>> INTERVIEWER: Adrienne - thank you for coming to Ross today and speaking with us about your experience as a FinTech executive. We'll get started.

>> ADRIENNE HARRIS: Thanks for having me.

>> INTERVIEWER: We'd love to hear, I think, starting to hear about your career. You've had an incredible and unique career journey going from big law to the White House to a fintech startup to academic research and teaching. Can you walk us through how you made those transitions?

>> ADRIENNE HARRIS: Sure, so you said "I went to law school, I'm an JD MBA, but I did them separately, 'cause there was not smart enough to do a joint so I went to law school and follows a very traditional law school path, which is to go to a big law firm in New York, which I did for several years, but while I was there, I was always really involved in politics. So I did appointments on the transition for Eliot Spitzer when he first got elected governor in the transition for Sivan who's the Manhattan district attorney is the second largest Prosecutor's Office in the country. I ran queers may re-elect and then set up his first Senate campaign, and then I worked on Obama ‘08. So I was sort of in and out of the law firm doing derivatives, work in Latin American man, a and then doing political work. But I knew the law firm life-long term was not for me and I had done all this political work. So second term Obama, they asked me to come down to the administration. So I went to the Treasury Department as a senior advisor to the Deputy Secretary who's sort of like the COO of the department. Worked on cybersecurity, sanctions, Housing Finance, a hodge-podge of things, and then the White House to ask me to come over as one of the presidents, special assistants and to run the financial services and housing finance portfolios. I brought FinTech into that portfolio and really started to think about the administration's posture towards FinTech as prior to that we had been very crisis focused, and for good reason, we were thinking about all the reforms coming out of financial crisis, but I thought we also needed to seize the opportunity to think about the future of financial services. And for me, that was FinTech and so I brought that into the portfolio.

And then when the administration ended, I thought well maybe I should put my money where my mouth is and went out to San Francisco, was a founding Executive in this insure tech company that we grew very quickly probably by acquiring one of the incumbents, which is a little unusual. Right, using... It's the big guy that acquires a little guy.

We did the reverse. And now I'm an advisor to that company, it's a large insurance company, and I decided to come here and teach FinTech and do research and advise other startups. So we can talk more in detail about how I made some of those decisions but I would say largely, it was taking advantages of opportunities as they came and doing things that interested me.

I think it's only sort of in hindsight or looking back 2020 that it seems to make sense. It's all financial services. There seems to be a good narrative there, but I'd be lying to you office that I planned it that way.

It was just things that were interesting to me or opportunities I couldn't pass up all in the same space, but it was just things that seemed interesting and fun, and they'd be a creative to my professional life.

>> INTERVIEWER: Yeah, I'd love to hear more about how you kind of pinpointed which opportunities are worth pursuing and kind of pivoting your career.

>> ADRIENNE HARRIS: Yeah, for me, I said it's mostly interest-driven right? You wanna have some staying power, and demonstrate that you can commit to one thing for some period of time, but you should do what's interesting to you. And the way I always thought about different opportunities as they came was especially early in your career, is like, does it open more doors. Than it closes? So if I do this thing, if I take advantage of this opportunity, what are the doors that will be open to me afterward and are there more doors open to me now than there would have been had I not taken this job, or had I taken a different job or a different opportunity?

So I always sort of thinking about the job after the job. I also have a very good friend who thinks about it slightly differently, but I think it's a valuable framework as well. He's always approached his jobs is what are the skills I wanna acquire if I have a long-term vision, like a 10-year vision. What skills do I need to get to the 10 year vision, and how do I then find opportunities that will add those skills to my profile if you're organized enough to have the tenure vision which I never was. I think that's also a very effective framework. But for me it was dope more doors than it closes. That means, does it expand my network does it add to my skill set? Is it fun and interesting, and do I think there can be lots of other things that I could do for me.

>> INTERVIEWER: That’s wonderful. Yeah, I think especially a lot of us are beginning to launch or relaunch our careers after graduate school, so that's really helpful thinking about skills and opportunities, especially surrounding FinTech which I think is a huge draw will why a lot of us came to here you speak tonight. We all know, FinTech such a hot topic, it's new, but there are a lot of unknowns. Where would you recommend we start interested in pursuing a career like yours?

>> ADRIENNE HARRIS: Yeah, it is, it's great that it's a hot topic now and then, people recognize the power of FinTech. Because when I started looking at this several years ago, people were like... It's a fad, it's not a thing, isn't an ATM. FinTech and I was like, "Well yeah, I guess technically, but like... No, it's not what we're talking about now. I think it has much more validity and staying power so much so that you hear people saying, "Well it's not really FinTech isn't it? Now, just financial services, the two are so interwoven. It's a big area financial services. Part of the reason why I like financial services, is it touches everything, there's nothing you can do in the economy, there's no industry, you can pick that doesn't touch financial services somewhere.

So if you think about FinTech, you definitely by impacting financial services, you then have the power to impact all kinds of other things, whether it's sustainability and renewable energy me financial inclusion manufacturing, whatever your thing is, it touches financial services somewhere.

So I think part of the way to approach FinTech is - Is there a narrow slice of financial services that interest you, right? Are you into asset management, do you like banking, or payments or is there some other industry that is in financial services per se, but you can see the hook as to where something in the financial services space, could make that industry better?

So part of the way to approach it is just, is there something I'm interested in or a few things you're interested in and how do you learn as much as you can?

Are there courses you could take? Who do you follow on Twitter? Are there newsletters you can get, right? I always hesitate to recommend books to people because by the time somebody writes a book on technology, right, it's like out of date by the time it gets published, generally, but I keep a list of people I follow on Twitter and newsletters, weekly or daily newsletters that I like to read to. The quickest way to get up to speed is to just dive in. And then like any area, you start to talk to your colleagues, you start to talk to experts in the field, you start to read more, stop and slowly but surely you build up this interest and expertise about a topic before you know what you're off to the races.

>> INTERVIEWER: I love to hear you talked about how financial services touch everything. Yeah, so which issue, which kind of joining industry kind of grip to you and pull you into FinTech?

>> ADRIENNE HARRIS: So I was really like a financial services person. I'm like that nerd but for the reason I described... So for me, it was the fact that financial services in some way is a utility. It touches everything. It's the foundation that interested me. What in some ways the same reason I went to law school, I was like, I wanted to learn the rules of the road. I wanna understand how governments work. And then I went to be school 'cause I was like... Well, now I wanna understand on how business works, like what are the rules of the road, and then how do I build from there?

Lately I've been sort of gravitating towards FinTech and sustainability, right? And what are the ways Financial Services can help us think about environmental issues? But I do stuff in payments, in banking. We have this project on financial inclusion with the Gates Foundation. I sit on the board of the Financial Health Network which is less about inclusion but more about financial health. So how do you make sure people have resilient financial lives? So for me, I'm always interested in shiny objects. So there's lots of issue areas and subject matter of topics that I'm interested in all the time.

>> INTERVIEWER: And all one thing that I think we often like to ask experts is: is there a secret weapon to being successful in this field or a way that we can position ourselves well right out of it, after graduation?

>> ADRIENNE HARRIS: Yeah, I think there's no secret sauce to FinTech per se. I would say one of the things in being successful generally, a couple of things. One, I would say you need to establish what lawyers call a jurisdictional hook. You need the thing that you're an expert in even if you wanna be nimble and a generalist and play in lots of different fields, you need to establish yourself as very good at one thing. Generally, first, right?

For me it was derivatives. Not because I came out of law school and knew anything about derivatives. I was practicing law and much of the same way you take a professor in school and not a class always.

I was interested in working with this partner because our working styles were very similar. He happened to be the head of the derivatives group. Hence, I developed an expertise in derivatives and there's very little that I've done with the rest of my career that's related to derivative, but I established myself as a credible person who could learn fast, who could work well, who could advise clients, who could identify trends and that skill set became transferable to all kinds of other things. So I think one piece of advice I would give people is like, "What's your jurisdictional hook?” It doesn't have to be the thing you do forever, it's just how you start to establish yourself. And then from there, you can do lots of different things, and the more times you do that, the more nimble in some ways you can be. So I became an expert in derivatives and derivatives law and regulation, and then I went to Treasury and was doing cyber security, and sanctions, but now the people around me in my network know that I'm good at getting up to speed on things quickly. That I can size up different issues, that I can execute on things so then people are more apt to let you do things that are different from maybe your original, original path.

So it's always: get smart on something work hard produce excellent work product.

And I know it seems sort of cliche to be like work hard to be good at what you do, but in some ways like life is sort of that... That's simple.

And the other thing I would say is, you guys know this 'cause you're B school, right?

Networks are so, so important. We were talking earlier with a group of students about cover letters, right? And resumes are... You guys are all for you, do resume drops you do interviews.

But I think aside from my first job at a law firm, which is a very young rote recruiting process, I haven't really applied for a job ever. And it’s not because I’m a special snowflake. It’s because I was good with keeping up with people, maintaining a network, so that when something interesting came along, people would reach out to me about something. So I think maintaining that network and thinking strategically about the people around you is also a very important thing to do.

>> INTERVIEWER: Yeah, it's so helpful. Like building a reputation of someone who learns quickly, and then building advocates for yourself as well.

>> ADRIENNE HARRIS: Yeah, and I would say we talked about this in the earlier session. It's easy to think that because people aren't coming to you and giving you a pat on the back for a job well done that they're not noticing or if they're not coming to you in scolding you for leaving work early or for cutting corners that they don't notice, people always notice they notice the good, and they notice the bat and just because they don't point it out, to you doesn't mean it hasn't resonated for them. So part of the way to develop a good reputation is to just. It sounds paranoid. I don't mean say you should be paranoid but you should be a little paranoid that people there are always watching and when you do go to work, and when you go the extra mile and you come in early and you stay late even if people aren't giving you the atta girl or atta boy, as a result they notice and they will give you opportunities as a result.

>> INTERVIEWER: That's why I also think being an expert in such a niche emerging field, I bet you're often the teacher in the room, so bring you people along with you is a big part of that as well.

>> ADRIENNE HARRIS: Yeah, yeah, yeah. And I think when I first started thinking about FinTech as I said, other people were like... This is a fad, this is not gonna be a thing. Everything has tech at the end of it. But I felt strongly and I had been in the industry long enough to know that it was gonna change, that it was right for disruption. I had witnessed the financial crisis first hand. People forget the iPhone was just becoming popular, really popular at about at the same time as the financial crisis. So, you have mobile technologies coming along very quickly a large distrust in financial institutions, millennials are starting to come of age. All of this collides at one.

Of course, things were gonna change but part of what enabled me to be on the front of that wave was despite people telling me that FinTech was a fad or this wasn't gonna be a thing was just realizing for myself and I could've been wrong like I just as easily could have been wrong, but I had developed enough expertise to sort of identify what was gonna happen, among other people. Obviously.

>> INTERVIEWER: Wonderful, well like you mentioned you have a law degree and an MBA and now you're teaching at the Ford School, for Public Policy, so how do those disciplines work together in your work?

>> ADRIENNE HARRIS: Yeah, again, I'm not sure when I was thinking about my career, I was like, "Oh it'll be really great. I have a law degree and do the MBA.” Right, it was not that well thought out. And I tend to think that most people that tell you that they planned everything from the very beginning are fibbing is the PC term I will use. They're fibbing. I will say for me, and I don't remember if I was in the law school or I was already sort of adulting. The Harvard Business Review wrote his article a long, long ago, called the Tri-Sector Athlete. The crux of, which was the people who are best equipped to solve the hardest problems are people that have experience in the public sector, the private sector, and the philanthropic sector.

And I sort of thought about that a little bit differently, which is, as my career sort of evolved is like, "Well I've done financial services in New York now, I've done policy in DC. Now I'm gonna do tech in San Francisco, Silicon Valley. But I think what the take-away for me from the HBR article is... And my career is like if you are interested in lots of different things or different sides of the same industry, the ability to translate, to be in business and talk to policy makers or to be a policy maker and talk to business or be a lawyer and talk to the Corp comms group at a client… the ability to do that translation and do it credibly for me has always been an important skill. Now it's not important to everybody. Some people are like... I wanna be the best lawyer, I can be and... And that's fine, and valid. My attention span was just always too short for that, to be frank, and I liked the idea of being able to play in a lot of different arenas and have credibility in them.

So there was no grand plan about marrying these things together. But I do think it's...

I had a ultimately, hopefully it's not all over for me yet, but I do think it's resulted in a sort of unique skill set in space, that's allowed me to do fun things.

>> INTERVIEWER: That's wonderful. Do you mind sharing a little bit more about your project with the financial inclusion?

>> ADRIENNE HARRIS: Yeah, so the Gates Foundation came to Dean Barr at the Ford School and he came to me about this project. We called Central Bank of the Future, that the Gates Foundation and Bill Gates were interested in. The basic crux of which is if you were gonna remake a central bank, right? Like the Fed or really any financial regulator so that financial inclusion was at the core of the remit.

How would you change it, right? How would you remake the feds or that financial inclusion was a core part of what they do as opposed to... And we also do IT, and the nice to have. And how would you use technology to do that?

So they gave us a grant. The project's a two-year project, where we talk with informers from all over the world with technologist, and futurist bankers to think about, if you could remake the Fed or the Central Bank of Kenya or whoever so that financial inclusion was at the core, what would you do and how would technology help that?

So we talk a lot about Central Bank digital currency which is obviously a very hot topic we talk about what if the central bank or a financial regulator was the arbiter of identification because identification is so core to what you can do in financial services.

What if there were more women as Central Bank governors would that make a difference, right?

How would the mandate change such that financial inclusion could be more steadily advanced around the world?

So we're about halfway through the two-year project.

Hard to believe it's gone that fast or we've come up with some really interesting things. And I think there's probably more to come at the end of it. We have to go back to the Gates Foundation, with recommendations for additional research we think is worthwhile, technological utilities that they could build for central banks and recommendations for central banks themselves about things they might do differently inside their four walls, that would help advance financial inclusion.

>> INTERVIEWER: That's wonderful, it's great to hear about cutting edge technology being built around inclusion. And normally technology is not built in that way.

>> ADRIENNE HARRIS: Yeah, it sort of ends up being exclusionary in a weird way.

>> INTERVIEWER: Well, one thing we also wanted to chat about is when we think about FinTech, today we think a lot about startups like Venmo. What are other areas in FinTech that students can get involved with besides payments?

>> ADRIENNE HARRIS: Yeah, and there's so many areas. Payments, we touch every day. It was in New York yesterday and I was a long-time New Yorker I was so thrilled to get on the subway with my phone, it was like the coolest thing I wasn't fumbling for my mentor car. I was like this is great asset management right banking, which is more than just payments lending insurance, which is part of what I did. Insurance is obviously very broad. Capital markets every area of financial services is cliche, to say, but it's being disrupted by technology, so any area of financial services, you could think of. They're sort of a FinTech thing happening. I think what's happened over time, is FinTech. When it was just emerging, with payments and lending. It was prosper and SoFi and all of that stuff, and that still exist. But now what you've seen is the industry shift toward more balance sheet intensive things. So insurance that require some capital reserves, more capital markets, and things that are more part of the financial infrastructure right? So if you think about payments, it's usually the cool app, right? It's the fact that you can put your thumb on your phone or show your face to your phone and make a payment. It's the glossy on top of the infrastructure, but the infrastructure is largely the same, at least in the US, but as FinTech matures, you're seeing more and more tech impact the infrastructure of the financial system itself, which is harder, it's harder to do, it's easier to paint a wall than it is to knock it down and rebuild it. And so now we're in this phase of FinTech we're seeing more people think structurally about changes they can make and not just about a new color of paint.

>> INTERVIEWER: Yeah, that infrastructure, so OS as consumers, what kind of piece of that infrastructure, do you think is the next thing that's gonna kinda pop in to TEC.

>> ADRIENNE HARRIS: Yeah, I mean, so part of it is it's still payments. And I'm sure folks who follow this, have seen the Feds work on real-time payments. So you guys know probably a in the US, I send you some money if I do it through ACH, right bank to bank, I'll send it to you today, and it won't show up in your bank account and do what's today, Wednesday? So Friday at best, probably Monday, right? The system shuts down over the weekend, right? I mean it's no that doesn't happen in a lot of other places in the world. So the Fed has been working for a long time to make payments real-time. That it sounds very vanilla but it's really important, right? Especially if you're paycheck to paycheck, that timing gap really is the ball game, for a most working class and middle class people. So that's gonna be a big change in infrastructure.

Lots of developed and developing nations, did this long ago. The U.S. is woefully and shamefully behind in this area. But part of this because we had this legacy infrastructure that didn't exist in other places, so that is gonna be a big big change. There’s lots of stuff happening in capital markets. How do you take a liquid assets and make them liquid so that they're available on a secondary market and thus, you broaden the universe of investors in the primary market. There's lots of interesting things happening. So, I would be hesitant to say there's one big next thing. There's just so much happening in the space.

>> INTERVIEWER: And you mentioned that in other countries that's not the norm with you on the ACH. Not clearing out on a weekend. What other technological advances are happening elsewhere in the world, that you think will scale- scale to the U.S?

>> ADRIENNE HARRIS: Yeah, I think the other big thing is identity. Alright, for the longest time, especially in the US, we've thought of identity as this plastic card usually a driver's license or some non-driver ID. And I would say it's like the thing that teenagers have been faking since the dawn of time. So why is this the hallmark of your identity is the thing that's so easily counterfeited. And by kids, I... It's not hard to do. Where is the rest of the world. I mean now we’re all with our phones, we've got the face idea or thumb print but it took us so long to get there. And still with a bank. If you wanna open a bank account, you're going in with your idea or at the very least, you're entering your social security number, all of those things, when you don't need to do any of that stuff, your thumb, your face, your voice your geo-location data, all of that can be used to identify you. And I think certainly the developing world is far ahead of us on that.

I think the US will catch up. And I think part of what you're gonna see here is distributed ledger technology is usually what people call blockchain, but as I'm sure you guys know a Blockchain is one protocol of a distributed ledger technology, universe. Even the way we think about what pieces of information we need to do certain things in life. So we always use the example of... And here, people use the example of like, if you go to buy alcohol before you're 21, you go to the Bodega and the court will say, "Give me your ID again. This thing that's been faked since the beginning of the the beginning of time by like 14-year-olds by giving the clerk your driver's license, you are providing him or her with way more information than they need to know whether or not they can sell you alcohol, right? You've given them your height, your weight, your eye color your hair color, your address, right? Like all of this stuff that is totally irrelevant to the decision at hand, and even your age is irrelevant to the decision. All the courts used to know is are you over 21 or over aren't you?

Right? So as we think about a distributed ledger and think about the universe of decisions you make, especially online, paying for stuff, looking things up and now, all that information is out there in the ether.

We think about an internet 20 where you could insert only the information that's relevant to the decision to the transaction to whatever activity or undertaking you can insert that into the protocol and then withdraw it, when you no longer need it. So your information is not living out there in the world, you're only providing the information that is needed or It's token IED payments, it's Apple Pay or Google Pay so for those, when you swipe a credit card, there's all kinds of information about the transaction that's traveling from bank to bank and through the payment system or even when you dip a credit card right if you're using to Anise payments, all that's generated on each side is an ID number to identify the transaction, so it's actually much less information that's traveling through the pipes, so it's much, much safer.

The same thing could be duplicated across so many things that you do in your online life, but if not, the way the internet works, because it was designed for sharing not for privacy right now fast forward to 2019. we know that is sort of a big deal, but the protocol isn't suited for that.

So I think all of that is a very long-winded way of saying like, identity and privacy, especially in our financial lives, is a thing that a lot of developing nations have done much better because they didn't have the legacy infrastructure.

And I think the US will start to learn more from those places.

>> INTERVIEWER: Sure, I feel like another shadow side of those legacies is a reluctance to change and iterate. What kind of push back have you seen from institutions that are so embedded in the current way of doing things?

>> ADRIENNE HARRIS: Yeah, I mean there is pushback in resistance. I don't think because people don't recognize the value of innovations or because they don't want it, it's just... And you guys know this from any number of school classes. There are switching costs if you have a SaaS system, throughout your entire organization, and you're JP Morgan, the cost to change that over to something new is enormous, and time consuming, right, and you're not just JP Morgan, but JP Morgans, connected to every other bank, right? So how do you change that over? It's gonna be a slow process, and it's gonna interrupt business, it's gonna have an impact on business continuity so it's just change management, which is hard to do. And the same is true for regulators, they have a way of observing markets, they have a way of doing business. It's not that they don't recognize the value in doing it differently in these technological innovations, but switching changing is hard to do.

>> INTERVIEWER: Yeah, knowing all of the ramifications or such a switch wooded reply.

>> ADRIENNE HARRIS: Everyone has been involved in something where you're at work and they're switching some system, and inevitably, that's the exact moment when you need the system and it's offline, 'cause it's being updated or changed and you're like... magnify that across the global financial system. It's not pretty alright. So it's hard to do.

>> INTERVIEWER: Yeah, well, I have one last question that will open it up to the room, I'm sure in your life and technology in Silicon Valley, you've seen dozens of pitches, a lot of us participate in pitches here in school, whether those are presentations are actually more formal pitch competitions. What kind of advice do you have for us about what separates a good pitcher, in a bad pitch?

>> ADRIENNE HARRIS: Yeah, I actually just got to judge a pitch competition a few weeks ago. Judging things is one of my favorite activities. So I would say two things: One, you have to do the work to anticipate every question that your audience is gonna have, whether that audience is investors, or regulators or professors or whatever, it is, so you really have to work hard to put yourself in the shoes of the audience and say, "Well if I make this statement, what are the natural follow-up questions gonna be and how do I answer? So you really have to anticipate questions which you don't ever wanna do is go into a pitch or any sort of professional presentation and have somebody ask you a perfectly obvious question and not know the answer right it's not or have to be so right, through an answer.

So that's one thing sort of anticipate the the questions the other thing I always tell people two other things. So now I'm gonna expand my answer. The other thing is run water through the pipes, which is to say as you're describing your innovation, your company, I find pitches are best when they are very linear. The person logs into the app and then they'll push this button, and then people wanna understand exactly how it's gonna work. You can't be like, Well you open the app, and now you can do this thing. People are gonna be like... But how... How does it work? Is it process is it code? So be prepared to really walk people. That's why they run water through the pipes. How is this going to travel, how many clicks, how is this thing gonna work? So I think that's another important piece. And then the third thing I can tell a story, any technological innovation has a user, it may not be a customer like a retail customer may be a B2B innovation, but there's a user.

How put your investor your regulator your professor, pick them on a journey of the user and how they're gonna experience this versus how they experience the ASQ, and Kelso. It's one thing... And this is, it's obviously not a partisan conversation, but I think most people would agree, it's one of the things President Obama did very well, right. When he was pitching a policy, he wasn't like Section 302 of the thing will be changed to read it. He was imagined Susie without health care and right he would tell you a story. And just because this is business and not policy, the same rules apply. Tell a story about your user and it'll be much more compelling for your audience, to understand why this is impactful and important.

>> INTERVIEWER: That's helpful, thank you, wonderful. I'd love to invite anyone with a question to raise their hand, and we'll work through all of them.

>> STUDENT: First off, thank you for coming to talk to us. I really appreciate it. So I'm in the business school and I spent the summer working on a start-up in tech space using distributed ledger technology to accelerate post-trade settlement security, digitizing assets.. and they received a lot of push. But exactly, we talk about the case SSIS and moving everything over to you on product you is a huge lift. Yeah, because of the connotation in the technology as a "Tatar still are in the case. I was and also just to be an O, which times when I was gonna want it was... What do you think it's going into? I first like a J Morgan, a fan run, or people like that. Yeah, to accept a technology like this. Ballpark, why do you think something like that? What actually? Yeah, so I have to repeat the questions so can we hear... So in a nutshell, when do I think incumbent institutions will adopt new technologies, like distributed ledger. What will it take to get them over the hump and how long will it take? If I knew the precise answer is, I'd probably have a lot more money than I do now, but... So I would say there's a couple of things that it takes to get financial institutions in particular, over the Homer.

The first is a compelling business case, is the revenue gonna outweigh the cost, and by what magnitude it can't be a 2% margin, it's gonna have to be much more return on the investment, but being... The other thing is, will the regulators... Except it right? I think there's a lot of things that financial firms acknowledge would be better business acknowledged. The return on the investment would be great. They're willing to undertake the switching cost, but if you think the regulators aren't quite there yet, it may not be worth right.Butting heads with them over it. So I think that's a big part of it. So all of this will especially because financial services, so heavily regulated, I can't really say precisely what the timing will be.

I think things are accelerating because regulators are becoming more comfortable with IT firms even like JP Morgan is a great example, right? This Erwin, the tape 'cause I'm old. So in the tape a couple of years and Jamie was like... Crypto currencies are not a thing, right? Like blockchain is not a thing. And now you've got jpmorgan coin, right?

Okay, so people always sort of come along when it becomes sufficiently compelling to do so. I would say there are these agreed upon pain points that will be the first thing to also identity anti-AML KYC, I think regulators agree that its sub-optimal private institutions degree at sub-optimal that will be one of the first areas for change, the settlement piece.

There's still a little bit of debate about whether real-time and i... Utility is good or not so that might take more time 'cause there isn't this consensus about it, needs to be changed. So those kind of things I think take a little bit... A little bit longer, but you see again, the pace of the change accelerates. tremendously. We went from Bitcoin being sort of a fringe thing to to crypto currencies being like mainstream is a stretch, right? But former widespread and popular to now sandal banks talking about digital fiat currency, in the right, it seems like it's been a long time, but in the history of currency, it's been a very... Or period of time that we've gone from Bitcoin to the plethora of digital currencies to now digital focuses.

So I think if you'll just see the pace continued to pick up a life of county actual currency, effect the creating market or exchange-type actions, arbitrage several how does it... So one more time, to show decency affect the market. I think right now it's still such a small part. If you think about global crypto is still a super small part of that, but if you think about distributed ledger technology, and romances and making cross-border payments, and especially cross-border "B2B payments faster, the underlying technology I think is gonna be very impactful for markets.

I think the bigger question that we don't yet know the answer to is less like the Bitcoin in the Ethereum and more like the Le bras and the Amazon on whatever that thing ends up being and when mainstream are doing the majority of their transactions in a... Or a Libra-like thing, what does that mean for monetary policy right interstates what does that mean for the dollar as the global reserve currency, right? All of these questions are... There's really no way to know historically as a world, we have some experience with currency and public currency. If you think about it, it's like the 1600. there was private, currency in public currency and that experiment did not go very well, which is why now we only have or until recently, we only had public currency. The currency.

Now we're re-introducing private currency. But in a totally different form, it's like what does that mean?

And when I was in Singapore recently there were people talking about digital currency on a panel.

One guy was from JP Morgan and one guy was from Caliban and they were like... Well, if all the central banks in the world go to digital FE out currency right digital dollar digital Rona digital pace. Do you need Libra or do you need GPM coin, right?

And the "Calabro guy was like... We're still doing labor it doesn't matter. And the JP Morgan guy was like... Yeah, we don't need to e-Morgan coin if everybody else goes to digital features.

You know, there's no way to know it, what happens? And you think about China moving to a digital to currency much faster than the US. Obviously, these are two economic powers. Like what does that mean for the reserve currency? What does that mean for trades like these are all just open and fascinating questions.

If you're like a financial services nerves, like May, which segments tenacity, say real advisors, or Maybe aggregators of financial formation of those who see a really becoming big and future action that you see paying way maybe in comments take over as a tithe. Aggregating world is particularly interesting, but not the way it exists today. PLA and Nelly, those guys are interesting. Most interesting. Or as you think about the capabilities and I think about... So first, let's separate consumer and institutional on the consumer level. Imagine a world where you can, there's so much financial and other information about you that your phone can help you make financial decisions, right?

So I decide I wanna have a kid who's gonna go to college in 18 years, and I wanna buy a house, and I need to get out of debt and whatever my set of financial circumstances are, and that's all been input into the phone and then I walk into an anthropology that's where I end up spending most of my money and my phone is like being put the hand back down Book. You're supposed to be saving for your 529. so instead of spending this 200 bucks on the handbag wouldn't you like to put this in the 529? Yes, I would, right.

Or you've stopped getting a pay check from the University of Michigan, right?

Did you leave this job? Yes, I did. You have a retirement account there? Yes, I did. Would you like to roll it over? Yes, I would, right.

So the device, whatever it is, is now helping me make financial decisions in a way that was the fiction before or that just fluid me or was cumbersome to do. Everybody knows the roll-over here, 4-1. but most people don't. 'cause we're like... I gotta find the form online, I gotta send it in and it takes two weeks, and then they send me the check, and it... It's a mess.

The same is true for the institutional side. So the part that's most interesting to me is like, how all this data, how big data is gonna work in terms of helping us make financial decisions, both for ourselves as individuals and for institutions and how all that will become automated or augmented that I'm very personally, very interesting. And then Internet 2-0. as I said, we were talking about distributed ledger technologies, I think. Right, right, right now, it's HD peak. That's the protocol at some point is gonna have to change. People are gonna decide that privacy or the ability to decide what information is out there and used in what ways, and not it's gonna shift.

So, to that we're gonna need a different way to share information, and I think distributed ledger technologies is gonna hold the key to how we do that.

See you have just mentioned silicone Silas. And there's a lot of joint main companies and no staff here. We can also see that actually a reason, yes, at of stuff. These companies just sharecroppers, or at an getting an standalone hinders a lot of the trauma to the society there. What do you think are instead Cosette city and how we can that... So I come to that as...

Yeah, so the question is, even though a lot of developing countries are leap frog in the US and vary for Laing with financial invasion, a lot of those companies still fail. So what are the leading causes of some of that failure is that fair? I have to restate so I try to... Okay, so remember that the majority of startups fail, no matter where you are, if you're in San Francisco or if you're in mobile it doesn't matter, the majority start-up sale. There's lots of reasons for that, but as you talk about different jurisdictions like some of it is regulatory. I was with a very well-known sort of crypto entrepreneur who started his business in China is a Chinese citizen renounced the citizenship moved the company to Singapore is a Singapore citizen. Now both the company up there, and his reasoning was like the regulatory environment in China was unpredictable, right? One day the government is like crypto no good right the next day, they're like, "We're gonna do a digital fiat currency. So for him the lack of predictability was made it hard to run a business.

So I think you can be the regulatory environment, I think it can be capital constraints. So, despite how hard the regulatory environment is in the US with all the many, many financial regulators that we have, we're still a country that is very risk-seeking. We'll throw millions of dollars at an idea on a PowerPoint and see what happens. That's not an ethos, philosophy, that exists everywhere in the world. There's an ecosystem in the US and in other places, that doesn't exist everywhere. So I think some of its regulatory some of it's capital, some of it's ecosystem in philosophy, there's lots of reasons and some of it's political, but again, I would say the majority of startups fail, we all focus on the success is... But for every success, you see there's 20 companies that folded, and so I don't think that's unique to any one market.

So, personal ancestor speak. Use five questions or so we're all... But to graduate a few years at the university, Avalara, the conversation or watching.

But as we go out and are established firms sometimes executives aren't in a lot. A wine talk about these things. It can be a palace at an AAA.

So the question is from transitioning from an academic environment where all that discussion and collaboration is welcome to an institution that maybe it's less welcome, it's harder to drive consensus. How can you drive some of that change part of it, in any environment in adult life, whether it's government or a large financial institution, is figuring out the incentives for each of your stakeholder groups and how much overlap can you identify or create if it doesn't already exist, to accomplish your objective, which requires a lot of thoughtfulness and a lot of work and generally, a lot of times... So one of the things you hear that government people talk about is the meeting before the meeting so any time you have a big meeting cabinet secretaries staff, you never wanna go into the meeting. And this is like an example, I'm not talking about meetings per se. So, extrapolate for that you never wanna go into a meeting not knowing what the outcome is gonna be.

So what does that mean? It means you're cultivating each of the meeting participants each of the decision makers long before the meeting ever takes place, right, so you know what their concerns are, you know what their position is gonna be on whatever you're trying to do, and you shouldn't be pushing for a decision before you know you can get a favorable outcome now it's not always possible, but a lot of it is just cultivation. Maybe some horse trading, what water Emma's interest it. I really wanna get this blockchain project, on. I know AMA doesn't care about it, but what does Macao, how can I trade or how can I make this beneficial to m such that she comes on board, or at the very least remains neutral, right? So she's just not working against me, 'cause she seems like a format, a bowl on it.

So it really is being thoughtful about the stakeholders and what their incentives are.

Sometimes it's economics, sometimes it's often, it's ego, right?

But how do you bring people along is actually one of the things I think government is very good for teaching you because the in business, you often have two counter-parties, right?

Maybe there's more but if you're doing a deal, there's two counterparties or there's a shareholder, but it's a little bit simpler, even though the problems can still be very complex in government, right? You've got congressmen and senators, and cabinet secretaries and constituents and regulators and press it. So, your ability to sort of think about all of the stakeholders and strategize around it just grows exponentially. So this is my plug for public service to the B-school students.

The poverty is momentary. And then you can go and make money after that, but I think that's how you drive change. It's really being a thoughtful person to think about the incentives of the decision makers and spend the time beforehand, thinking about how to create as much overlap as possible. Or at the very least, had a neutralized, potential opponents.

It's very like House of Cards. I didn't mean it in a sound that way, but... And I picture this... So I think a lot of times the technology has on intended consequence. Yeah, and so something that comes to mind this election interference and specifically in financial markets, is fast money funds to creativity, but a smoothing comes in to play.

So what to you are things that are potentially Odette consequences that come to play and how to manage them? Yeah, so the question is technology has lots of unintended consequences and how do you... What are some that I see coming down the pike and how might one think about or prevent or mitigate these things?

Very statement, okay. He's like most in... So there are some unintended consequences that are just on foreseeable right? It's hard to imagine how a collection of actors, especially when you're talking about global financial system will react and in the sequence to produce whatever consequence.

And I, some foreseeable probably wasn't and I don't mean this in a critical way, but probably wasn't outside the realm of possibility to think about social media 10 years ago, five years ago, and maybe not be of course Russian interference in elections, but to think about how it might drive confirmation bias. I think there's gotta be responsibility on all people. There's gotta be responsibility on entrepreneurs and executives to be thinking about this, it can't all be about the bottom line because the stakes are too high. They are elections and democracy. And I don't think I'm overstating it, right? So businesses have to be responsible, similarly like policy makers you don't want policy makers and regulators front running innovation 'cause then you won't get any... Well, they do need to be sort of close enough in time that they're understanding it and then not just having knee-jerk reactions of, This is bad.

Don't do it right, 'cause it doesn't work. The markets are gonna continue to drive innovation, so you need policy makers and regulators that they're gonna keep as closes, they can and understand it and really think about working with companies and companies with regulators to advance things responsibly. It sounds Pollyanna right? I realize that, but I... It's not impossible and I think most people wanna do that, but it's just hard in the execution, but I do think we sort of don't expect enough of our business leaders, and I am not one.

And you gotta think about how I say this, I'm not one that would say businesses aren't supposed to make money. The point of business is to make money to run a profitable institution, but I don't think that stands adverse to thinking about unattended consequences to thinking about your employers and workers to thinking about the social ramifications of what you do, right? It is possible to do both and you don't have to be a Tom's right, or a social impact sort of business, a social enterprise to do that. You can actually do both you can be... And I think of lots of companies try to do this. You can be a big bank making a profit and serve your customers in a way that is not predatory and adverse to their own financial interests. It is actually possible, you just need a system where the muscle memory is, is such a regulators and policy makers in businesses and consumer advocates are not just butting heads for the sake of controversy.

And I see now I...

I think there's lots of things about our society now that are about controversy and about being adverse to one another, but I think there's a way to bring that all together and make sure, businesses are being responsible and have them be profitable and people make the money that they deserve to make for having good ideas, and that being... Okay, so that in to your question, he's like, I sort of... Okay, yeah that was just on a... Has mentioned some post-surges letters and people we follow a tie. Yeah, sure, you can name all the... Yeah, for one of my favorites, let's see, so, Erin Cline at the Brookings Institution is very smart on everything from real-time payments, to marijuana legalization and everything in between. And very funny, and witty. Who else is doing these or emotive partners, which is like a VC firm out of London, they do a weekly thing weekly, newsletter that I think is very good endorsing newsletter. Brett King, who I think would describe himself as a futurist, and he was in very early FinTech entrepreneur his podcast motive has a podcast as well, breaths podcast and books, I find very thought-provoking and interesting in a...

I read morning money every day. Political does like all these lines, they do political California, New York, morning money morning tech. You can morning everything, but morning money. Certainly for markets, trade financial regulation, I find it's a good one and I keep a list generally for my class as long, so I'm happy to probably needs to be updated, but then make that available.

He gets... Yeah, that Harris from Bain Ventures is another one.

He tweets about his kids a lot too, which is also very entertaining. It's like financial regulation and his kids, but he just started an interesting series in Forbes, I think, about where FinTech is going Lawrence Windermere, similarly, rights for Forbes. His stuff is very interesting. I've been say or, again, Jennifer, tester from the Financial Health Network. She doesn't write so much on FinTech as financial health there. Her Forbes column, are very good at anti... Yeah, one more yeah.

>> STUDENT: [inaudible question]

>> ADRIENNE HARRIS: Yeah, so the question is where will the next wave of FinTech innovation come from - inside incumbent institutions that are now developing these innovation centers? Or outside?

I see it, I mean I could be right either, I tend to think it's easier to do it from the outside 'cause you're not battling a bureaucracy, right?

And I also tend to be skeptical of innovation units. Not that they don't produce interesting things, right? Not that they can't impact the culture of a large firm.

And the same is true for regulators. I tend to think that if you're establishing an innovation unit, so it means you're not thinking about innovation, broadly right? And so those people will always be battling for resources and position and... And people will be like, "Well how did it... They're still gonna have to sell their innovations to the business head. Who then thinking about change management. So I tend to be skeptical of the idea that a specific innovation unit can drive change. There's lots of exceptions to that. Capital One's innovation unit, which I don't even know that they really call the debt, but they've had one forever and it's driven a lot of change in the company and in the industry. So that's, I think, probably an interesting counter example, but whatever you call it or whether it's a special division or not, you have to have buy-in from the top, from the business leaders, but I do think it's probably easier to drive those things from the outset, 'cause you don't have... There isn't the political consideration there isn't the bureaucracy there isn't, right? You have different challenges, getting funding, getting revenue acquiring customers, all of that stuff, which is really hard, but I think it tends to be easier to think differently and drive that when you're less encumbered it.

The big animal.

Wonderful. Well, I think we'll wrap up here.

Thank you, Adrienne.

Thank you so much.