct push payment market share evolving, or are there other factors that we should consider that could drive where the market share turns out to be?

Al Kelly:

Well, I'll start, and any of my colleagues can join. I say every day, and I said it in my remarks today, that we have an incredible lineup of clients today that we have in our fold, and every single day our priority is to deepen and grow our business with those clients. That's what we think about. Episodically, deals come up. Deals come up for renewal. A new co-brand comes up, and we look at those on a one-by-one basis and decide whether we want to get involved in bidding for that business or not, and clearly, many times we do, but we don't all the time, so when I think about Visa Direct, or choose whatever else you want to pick; tokenization, Visa Checkout, anything else, our first priority is to go talk to our existing client set, the people that Chris and Oliver and Bill talked about, as well as the ones we have in CEMEA and Latin America, and so clearly, they're the ones that we first go talk to about Visa Direct, and I think the fact that—I think Ryan made this point, people are looking for a global solution. They're looking for a solution that has the key security elements built into it already; a solution that has the KYC and the AML capabilities built into it right away, so our objective, clearly, is to grow first and foremost with those current issuer clients. It may be, by the way, by helping them penetrate into new segments of players; B2B, the whole government segment that they're not in today, but I would say that that's our top priority as we relate to Visa Direct, so I think as we can grow and deepen our relationships with our current set of partners, and they see attractive use cases for their customers related—that are facilitated by Visa Direct, that's how it's going to grow. Anybody want to add or...

Ryan McInerney:

I would say, no, I don't think the attractiveness of Visa Direct has to do with market share. It has to do with scale, and some of the examples we went through today, if you think about Uber, and I think Jim described Visa is going to becoming the payroll of the gig economy, or Lyft. What you want is you want a partner with scale. You want to be able to turn on somebody who's got, in our example, three billion cards all around the world. Al talked about it in terms of all the different markets, a consistent set of, and standard set of capabilities around the world, or if you're Allstate, which I think is one of the examples that one of my colleagues gave, and you want to partner to whom you can get rid of checks and push out claims payments, you want someone with scale. You want someone with billions of cards, so I think that's why, in the early days of Visa Direct, we've had so much interest and excitement from governments, businesses, and people who will play in the P2P space about leveraging these somewhat new capabilities.

Jim McCarthy:

The only thing I'll add is that we didn't talk about a lot today, was instantly issuing virtual cards, so—and especially in the gig economy and a lot of emerging markets, a lot of folks don't have cards, and so we're working with processers—next gen processer like Marqeta, as an example, would have that capability today to push a credential to someone that doesn't, and then use the Visa push rail as you put funds in it, and just a reminder that once the funds go in on a Visa Direct over the debit card or virtual prepaid card, the best part is, is then it can come back out at a purchase, again whether it's a QR or mobile device or something else, so these are virtual-less, so what's great about this is we can issue a card that's virtual to that phone, we can push funds to it, and then they can start using the card virtually or in a face-to-face environment and take the money back out.

Tien-Tsin Huang:

Tien-Tsing Huang, JP Morgan. A couple of questions. I like all the push payments and Visa Direct. A lot of it makes sense. I'm just curious, the threat of that spilling into retail point of sale, whether it's long term, midterm, short term, and are there natural or unnatural gates you can put up to prevent that?

Al Kelly:

The benefit of someone like Visa really enabling fast payments in all these different spaces is exactly that. We have clear guard rails set up in our four-party model. We have products, policies, pricing models, and clear agreements with all the different people on our network, so that's exactly, in many ways, why a lot of people in the ecosystem are so excited about Visa playing the leading role in fast payments around the world, because of all the guard rails we have on that point.

Tien-Tsin Huang:

And then just as a separate question, just hearing Jim and all of you talk about digital, with Amazon and Whole Foods, and you have Walmart Jet, it seems like there's a digital and physical convergence going on as well. I guess my question here is, with these mega merchants and their scale moving up, but also the complexity going up around the payment, potentially, does that change the formula or the calculus around pricing and services and how you monetize those relationships? Does that make sense?.

Al Kelly:

I think now, as we seen, the largest ecommerce company in the world by a physical world company, I think it's somewhat confirming that omnichannel is the way the world is going, and I think that presents an enormous opportunity for us, in that we see all of these transactions, and we didn't talk a lot about data today, but we've got an awful lot of data and very strong analytic horsepower in the company, and I think we could provide a lot of insights for big and small, but obviously the bigger, the more insights we could provide retailers. We've had, over the course of the last 10 weeks that I can—that I was involved in, we've had the management teams of two of the biggest retailers in the world in our offices in San Francisco, and had really rich discussions about how their businesses could be more effective if they knew more about certain aspects of customer behavior, and I think we were able to demonstrate that we can be a terrific partner in trying to—in terms of providing them some insight that they can't otherwise get on their own, so I think it's exciting, and as people grow and get bigger and try to integrate new businesses into their business, I think it just makes us have the ability to be an even more helpful partner.

Lisa Ellis:

Sure. Lisa Ellis from Bernstein. Al and Ryan, you both highlighted today that you want to work in partnership with any ecosystem player that meets certain criteria, such as supporting the four-party model and providing end-to-end transaction transparency, however there are a number of models out there that do not meet these criteria. Realizing you can't comment on your dealings with individual players, broadly speaking, what's your strategy for dealing with players that do not meet those partnership criteria?

Al Kelly:

Well, I think that we believe, fundamentally, that each of the players in the four-party model who have invested tremendously where we have all been able to get this payment ecosystem to today, are extremely important and play very, very important roles. I think it was Vasant who talked about it. My hope is that, as we talk to people, they can understand the merits of the collective power that we have in our assets and in our four-party model, and that they're going to want to do business with us, and if we can't convince them and they don't, then we're not going to, but we're going to stand toe-to-toe, shoulder-to-shoulder with our issuer in acquire of partners and make sure that everybody understands the power that—and the benefits of that four-party model.

Vasant Prabhu:

Yes. The model only works if every participant both contributes to the model and benefits from it. If somebody wants to play on the basis where they just want to live off it, it isn't going to work, and as Ryan said we want to partner. That is in our genes, but if somebody doesn't want to partner, then we will compete vigorously.

Ryan McInerney:

Yes, and listen, the track record, we think, is good so far in terms of the people who've wanted to build on our network and uses a commerce platform versus those that don't, and like Vasant just said, the competition makes the world go round and we understand. If people want to compete with us, we'll compete with them vigorously and we like our hand.

Alex Liloia:

Hey. It's Alex Liloia from Primecap. This is not a guidance-related question, but I think transaction growth has exceeded volume growth for the industry over the past few years, and thinking about what you're pointing to in terms of Internet of Things, ecommerce taking more share, it would seem that per dollar of spending you have more transactions, because you're doing things and so forth, so do you think, hypothetically, you could see that trend even accelerate going forward?

Al Kelly:

I think so. I think it's more likely that more quickly we will get to the tail on the lower end than we will get to the tail on the higher end, so meaning we'll make more progress more quickly, particularly through things like contactless on the tail of micro transactions then we will see capturing college tuitions and, despite the progress we're making early on rent and car purchases and all those things that we know today are still largely done by check, and so absolutely, your initial hypothesis that transaction growth has exceeded payment volume growth in the last couple of years is true, and I—at least I, personally, would see that continuing.

Ryan McInerney:

Yes, and it's what Al said about, is working our way down the tail, but also just working our way around the world, that as you add more and more developing and emerging economies to the network, the places where we started in those are when we all travel and go to a hotel or a restaurant there, but as we really drive acceptance down in 50, 100, and 150 additional countries around the world, those are going to be smaller ticket transactions by definition.

Vasant Prabhu:

Yes, I mean your hypothesis is clearly more likely to be right than wrong, but I don't want to lose sight of some other things you heard in the developed economies where, as you said, we've been best—as you heard, we've been best in the middle, but we are going after the big ticket ones too, especially in the developed economies. That will have the tendency of driving up payment volumes, but you're more likely to be right on the transaction side than that being the driver. The other thing to point out here is that the long tail transaction growth is really important for our processing business. It's opening up new processing opportunities for us that we did not have before, and also getting us refocused on processing as a business opportunity in a way that is far more important today then it may have been three or five years ago, for the reasons you just mentioned.

Al Kelly:

Yes, and then we'll go back there.

Paulo Ribeiro:

Paulo Ribeiro from BMO Capital Markets. You spent a lot of time talking about faster payments today here. I'm glad to hear that, but I want to drill on two points. One is, Ryan, you say the fact that Visa Direct is better than ACH, and yet your main competitor decided to make a big acquisition, a big bat on a new set of rails. Do you think it's necessary to have a new set of rails out there? They have Mastercard Send, which is similar to Visa Direct, and yet they went to Vocalink, and second point is what would it take to bring faster payments to the POS retail, and is it—the guardrails you mentioned, are they commercial agreements, technology? What it is that will prevent this, not kind of validation, but this move towards retail payments?

Al Kelly:

On your first question, I'd encourage you to ask Ajay why he went and bought Vocalink, but I—that's his question to answer, not mine. On the second question, I think that the point of sale is—for faster payments is harder to do. Faster payments, also, really today is, until somebody figures out the credit piece, is really for debit and prepaid, and it's much more—it's a little more difficult with credit, but—I don't know what you would add.

Ryan McInerney:

I'd offer two observations. One is fast payments has existed at the point of sale for decades. It's called Visa Debit, and it works great. Merchants love it. Cardholders love it. Banks love it, and we have two billion cards around the world that are making fast payments at the point of sale every day. The second is, maybe it's more to the core of your question, what will it take for other new—maybe other network-based models to get at the point of sale in some way, shape, or form. At the end of the day, what matters most is a great value proposition for cardholders, for all of us. To change the behaviors of all of us every day all around the world, it's got to be something that is completely and totally better, not just as good. To change all of our behavior, it's got to be significantly better, and it seems like there's a lot of people that have tried it over a long period of time and haven't had a lot of success, because, what I said at the beginning, there's a great payments model that exists. It's called Visa Debit. There's two billion cards being tapped, dipped, swiped, and used online every day.

Jim McCarthy:

Yes, just to add to Ryan's, to make that real, you've got the bitcoin community. You've got a number of bitcoin wallets, coin based, and the way they get to the point of sale is a Visa prepaid card that's attached to it.

Al Kelly:

Yes. Back here.

Bryan Keane:

Hi. It's Bryan Keane, Deutsche Bank. Two questions, I guess. First one for Al, just on looking at the capital allocation and the target leverage, a lot of—if I hear a complaint about Visa, it's that they're underutilizing some of the debt in the balance sheet, and that the target leverage ratio could go a lot higher per capital return. Just, have you thought about that? Have you given that any deeper thought, and then secondly, for Vasant, just thinking about the upcoming changes in accounting standards for rebate and incentives, and I know there'll be no economic change, but there's a word maybe there could be a hit to earnings once that does get adopted, and I know you guys are September, so you won't be adopting until fiscal year '18, but just your latest thoughts on that?

Al Kelly:

Well, I'll comment on the first, and you feel free to comment on both. Look, we just—it hasn't been that long since we took on the debt that we have taken on. We're not necessarily afraid to take on more, but at the moment—and so it is something we talk about, but at the moment, not something we're planning to do.

Vasant Prabhu:

Yes, as I said, we're going to stick with the capital structure plan that we told you about when we took on the debt. At that time we explained why. It wasn't anything magical. We think this rating gives us flexibility to do whatever we want. You want to have some dry powder at all times and it could be useful. Yes, we have the capacity to add some more debt and we'll look at whether we want to do that. I mean we gave you a range and we're approaching the lower end of the range, but at the same time we've been pretty—had some significant buybacks in the last year as we've spent more than we normally would have to neutralize the effect of the Visa Europe stock issuance and all that, so as Al said, we'll stick with the plan we have, and if anything changes, certainly we'll let you know.

As it relates to the accounting itself, you're absolutely right, we will not be the ones who will go first because we are on a fiscal year that makes it necessary for us to do this only in FY—fiscal year '19. We will try though, even as we get into next year, to give you some sense of what the impact might be, even though we may not be actually reporting it in our numbers. We've had to work through some interpretation kinds of issues with the FASB and the SEC and all that. We, as an industry, are doing it together. Those are getting resolved, and then we have to go through every contract and figure out how the new accounting rules will apply to those. In the end we'll see where it lands up. As we've said over and over again, it has an impact on cash flow. It has an impact on economics. We'll wait and see whether it has any kind of real impact on the reported P&Ls. I mean this will be like other accounting changes we've had in the past, whether it is expensing or stock options or whatever. People will see the change and it's not going to change much. They'll understand what it is and we'll move on, but you should expect us to do this in FY19.

Bill Carcache:

Hi. Good afternoon. Bill Carcache with Nomura Instinet. In this era of consumer choice, there's one camp of investors that believes that MasterCard is essentially empowering consumers with the ability to make payment at the physical point of sale, whether it be through their debit card, credit card, or perhaps via ACH, and they've also made the point that the economics of ACH aren't really that much different from debit, and so, I guess, how would you respond to some investors who, perhaps, might be a little bit concerned that Visa isn't—doesn't appear to be necessarily as focused on the ACH piece? I know I heard your comments earlier, but I thought I'd ask you a little differently and see if you might have some color that you might add.

Al Kelly:

Well, I think that our job is to listen really hard to our issuers and what they're telling us they need, and we will, like we have in the past, make sure that to the degree they need a capability or a solution that we're not offering today, we're there to do it, but I think heretofore, as we talk to our issuers and we listen to them, I think that they believe that we have solutions today that satisfy the needs for them, and most importantly, their customers, so that—my focus is to try to meet and listen to the needs of our clients, and not worry too much about what MasterCard may or may not be doing.

Ryan McInerney:

Yes, I'll try to come at it a different way since you asked it different as well. What matters in the world, as you all leave here today, and we're all consumers and we leave here, in our space is you want to be able to buy things, and what we're trying to really focus on is what are the problems that are out there and what are the customer needs that are out there, and then how can we work with our partners to solve those customer needs, and again, we went through some of those today to give you some examples of different use cases which the products and services that were out in the marketplace didn't easily solve in the future—in the past. Customers don't think about ACH or debit or push or rails. They think about living their life, and again, what we're trying to do is work with our partners to create great experiences, electronify purchases, make it simpler, easier, safer, faster, whatever's going to make their lives better. Of those opportunities that we've encountered so far, we either have the capabilities to solve it we thought in the best way possible, or we had the ability to create new solutions, new products, use data analytics or other things on our network to solve it, and then we're going to keep working our way through that, and if there's new capabilities or products or services that we need to solve a problem that exists, or an opportunity in the world, we'll take a hard look at all those things.

Jim McCarthy:

Can I just put a fine point on that too? Just, by the way, this is not a new phenomenon. There's a lot of bodies on the side of the road that try to solve the c debit man (phon). To Ryan's point, it's not a problem that consumers are looking to solve. They have it today. It's called Visa Debit.

Vasant Prabhu:

Let me finish with one comment since it's the very end of the day, and so you heard us say all through the day that what—the capability we have to offer is ready today, available on a global basis, connects more points than anything else available, has more functionality, is more secure, so what you heard us today—what you heard us say today is, we think we have the better mousetrap. If you have a better mousetrap, would you buy a lesser mousetrap?

Al Kelly:

We have time for one more question, then we've got to wrap it up. Okay. That makes it easy. We threw a lot at you today. We really appreciate everybody coming and sitting through all of this, and thank you for the support of the Company, and I hope everybody has a terrific trip back to wherever you're heading, so thank you for being with us.

Ryan McInerney:

Thanks everybody.