TRANSCRIPT

2017 Bank of America Future of Financials Conference
Tuesday, November 14th, 2017

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SPEAKER
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PRESENTATION

ERIKA NAJARIAN: We are very pleased to have Naveed Sultan, the Head of Citi's Treasury and Trade Solutions, with us today. And for those of you who are not as familiar with this line of business, Citi's TTS business provides global cash management and trade finance services for clients across their global network of 100 countries and they've clearly become an industry leader by leveraging Citi's unique capabilities and, of course, unparalleled global presence. Naveed has been with Citi for nearly 25 years and in his current role since 2011 after leading the Transaction Services business in the EMEA region.

And please join me in welcoming him to the stage. Thank you for joining us.

NAVEED SULTAN: Thank you. Thank you, Erika, and good morning, everyone. Today I want to share some insights into Citi's Treasury and Trade Solutions business which is one of our largest businesses and the backbone of our institutional franchise. I will provide an overview of the franchise, including our strategy for continued growth, and then I will share a few examples of the ways that we are using technology today to enhance the client experience and fundamentally transform our business because, at its core, TTS is a technology-driven franchise delivering the power of our network through industry-leading digital platforms.

On slide 3, we show an overview of the TTS business. TTS is a global provider of working capital solutions and related transaction services to the largest multinational corporations, financial institutions and public sector clients around the world. We operate the largest proprietary payment network of any financial institution with direct connectivity to the banking systems in roughly 100 countries. And this franchise is not only valuable to our clients, it is also a significant contributor to Citi's results. Over the last 12 months, TTS generated over $8 billion in revenue and roughly $3 billion in net income. In addition, TTS has continued to improve its efficiency, achieving a ratio of 43% which reflects the benefits of scale and digitization of our business, and TTS' return on tangible common equity was highly attractive at over 20%.

Slide 4 shows our key product lines in TTS which together provides a full range of working capital solutions. In our cash business, we provide integrated liquidity management and payment solutions as well as commercial cards. We move roughly $4 trillion through our platform on a daily basis and generate over $400 billion of high quality deposits. And in trade, we remain a leading provider as well, facilitating flows and optimizing our clients' growing supply chains. Together, our diverse product set and unparalleled footprint gives us a unique advantage in delivering solutions for our clients anywhere they want to grow and transact around the world.

The benefits of our global footprint are clearly visible in our results. Across ICG, we are seeing strong growth in those businesses that are most closely tied to our network – in TTS, Securities Services and Rates & Currencies – where we are deepening our operating relationships to drive more stable and consistent revenues. In total, these network-driven businesses have generated high single-digit revenue growth in constant dollars since 2014, outpacing the rest of our ICG franchise.

The power of our network is increasingly evident in a digital world. With robust infrastructure and market expertise already in place, we are now using technology to deliver the power of this network to our clients in even more valuable ways. This means optimizing our clients' global operating models and decision-making capabilities, for example, through global commercial card and supply chain finance programs. Helping our developed and emerging market clients to expand rapidly into new markets or lines of businesses through physical or digital channels. Facilitating the evolution of local financial markets as they mature and become more digital themselves while leveraging best-in-class local market innovation globally and doing all of this through our own integrated global business model with our local markets expertise. In effect, as the world becomes more digital, it is amplifying the power of our physical footprint.

Our goal is to literally become an extension of our clients' operating models, enabling them to focus on their strategic and commercial goals while we provide the financial capabilities and know-how to facilitate their evolving business models. For our long standing multinational clients, who have built their global presence over the course of many years, we are already an integral part of their day-to-day operations.

For these clients, we work to further centralize and automate their treasury operations to improve their decision-making capabilities, optimize their liquidity and working capital – including supply chain financing – and to provide support in the case of transformative events such as M&A or restructuring. Beyond this, we are also helping these clients broaden their horizons. For example, thinking through potential changes to their business models brought about by digitization and how technology can create new growth opportunities. These clients represent a significant opportunity for us but we are also seeing the emergence of next generation clients.

These next gen clients are often wholly digital from inception and are expanding at an unprecedented pace. They need robust infrastructure, financial capabilities and know-how to support their global aspirations and we provide the platform and local market expertise to expand wherever they find opportunity around the world. Our revenue opportunity tracks this rapid pace of growth, allowing us to generate revenues in line with our longest-standing relationships in a much shorter period of time.

Now, I would like to spend some time on the franchise itself and how we plan to drive growth going forward. As you can see on slide 8, we have grown revenues at an annual rate of 6% since 2014 by steadily attracting new clients, delivering new solutions and gaining share of wallet. And more recently, we have also benefited from an improving interest rate environment. We are balanced across cash management, payments and receivables, commercial cards and trade. We serve a diverse set of corporate, financial institution and public sector clients. And there is no large concentration by geography, with a significant presence in every region, which is a unique advantage versus peers with strength in only one or two regions. Across our franchise, we are investing to continue to provide best-in-class client experience through a focus on innovation and digitization.

I would like to describe our products in more detail starting on slide 9. In cash management, payments and receivables we have continued to invest heavily in digital solutions to give our clients better analytics and execution tools with the ability to transact anytime, anywhere, across multiple devices. Revenues have grown at an 8% CAGR over the last several years, driven by growth in wallet share and client volumes. We have a growing, high quality deposit base and spreads have improved over time as we have focused on deposits with higher liquidity value. Going forward, and as interest rates continue to rise, these operating balances should help Citi continue to capture revenue benefits albeit partially offset by rising deposit price sensitivity as expected.

But keep in mind that our ability to provide comprehensive solutions to our clients makes the deposit-taking function just one component incidental to our overall value proposition. Our strategy is to deepen our operating relationships and drive higher client engagement and you can see our progress as measured by growth in dollar clearing volumes as well as our leading share of SWIFT and CHIPS volumes.

On slide 11, we show our Commercial Cards business where we serve roughly 6 million commercial card accounts with over $40 billion of annual purchase volume. Commercial Cards evidences our ability to develop new business lines to support the globalization of our clients' activities, for example, increased business travel. Our unique global value proposition in this business has enabled us to continue to gain market share.

Revenues have grown at 10% annual rate since 2014, supported by 8% growth in purchase sales, including 13% growth in international markets. Our goal is to provide a seamless, global platform for our clients and we are leveraging our digital capabilities to improve both efficiency and the client experience. Over 90% of new users are acquired digitally today and we have substantially improved our e-statement penetration.

Finally, on slide 12, we remain a leading provider of trade solutions – including trade services, trade finance and working capital and export and agency finance. Over the last 12 months, we have originated over $200 billion of trade finance for our clients and we manage over 700 supplier programs globally. Supply chain finance is another great example of how we are building new businesses by responding to globalization and deepening our operating relationships in a way that only Citi can.

To give a sense of scope, today we support roughly 70,000 active suppliers in over 130 currencies. We are able to optimize our clients' supply chains across more regions than any other financial institution. And we also provide greater transparency, reporting tools and security controls on a centralized global basis. The value we provide to our clients is not only in the financing, but in taking a holistic view of all their needs to provide integrated solutions that leverage our network and capital markets expertise. And as we move beyond commoditized solutions, we are able to drive share gains and improve the economics of the business.

Looking ahead, we expect our industry to be driven by the ever increasing globalization of trade as well as capital and digital flows. While the possibility of rising protectionism is of some concern, global trade growth strengthened in 2017 to roughly 4% based on current World Bank forecast through year-end. And this growth is expected to continue on that same pace through 2019, reflecting stronger overall import demand from developed markets, increased trade flows to-and-from emerging markets as well as a lesser drag from commodities. This represents a significant opportunity for clients as we speak to facilitate a greater share of these transaction flows.

Clearly, TTS is a large and attractive business today. As we look forward, we believe the market for cash management and trade solutions will continue to grow, driven by globalization, and we are well positioned across all key corridors of flow whether current or emerging around the world. The second macro driver for our industry is technology and digitization. As our clients' needs become more complex, technologies evolve and new business models emerge. Which brings me to my next topic, how we are leveraging technology today to enhance client experience while also increasing our relevance with our clients, and, therefore, our value as a franchise.

As our target clients become more global and complex, they need more agile digital and financial operating solutions. In TTS, we are digitizing our core banking capabilities, processes and platforms from front to back to drive an improved client experience. And our success in digital banking is being recognized with several high profile industry awards including Euromoney's Best Transaction Services bank and Greenwich Associates top spot in its Digital Banking benchmarking study for the 11th straight year.

CitiDirect BE is the foundation of our digital client strategy. It is a single global platform that provides access to global payments and receivables, liquidity management services, trade and FX solutions across three seamless channels – online, mobile and tablet – to improve user efficiency and self-service. Through our CitiDirect BE platform, a Corporate Treasurer or CFO of a large multinational client is able to manage their business and daily treasury needs anytime, anywhere, whether they are in the office or traveling around the world with the same level of security and efficiency regardless of what device they have at hand.

On slide 18, we show a proprietary tool – developed in our Innovation Lab – that harnesses big data in a way that only Citi can. Clients give us their business for three reasons. First, our network: the broadest of any financial institution. Second, our product platform: providing them with seamless connectivity around the world. And third, our market-specific knowledge: developed over decades of operating on the ground in nearly 100 countries. With this new tool, called TTS Interactive Solutions, we leverage big data to pull all three together for a very powerful combination.

Let me explain how it works. Historically, clients and their Citi representative would typically go back and forth multiple times via visits, phone calls, e-mails and spreadsheets to define the client needs, the internal and external considerations they face and, ultimately, arrive at a solution. Today, TTS Interactive Solutions expedites that process by drawing upon our big data capabilities and digitally creating solutions real time.

Let me walk you through an actual use case, for example, centralizing liquidity, a key objective of corporate treasurers. In this case, our platform accesses all the macro data we have collected for the markets in which the client operates, including trade flows, investment options, market regulations, et cetera. It looks at the client's legal entity structure, working capital needs and all the flows and liquidity positions around the world. It matches our product capabilities with the client's needs in each market and, finally, it asks a series of questions on the client's objectives. All of that goes into a series of algorithms to define a potential solution and the monetary value of the solution. We can then, interactively with the client, test the solution real time and make necessary adjustments to meet their objectives. So, in a nutshell, interactive solutions utilizes big data to expedite how we and the client work together to jointly identify the right solutions in an automated and seamless way.

Turning to slide 19, we show another example. This one is a collaboration with Citi Ventures to create a new working capital solution, Citi Dynamic Discounting, which launched in September in partnership with a company called Collaborative Cash Flow Optimization or C2FO. We have had a business relationship with C2FO since 2015 and made a strategic investment in them in 2016 through Citi Ventures. Through this partnership, we now offer our institutional clients dynamic discounting through online, real-time marketplace auctions. And we are also using it to manage Citi's own supply chain.

This easy-to-use platform allows suppliers to request accelerated payment of an approved invoice. They determine which invoices they want to submit and what their offer payment date and associated discount will be. And for accepted offers, the buyer initiates early payment and receives the discount. Overall, suppliers have access to a source of funds to support their changing cash needs. Buyers improve their gross margin and earn a return on their excess balance sheet cash and the transactions are processed through Citi's Payment Network.

Finally, on slide 20, is an example where Citi Ventures worked together with our Innovation Lab in Dublin to create a new digital payment solution for private securities: CitiConnect for Blockchain. The product launch in May with our client, Nasdaq, and leverages a Citi Ventures portfolio company called Chain. This integrated payment solution enables straight-through payment processing and automates reconciliation by using a distributor ledger to record and transmit payment instructions. A private securities transaction originates in the Nasdaq private market, there it gets recorded on Nasdaq Linq as well as a digital sub-ledger. The sub-ledger also links the two blockchain platforms and this facilitates the flow of payment information into CitiConnect for Blockchain, which integrates into Citi System for the final exchange of funds.

For our clients, this provides a seamless end-to-end process for transacting in private company securities. It also provides better efficiency and ease of reconciliation with real time visibility of payment activity on the blockchain ledger. And most importantly from my perspective, it builds a crucial bridge between blockchain and Citi's global payments network. Simply put, we are moving money through our pipes using blockchain technology. This is our first live commercial venture using blockchain technology. But we see many more potential applications going forward.

These three examples are just a few of the many things we are working on in TTS and across ICG to serve our clients in new and differentiated ways. And I'm excited about the potential of the franchise joining our global network with new technologies to both serve our clients and enhance returns.

So, in conclusion, we believe we have key advantages to compete effectively in our TTS franchise, including an unparalleled global footprint, strong operating relationships with our target clients, innovative digital solutions and a leading technology platform and capabilities. Our goal is to continue to build on these advantages to generate consistent, attractive returns for our shareholders and we believe we are on the right path to deliver on our plans.

With that, I would be happy to take any questions. Thank you very much.

QUESTION AND ANSWER

ERIKA NAJARIAN: Thank you, Naveed. So, before we open it up for Q&A, I thought I'd ask the audience, your investing audience, how they think about the revenue growth in this business. So, first polling question, what revenue growth do you expect from Citi's TTS business on an annual basis over the next couple of years assuming no additional rate hikes. One, above 7% growth; two, about 7%, in line with its reported performance year-to-date; 5% to 6% growth; or four, less than 5% growth? You have five seconds to respond.

And those of you in the room said that your expectations for revenue growth, you're pretty – so, we're going to need guidance from you, Naveed. 33% of you say 5% to 6%, 25% of you say about 7%, in line with the reported performance, 22% say above 7%, and 19% say less than 5% growth, which tells me that the audience maybe has no idea.

So, Naveed, maybe we'll talk a little bit about it here. I thought it was a very compelling slide, the one you showed about globalization and trade growth. And so, as we think about trade growth expanding over time, talk about sort of what the revenue opportunities are for your TTS business in a steady state environment, and if we do see that trade growth that you showed on that slide.

NAVEED SULTAN: I mean, if you look at our performance in the last three to four years, we have been growing steadily year-over-year. And that does reflect our ability to continue to grow even in a low interest rate environment and even if the economic environment does not consistently have an upward trajectory. If you look at the notion of trade today, we believe – aside from the WTO projections – we believe it will continue to accelerate through the interaction of technology, digitization and trade.

Just to give you an idea, the global flows have made a contribution of about 10% to the global GDP over the years and in 2014, that stood around $7.8 trillion. Out of that, $2.8 trillion was contributed by data, innovation, new ideas. So, the point being that while the traditional trade, which was really the 20th century phenomena, maybe somewhat leveling off or growing at a relatively lower pace, that digital flows are really soaring. And that is creating new revenue pools, new age clients. It's also creating new ecosystems, in which we are participating.

So, in addition, to historically taking the developed market clients global, we have also taken emerging market clients to help them realize their global ambition. And now, the new age clients, who are on an accelerated path to globalization and are expanding globally, we are providing our capabilities and infrastructure.

And the last point I want to make on that is that if you look at this discussion around national protectionism and all the rest of it, I think the only impact, in my view, it's going to have is it's going to shift the trade corridors as opposed to dampening the trade in any meaningful way. And because of our network, historically we have seen the trade corridor shift for economic and development reasons, this time it may be for geopolitical reasons. But we typically find ourselves on both sides, origination and distribution of a particular corridor. And this last recent announcement of China Belt and Road Initiative, which touches about 68 markets and about 30% of global GDP, the projections are it's going to contribute about $2.6 trillion of trade flows by 2025 and there is an investment of about $1.2 trillion to realize that ambition.

We are the only bank who is, out of those 68 markets, we are in 58 markets to facilitate those flows. So, no matter how you look at it, the opportunities are abundant, and we believe because of our network, accumulated experience, the platform and technology and our continuous investments, we are exceedingly well-positioned as we move forward.

ERIKA NAJARIAN: So, I wanted to also ask you about what I thought was a very compelling statistic that your business contributes 44% of the consolidated company's deposits. And we've heard a lot of talk about the value for retail deposits in a rising rate environment but I actually think that TTS deposits are very undervalued and so maybe share with the audience how TTS deposits from a volume and rate perspective typically behaves in a rising rate environment.

NAVEED SULTAN: Yeah. A very good question. If you look at how we generate deposits, they are incidental to the working capital management and operating cycling solutions we provide to our clients. So just imagine a complex global supply chain of a multi-national and there are billions of dollars which flow through those supply chains and their ecosystem. And we are literally an extension of a client's working capital. So, they are focused on the commercial and business goals and we are providing financial capabilities, infrastructure and know-how on the financial loop of the working capital. So we are literally their extension.

Now to service those flows with their supply chain and ecosystem we generate liquidity which goes through the financial loop which we provide them. And of course, then we have to put different structures around it, we then determine the pricing and all the rest of it. But the underlying point is it's incidental to the solutions we provide, it's not that we directly go and generate deposits and that actually gives us – it gives our clients a much better appreciation of our solutions. That's why the quality of these deposits is very, very high. And the way we price these deposits is not just on an episodic deposit basis, it's a consideration of the quality of the solutions we have, overall client relationship we may have, what is the interest rate environment, what is the competitive dynamics, our balance sheet needs and things of those nature. And all of that will then go on and determine what the pricing is. And of course, we are also watching the beta, or the sensitivity, to your point, in rising interest rate environment. And thus far, recognizing the point which I've made – the value which clients put on our solutions – those betas are within our parameters of our models or our assumptions.

In the medium to long-term, a steady interest rate environment and normalization of interest rates around the world does help in the overall top line. But the way we gauge the performance of the business in an environment like the one we have been for a long time is what are the underlying operating drivers? Are we getting market share? Are the volumes going up? Are we building new lines of businesses? Like supply chain and commercial cards is a recent phenomena, which our network allows us to build upon. So, our operating drivers have been all positive, sustained trajectory and so, therefore, the growth you are seeing 6% or 6.5%, whatever it is, is driven by a very broad-based underlying operating drivers.

ERIKA NAJARIAN: So, I'm going to maybe turn it over back to the investors. And clearly the stock has been on a tear this year and I'm wondering if you guys could give us your opinion on what can continue that outperformance. So, if you could please bring up the next polling question. The shares of Citigroup have outperformed strongly this year. What do you think extends these outperformance in 2018? One, executing on best-in-class capital return. Two, consistent improvement in revenue momentum regardless of the rate outlook. Three, further core cost control. Four, efficiency improvement below the 57% reported year-to-date whether it comes from revenues or expenses. Or five, a better visibility generally on near-term EPS power. So, now we have a vote. So, for those of you in the room, you're saying So, the most popular answer is 43% consistent improvement in revenue momentum regardless of their rate outlook. The next most popular answer is 28% of you say best-in-class capital return. I would like to point out that only 5% said further cost control.

So, it seems like the restructuring story is truly, like you declared in July, behind the company. Talking about consistent improvement in revenue momentum, let's think about you mentioned the different products; cash management, payments, card and trade finance; you said that they're, you know, that commercial card opportunity is a little bit newer. Can you sort of discuss what that opportunity set looks like for over the next few years?

NAVEED SULTAN: Like I mentioned earlier, the continuous globalization of flows and this whole notion of digitization actually presents us a lot more opportunities. So, I'll give you a very simple example. If you look around the world today, most of the countries are going through a very serious financial infrastructure upgrade, which is faster payment, instant payments and things of those nature and that essentially is in anticipation of how the world is evolving, which is the e-commerce trade. And as the global ecosystems develop, you have consumers participating in that, you have businesses participating in those, governments and financial institutions. So we are investing in all that infrastructure, and in fact, in many countries because we have an on ground presence, we work with the regulators and policymakers to shape the financial infrastructure for the future.

The point being that that gives us access. Typically our posture historically has been business-to-business, servicing of the flows, now it is opening up business to consumer, consumer to business. And, I wouldn't name it, but one of the clients, we make retail payments on their behalf in 560 cities and that gives you an idea as to what the new flows are emerging, how we are connecting with the new financial infrastructure and how we are accessing different kind of flows right now.

So, I think the digitization and the new-age companies who are on an accelerated path to globalization offers us a very significant opportunity. The e-commerce space is a very, very significant opportunity. We continue to generate new lines of businesses as clients are evolving and consolidating their business away from disparate providers in multiple countries. So, if you think about the background of supply chain and the commercial cards, the clients used to offer these had this business with disparate providers in different markets. But that creates a lot of cost friction and non-standard pricing and things of those nature. But then they look for a global provider. How do we consolidate to find a net source of value in that productivity and things of those nature? The only credible provider globally matching their footprint was Citi and that's why supply chain and the commercial cards has been one of the fastest growing.

In terms of the specifics, I think public sector is a very significant opportunity for us. Financial institutions is a big opportunity. I've mentioned the new corridors which are emerging, south-to-south corridor. So no matter how you look at it, geographically, customer segment as well as new emerging players as well as corridors, I think the opportunity is really very significant for TTS.

ERIKA NAJARIAN: That's great. So before we turn it over for Q&A, we just want to finish off with two polling questions, one on efficiency and one on innovation as it relates to Citi's efforts. So if we could just get your feedback on what you're thinking for 2018 at the consolidated level, where do you see Citigroup's efficiency ratio settling in 2018? One, below the 57% reported year-to-date in 2017; two, in line with the 57% reported in 2017 year-to-date; and three, above the 57% reported year-to-date in 2017. So you have five seconds. And Naveed, I won't put you in the spot and have you respond to this question.

NAVEED SULTAN: I can give you the answer.

ERIKA NAJARIAN: So 54% of you say below the 57% reported year-to-date in 2017 and about evenly split in terms of in line or above. Now, I'm going to move on to the next polling question.

On the topic of innovation, do you consider Citi's investment efforts to be: one, above and beyond what peer banks are doing; two, about in line with the innovation investments and efforts at peer banks; and three, below the innovation investments and efforts at peer banks. Few seconds left. So 50% of you say about in line with the innovation investments and efforts at peer banks and 32% of you say above and beyond. Now, Naveed, I will ask you to respond to this, given that you dedicated half of your presentation on some of the efforts that you've made within your business.

NAVEED SULTAN: Yeah. I won't compare it with the peers, but I can give you our own perspective on it. This is, like I said, is a technology-dependent business, and I will also rope in the operating effort. The reason we are very focused on running this business with a great financial and operating discipline is that we want to maintain a very good operating efficiency because it allows us to continue to invest in this business.

And in terms of the investment, there are four primary areas where we are investing at a high level. Improving the client experience around the world through digital means; making our business more scalable; operating model agility, which is to say we want to automate, rolling out robotics, and some of those technologies, so that we reduce our dependence on physical infrastructure to deliver the value to our clients. And then, of course, fourth is innovation; these four things.

And to our mind, it's a very profound way of making an investment, because if you look at the new age players today, fintech or other successful new age companies, whatever industry they might be they basically exhibit those four attributes and we are investing to acquire and improve ourselves in those four particular areas.

So, specifically, we are investing in artificial intelligence, we are investing in robotics, in machine learning, we are investing into new financial infrastructure which we mentioned. So the idea here is to help this business, which is already a market-leading business, to make a complete transition into a digital environment and that's where our investments are going and the evidence of the success of that strategy is quite compelling.

ERIKA NAJARIAN: Thank you for that. And with that, I'd like to open it up to the floor for any questions. Steve?

STEVE WHARTON: Hi. Steve Wharton, JPMorgan. I know that there are some that feel like the SWIFT network has antiquated and there was a number of Silicon Valley start-ups like Ripple and others that were trying to come up with interesting ways to use blockchain or other technologies to essentially replace SWIFT over many, many years. I'm just curious your perspective. I mean, you're using blockchain, which is good, but you do have this embedded network that's very valuable that is at risk if something comes along to replace that basic infrastructure.

NAVEED SULTAN: Thanks for asking the question. At a high level, we believe that the technology, digitization, whatever expression you want to use, enhances a network, does not diminish it. So specifically for blockchain, in the academic and technology circles it is being talked about as the fifth horizon of the network economy. It's the Internet, World Wide Web, cloud, then mobility, Internet of Things, and then blockchain. It clearly, even though it is in a nascent stage, it clearly has a very broad-based application across industries and all the rest of it.

And if you come to financial services, if you think about there is a significant amount of infrastructure in financial services which is geared towards solving the problem of trust and asymmetry and we believe that blockchain can actually help us – not replace us or disrupt us – can help us in solving some of those problems. And once that happens, it would release a lot of efficiency back to the institution and the system, which can be deployed in creating greater value for our clients.

So, technology by nature, goes in where there are friction points. So there are several examples I'll share with you. For example in Europe, Single Euro Payment Area, when it came around, which was really the normalization of the clearing infrastructure and all the rest of it, in the short-term, banks lost a lot of money because we were really making money off FX and people living in different currencies. Today, we're a lot more successful because the idea is not to compete on the inefficiency of the infrastructure; the idea is to compete on value-added solutions and that's exactly what happened. So we believe, and by the way we are working on several use cases on blockchain. I mentioned one. Trade is one, payments is another one, so we are very engaged vis-à-vis our clients, third party providers as well as developing in our innovation centers the use cases. So we are watching it very carefully and we believe it's quite relevant.

ERIKA NAJARIAN: One in the back over there.

SPEAKER #1: Could you help us understand better how blockchain brings any great advantage to the transaction that you put forth as an example compared to just a third party authentication that's cloud-based and visible to all participants because blockchain seems like a clunky way to do it. Why is the choice SWIFT or blockchain, why isn't it just a streamlined version of a third party authentication?

NAVEED SULTAN: It's a good question and I think you'll find very credible debate on both sides of the aisle exactly to your point. Like I said, blockchain is really a nascent technology. It has to evolve, it is still very inefficient in many ways because it really consumes a very high computer power. It also has, if you keep it non-permissioned, which means it is really everyone is engaged in it, it has the potential to create friction and distortions in the marketplace. If somebody has a much higher computing power, it can distort the market. So my point is that it's evolving still. But if it reaches a point of efficiency where the points of friction and all those things are sorted out, from an infrastructure standpoint, I think it can potentially have a very important and efficient application. So for example, transfer of assets.

I'll give you one example on the trade side. Trade today, because it tries and solves a problem of trust between the parties around the world, you may or may not know them, and it's hugely paper-intensive. And if you put the new regulatory and compliance requirements on top, it makes it a lot more expensive to do trade the way it is done today. So different banks are making efforts.

So for example, we are rolling out optical character recognition to process our documents in places like Penang in our service centers. But if the blockchain evolves to a point where it replaces the documents and the friction points across the trade chain because it solves a problem for trust and it is within a permissioned blockchain community, then I think it will bring a lot of efforts. But right now, what you're seeing in the marketplace is people are accumulating experience. They are testing the technology. So it's exactly the way any technology evolves.

So I'll just conclude with a comment that, in the short-term, a typical technology of that nature, its impact is grossly overestimated, but in the medium to long-term is grossly underestimated. So I think it's at that stage where there's a lot of conversation with few credible users, but people are investing and learning and developing experience. Just like MP3 player, when it came initially, how it evolved over a period of time until what we see today in terms of Apple and all that came about. I don't know if I answered your question or not but that's my perspective.

ERIKA NAJARIAN: So with that, we'll have to take the remainder of your questions in the breakout session. We also have John Gerspach here for the breakout. So thank you so much for joining us on stage, Naveed. Appreciate it.

NAVEED SULTAN: Thank you.

