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REGULATING CRYPTOCURRENCIES AND FUTURE TECHNOLOGIES: A CONVERSATION WITH MANUEL P. ALVAREZ

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P R O C E E D I N G S

MS. MAHANTA: Welcome, everybody. Thank you for joining me today as I am in conversation with Manny Alvarez. Manny, thanks for joining. I'm really excited to talk about cryptocurrency, regulation, and all of the interesting things to come.

Manny is currently the founding principal of BridgeCounsel Strategies. He previously served as the commissioner for the California Department of Business Oversight, California's banking and financial regulatory agency. He led the transition of the department to the Department of Financial Protection and Innovation focusing on protecting consumers from harmful practices, increasing access to financial literacy and technology, and engaging with underserved communities. Before that, Manny served as general counsel and chief compliance officer of a firm, a fintech company leading the legal and regulatory efforts there.

My name is Loni Mahanta. I am a nonresident fellow here at Brookings in the Center on Regulations and Markets, part of the series around reimagining modern day markets and regulations. So, you know, appropriate topic for us here. I'm also the vice president of public policy and government relations at Zillow. And full disclosure, Manny and I were law school classmates what feels like many, many moons ago. So, Manny, thank you for joining me.

MR. ALVAREZ: Thanks so much, Loni, for inviting me and it's a real pleasure to be here with you.

MS. MAHANTA: All right. Well, let's jump in. So, we'll start with some basic questions here. You know, I don't, you know, there's a lot of different folks that are joining today, different levels of background understanding around what cryptocurrency is in the first instance. So, why don't we kind of just start there. Can you explain for the laymen, what cryptocurrency is?

MR. ALVAREZ: Certainly, give it my best college try. So, cryptocurrency is a currency, a thing of value that is represented by a digital asset. And that digital asset resides on a decentralized network called the blockchain. And depending on the protocol, the particular cryptocurrency will be verified either by some third party or a series of third parties or some other state. That is probably the best I can do in terms of providing a lay person's definition of cryptocurrency.

But the reality, I think, is that especially as new protocols continue to emerge, the reality is that that definition, I think, will continue to slip and morph. And I think that actually lends itself to -- or it -- that's kind of the crux of a lot of the difficulties that we see and that we're going to be talking about in terms of how will you regulate this thing?

MS. MAHANTA: Yeah. Yeah, of course. Where these things go and how we regulate this on what exists today in addition to sort of what's coming down the road, I think is going to be an interesting question as these issues progress.

A couple more baseline questions for you. You mentioned blockchain. What is blockchain? You know, how do we think about what a blockchain is? Is that the same thing as a distributed ledger technology? How does that interact with cryptocurrency? How should we think about that?

MR. ALVAREZ: So, again, major caveats. I am not, myself, a technologist. So, if people want to --

MS. MAHANTA: Fair.

MR. ALVAREZ: -- tell me that I am a moron, I welcome the feedback. But I do think of blockchain as a decentralized ledger, as a decentralized database that lives everywhere. And the way I think about how blockchain, a blockchain interacts with the cryptocurrency, that asset resides on the blockchain itself. I'm glad you've pulled apart the two concepts because one of the -- I think one of the areas that is worth exploring is what other applications --

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: -- might blockchain technology have that are independent from cryptocurrency?

MS. MAHANTA: Yeah, I'm glad you mentioned that. And I'll actually just make a little note here. Some of the people that have joined us today presubmitted a few questions. And so, I'll be interspersing those throughout. And one of the questions that came up, and we can try to get to it a little bit later, but one of the questions that came up was about different applications and use of blockchain technology that might be distinct from, you know, cryptocurrency itself.

So, one more, this is sort of just nomenclature and I'm speaking as sort of a person that's just, you know, just been reading and trying to learn and understand. A couple other terms that I hear thrown out, crypto wallets, crypto exchanges. What are those? And how much do I need to understand what that is, what those, you know, products or terms are in trying to understand cryptocurrency?

MR. ALVAREZ: Yeah, I think so, shockingly, I think both of terms are probably I think it's okay to be seduced by the self-explanatory inclination of those two terms. Crypto wallet is simply the means by which you hold cryptocurrency. It could be a hot wallet, meaning it's plugged into -- it's plugged into a network. It is actively plugged into one of the chains.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: Or cold storage. You're taking that currency off of a network and storing it on a device, a thumb drive or some other device that's not plugged into a network. And then an exchange is, you know, I think of it as simply a type of -- a type of market where digital assets can be exchanged, bought, sold for either fiat currency or other forms of cryptocurrencies.

MS. MAHANTA: Okay. So, for the perhaps crypto evangelists out there, what are the biggest opportunities with crypto? What does it offer? Why are we, you know, why is it so much a part of our conversation these days?

MR. ALVAREZ: Why do we care?

MS. MAHANTA: Yeah.

MR. ALVAREZ: You know, I think that answer will depend on who you're asking. And so, let me offer up a survey of perspectives that I have kind of coalesced over time. So, these are not necessary perspectives that I share, but I think it's fair to say that this is kind of a survey of opinions out there. So, in the earliest days, it seemed that a lot of what -- a lot of what the hardcore crypto evangelists were embracing involved the anonymous nature of cryptocurrency and the decentralized nature of cryptocurrency. Actually, I should have used air quotes in both cases because as time has progressed, as things have evolved, neither one of those two states is really all that true across the board.

It really is not the case that you have a purely -- that you have a purely anonymous technology represented by cryptocurrency. It really is not the case or it is the notion of a fully decentralized ledger I think is increasingly challenged as, you know, as kind of the locus of computing power and technology continues to be concentrated in various pockets. So, those, I think, were two at least early impulses, early perspectives that the hardcore evangelists shared.

Relatedly, I think, again, some of the early acolytes believed that this represented -- this was a good move away from centralized monetary institutions. I can't trust, you know. I do not trust X, Y, and Z government. I do not -- and by extension, I do not, trust that government's fiat currency. I do trust, however, this newfangled currency. So, I think those were kind of some of the early perspectives, you know, the libertarian perspective that I'm going to call.

And then, you know, there are other perspectives that are perhaps more practical, less radical, I think. One practical use case that I think is incredibly fair, actually, has to do with the ability to move a thing of value, the ability to move money while reducing network costs, right? Today to move money from institution to institution there are all of these intermediaries that take slices of money along the way. And cryptocurrency at least there is the potential to disintermediate that value chain and pass those savings on to consumers.

And I think the technology has yet to fully realize that promise. But that, at least to my mind, seems like an important practical application. Particularly as we're talking about cross-border transactions, right? Where sending money to, you know, sending money to a relative in Mexico today is as perhaps costlier than it could be. And then we get into a host of other applications, I think, that are still being plumbed. They're still being kind of discovered. So, one is, there's the notion of, you know, using cryptocurrency to unlock the value of a host of different things, right? Of a product or of a person or of a brand, I think that notion, right, of kind of a proprietary token that represents value in a person, place, or idea, I think that probably will continue to take place.

And then getting away from the notion of kind of the monetization. There are other practical applications that at least some people have been excited about and I don't think we've really seen these fully come to fruition. But there's the smart contract application, right? So, the idea that you can have things other than just digital -- or cryptocurrencies riding on blockchains. You can have smart contracts, right?

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: So, there are least a handful of examples of products where you can kind of store a contract on top of the -- on the top of the blockchain. And there is actually some value there because you have -- then you have a transaction that is fully digitally native in the mortgage space, for example.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: It may be easier to, you know, to secure ties kind of a mortgage that is represented -- that is represented on a blockchain. And then finally, the kind of the last idea, the last perspective that I'll share. At least some people are excited by applications. And for example, corporate governance, right? So, how do we -- so, for proxy voting and things like that, right, does blockchain present an opportunity, an elegant solution to that kind of need to communicate across the board with a lot of different stakeholders, shareholders, things of that nature.

MS. MAHANTA: That's great. It's really helpful to kind of think about the broad applications and I think implicitly you answered one of the questions that an audience member submitted, which was: been paying attention for the last few years and can't find any reason for cryptocurrencies except to meet the needs of ransomware criminals, the whims of banana republic presidents, the impulses of people who would be better off betting on horses. So, I think that there is, you know, I think there is a fair amount of skepticism or criticism from some places, but there is also a possibility, perhaps, of beneficial applications that we haven't even fully come to see to come to fruition just yet.

But some of the concerns I think are probably relevant in the questions around regulation. So, let's kind of move over to that area. There's a lot of talk about crypto being in a regulatory gray area. The IRS classifies crypto as property. The CFTC considers crypto a commodity. The SEC has said that digital assets may be securities, depending on the facts and the circumstances. So, you know, having sat in the role of California's, you know, top financial regulator, where do you see crypto fitting into, you know, the existing regulatory framework?

MR. ALVAREZ: I suspect that this question and rifts on this question will be, you know, dreaded and incredible law school exam questions for years to come. Because the answer is it depends, right?

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: How it's regulated. How well is it regulated.

MS. MAHANTA: The lawyers' favorite answer anyway, so.

MR. ALVAREZ: Exactly. In my view, it's a definitional problem as we've kind of -- as I think folks have surmised. When I hear, the way my ear is tuned when I hear people talk about the regulation of cryptocurrency, to me that's akin to saying something like the regulation of heat or, you know, the regulation of water. Well, in what form and in what application, right? So, I think the first step is we need to kind of drop one or two levels below and talk about the function that we're concerned about, right? As we focusing on the stored value function or nature of this technology? Are we focusing on the function that behaves like an investment vehicle, right?

Once we kind of address that taxonomy problem, then I think you could get into what regulations and what regulators apply here. So, for example, when I was -- when I was commissioner in California, we had at least a handful of licensees, of existing licensees, whether they were depository institutions like a bank or a credit union, or a non-depository institution like maybe a mortgage bank or a money transmitter. Any number of licensees would ask us, hey, can I do this thing in the cryptocurrency space within the bounds of my existing authority, within the bounds of my existing license, right?

So, some banks, for example, want to know, hey, can we use crypto technology to help reduce our use fees when interacting with other, you know, either transmitting money internally or externally? And, you know, in some cases, it was pretty clear to us at the department that, yeah, the technology is facilitating certain authorities that you already have as a result of your bank charter or your credit union license. So, sure. So, you know, I think, I do think that states -- let me just stick with states for a second. I do think that states have a role to play in the regulation of cryptocurrency. And that many states have been playing that role oftentimes without much fanfare or understanding by the public, right? Because it's part of the confidential relationship between state regulator and licensee. That has been happening and I suspect will continue to happen.

MS. MAHANTA: Well, let me bring a different lens or maybe a sort of a riff from what you're talking about here what the application is. So, when you were at the Department of Financial Protection and Innovation, you know, one of the, you know, themes I think you were focusing on was around consumer protection and protecting consumers. So, there's a part of what you just articulated that is around existing authority of a bank to sort of, you know, perhaps muddle around the edges. It matters for them from a compliance perspective, perhaps. Not super visible for a consumer. Is there a component of this that, you know, really was about consumer protection? And what are the types of things that a regulator might be thinking about protecting against in that, you know, that framework?

MR. ALVAREZ: Absolutely. There's a huge, in my view, there's a huge consumer protection component here. And going back to your earlier, you know, the question that you offered earlier in your comment, there are absolutely concerns that I think are well founded, right? So, there is the need to protect consumers to ensure that their, I mean, basics, right? That their funds are not stolen by somebody, by a nameless, faceless technology. And that's a really, really scary thing, right? I trust, I deposit my fiat currency or I convert my fiat currency into this thing that exists in decentralized fashion. Who is responsible for making sure that it's there at the end of the day, et cetera, et cetera, right?

And so, there is the -- there is the impulse and the need to ensure that a consumer's funds are safeguarded that they are there -- that they are there when they should be there. Then there is kind of the investor protection being "investor protection component" right? To the extent that we want to -- we want to make the one-to-one comparison or at least analogize to investable assets. There is, you know, at least an impulse to protect investors from the volatility of this asset class. And for the record, I should say I'm not someone who believes that volatility in and of itself is problematic, right? I mean, there are plenty of asset classes that are incredibly volatile. The trick is to make sure that the capital that is flowing into that kind of volatile asset class knows what it's getting into, right? So, we're talking about everything from disclosure-based regimes to everything else, to kind of product experience.

So, there's a, you know, look, there's a huge consumer protection concern here or at least there should be. And the good news is, look, I don't think -- I don't believe any of those concerns. I don't think it's rocket science, right? The problem getting back to kind of where we started with this question, part of the problem has been there are plenty of -- there are plenty of regulators with a lot of different tools that they can bring to bear to achieve similar or the same consumer protection, investor protection outcomes. The problem is how do you know who's in the game, right? How do you know who's responsibility? And I think that's been part of our -- that's been part of the issue that we're trying to figure out.

Well, who's responsibility is it, right? The states have been playing a role. Should they continue to play the exclusive role? Probably not. Who at the federal government should be mining the store? And is their exclusive jurisdiction? Why or why not? So, I think those are the questions, right? Who's in charge here that have made the regulation of this all pretty tricky?

MS. MAHANTA: I want to dig in more on that. But before we move to that, I've just, you know, philosophical question here. The volatility of the asset class is also where a potential, a lot of the upside might exist. There seems to be some tension around protecting consumer protection, protecting individuals who are perhaps not knowledgeable about like what they're getting into. But also, the -- or other side like the democratization and giving access to people who perhaps did not have access, were not meeting other standards of what a qualified investor is or, you know, the other -- the rules around who is allowed to kind of access those types of asset classes or investment opportunities. How do you, personal level, or former commissioner hat, whatever, how do you view that? And is that even a tension?

MR. ALVAREZ: I absolutely think that there's tension there. And my personal philosophy, you know, my personal philosophy here and probably just about any other financial technology we talk about, I think I like the impulse. I like the directional movement toward democratization of this kind of technology, of these kinds of products, of these kinds of tools, as long as it's accompanied by serious and intentional focus on the education component, right?

So, I think, you know, personally, I think it's problematic that here again, right, we have an area where there's a cottage industry of hedge funds springing up making handsome sums of money because they're able to bring to bear, you know, cutting edge technology taking advantage of small swings in crypto prices making a ton of money, right, as a sophisticated investor. And that's fine. They should continue to do that. But I would also hope that we could find a way to unlock that value for the retail investor, particularly those that have been historically shut out of, you know, these sorts of -- these sorts of products and services. Easy to say, hard to do. I mean, because I think plenty of people would -- might conclude well, this simply is not an appropriate asset class for many perhaps most retail investors.

I understand that instinct. I think there's merit to that perspective. It's just not necessarily one that I share, right? My view is, no, we can do better. We can actually make these products and services available to a lot of retail investors, but we have to commit ourselves to education and to teaching them what this is about.

I mean, look, and I have similar feelings about -- again, these are personal feelings. I have similar feelings about this in like the cannabis space, right? Where it was illegal for -- in California for so long and you locked up so many, you know, men of color for petty possession cases. And now all of a sudden there's a, you know, a cottage industry of cannabis companies that are getting rich because of the newly legalized status. That just doesn't sit well with me. And so that, you know, I can probably analogize those feelings across the board to a lot of different -- a lot of different areas and technologies.

MS. MAHANTA: Yeah. One more thought sort of just on this general regulation. When you were sitting in the role of commissioner, were you focused more around regulations specifically on cryptocurrency, or was there a focus also on blockchain and blockchain applications? Or was that more, was that an area that was like a slightly less regulated, at least in the early days?

MR. ALVAREZ: So, our entry point at the department was kind of two-fold. One, are we discharging -- are we as a regulator discharging our duty to protect consumers and investors and make sure that sensible safeguards exist, right? And so, I suppose that applies more in the -- in kind of the crypto -- applies more in the crypto lens, right? Less in the blockchain -- in the blockchain conversation per se. But then also, you know, at least when I was commissioner, I viewed our mandate as helping to promote and facilitate responsible innovation. You know, some of what I've been talking about.

I do not believe that the right answer should be to throw up your hands and say, well, it's too hard. It probably means that you shouldn't -- that the retail consumer investor should not have access to this. So, we spent a lot of time also proactively engaging with companies to better understand, you know, what are the -- what are the potentially valuable applications of the blockchain technology that you're talking about? And what are some of the ways that we can help? And if we don't have a role to play here, then, you know, we should probably tell you. But I definitely viewed my role, my prior role as at least in part, helping to promote and facilitate that kind of responsible innovation.

MS. MAHANTA: Well, that's a perfect segue into the -- I have questions that I have for you and your thoughts around the state government role in regulation and the federal government's role in regulation. And I mention that in part because we've seen the federal government under this administration take a much, seemingly much more interest in crypto. You know, a couple of recent examples, there was an, you know, an SEC letter regarding a lending product from Coinbase. Crypto was raised in the SEC chair's confirmation hearing. Some things that were really critical to the crypto space were tucked into the infrastructure bill.

So, a lot of stuff that's happening right now. One of the complaints that we've heard from some of the companies in the space are they've been trying to get more information outreach with the SEC and they're not having that engagement. So, a lot in there. But let's just start with, you know, what is the role? How do you view about what the role is of states and regulating cryptocurrency versus what is properly the domain or more appropriately the domain of the federal government regulatory involvement?

MR. ALVAREZ: You know, I think it's a tough question to answer. I think, again, I think states will -- states have long been playing a role in the crypto space and will likely continue playing a role in the crypto space. I would also, you know, I think I can also safely share that states -- states would like to see -- I think it is good for everyone when the federal government clearly articulates it's, you know, baseline expectations whether it's, you know, baseline expectations coming out of the SEC or CFTC or what have you. But I think, you know, I think even state regulators probably have historically shared in some of this frustration, I'll call, by reticence at all levels including the federal government. It's hard. It's just it's hard to coordinate this kind of patchwork of state-by-state regulation when the answer that you keep getting, right, from at least certain federal agencies, is either it depends or, you know, we'll get back to you. That's tough.

So, in a lot of ways, look, in a lot of ways, I think it's good that the federal government is leaning into this with renewed vigor. I think, you know, the best time to have gotten involved from a regulatory standpoint was always yesterday and the next best time to get involved is today. I think, you know, there is a concern. I think there is a general concern about gotcha style regulation, right? We never told you that this was our expectation, but now we're telling you this is our expectation and we're going to ding you.

MS. MAHANTA: Yeah, and you're in violation.

MR. ALVAREZ: Yeah, yeah. That's, I mean, that's a tough framework, right? That's a tough, tough framework to operate in.

MS. MAHANTA: Yeah, and like coming from a company perspective, a very, you know, I'll just I'll throw out the company perspective here. It is hard. It's hard to not having necessarily in the financial tech space, but generally a company that is trying to navigate the patchwork of state laws. You'll hear that term thrown out a lot, but it is. Like, you know, you're trying to build a business with rules and regulations that are not consistent. And it is much, a much more clear process when there is consistency across, which almost always requires federal engagement but also clear rules. You know, it is difficult from a trying to manage compliance when the rules are not clear. It's a little bit fact based. We'll see. We'll see how -- we'll see how case law turns out. We'll see how things turn out. A lot of organizations want to be following the rules but need to know what the rules are in order to do so.

MR. ALVAREZ: Yeah, I agree. And, I mean, this is a bit of a tangent, but I think, you know, when I first assumed responsibility as commissioner, a lot of people -- a lot of people asked well, what perspective is he going to bring? Is he going to bring the private industry fintech perspective? Or is he going to bring the consumer protection perspective from his enforcement days? And the answer is yes, right? Yes, to all of the above. I mean, you don't -- this is why -- and this is why when I, for example, would look to fill out the leadership team at the department, I loved that kind of diversity of perspective because I understand you don't bring a single, you know, a single lens to the role, right? You bring all the ones you got. And I think there is -- my personal feeling is there is this unfortunate skepticism that goes kind of both ways, right? Where some, you know, some regulators believe that all companies are simply trying to skirt regulation. And, you know, from first-hand experience, I just don't believe that to be true.

I think, you know, are there bad actors? Sure.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: Absolutely. And they are bad for everyone, right? They're also bad for other companies that are trying to do the right thing, right? And I can speak from first-hand experience that it can be frustrating for companies that are trying to do the right thing but they don't know what that is. Or they at least don't have clarity. And, you know, when they try to -- when they try their level best to kind of intuit what that might be, it can be tough, right, to be told after the fact well, no, that wasn't exactly true. That wasn't exactly the right thing. So, absolutely.

And yet you, you know, and yet we never lose -- or, you know, it's not like I lose sight of the need for consumer protection. You absolutely need sensible guardrails.

MS. MAHANTA: Yeah. Yeah, absolutely. And, you know, I don't think that -- you know, and there's also a perspective out there just around like, well, you know, people should be self-regulating and acting from, you know, just doing the right thing on their own.

You know, my personal perspective is like that -- while there are plenty of entities that are trying to do the right thing, that is certainly not sufficient for most of these things. You need to have an externally enforced regulatory infrastructure so that you are at least creating a even playing field for all the market entrants at least to the extent that you can.

MR. ALVAREZ: I mean, look, my seven-year-old does his homework because he knows that someone's going to check it, right? I mean, if you didn't have that threat, well, you know, why would he?

MS. MAHANTA: Okay. I guess another question though, crypto has not been around for all that long. Do you have any concerns around regulation being put in place today that will stifle a nascent industry? How do you think about regulating for the technology as it exists today, but versus where it might be in 20 years and how hard it is to change the rules down the road?

MR. ALVAREZ: Yeah, it's a great question. I mean, look, in my view, I think the answer has to involve -- it has to involve deeper collaboration, frankly, between industry and the regulator but real to a, you know, real collaboration that’s kind of that's a two-way street. I share some of these concerns about, you know, losing out on good practical applications of blockchain technology because of unintended consequences. I mean, for example, right, like I think I do think -- I do think there are probably really useful applications in the corporate governance space. And people are excited about it and yet, we're not really seeing it. I don't know why. But, you know, I would be -- I absolutely would be concerned about stifling a useful application of a technology because we tried to overcorrect, you know, over here.

So, you know, my view is the kind of two-way dialog that has been emerging over a couple of years. I mean, I don't mean to suggest that this doesn't exist at the state or federal level. It does. But I think it just it needs -- it ought to accelerate and we need to embrace that kind of -- that kind of framework. And I think it's important for everyone to get comfortable with the idea that we may not -- we may not always have all the answers at the outset, right?

This is another tangent, but there is a tangential relation here to what we're talking about. When I was commissioner, I was often asked about sand boxes. Are sand boxes good? Are sand boxes bad? My personal feeling now that I can share those personal feelings freely, is that the way that the term sand box has been politicized --

MS. MAHANTA: Yes.

MR. ALVAREZ: -- really --

MS. MAHANTA: Can you define the term sand boxes for our listeners?

MR. ALVAREZ: Well, that's the thing. That's part of the problem, right? The term was politicized without actually talking about what we meant by a sand box, right? So, some people over here would say, well, sand boxes are bad because I think their view of a sand box was, oh, this means suspending all rules and regulations and giving industry actors carte blanche to find their product market fit and do whatever.

But that doesn't have to be true, right? There are frameworks. There are other frameworks, right? There's the type of sand box that means -- that doesn't mean throwing your hands up and giving up. It actually means leaning in more and saying, hey, well, here are our baseline sets of expectations. Why don't we keep talking? Come back in six months. Come back in 12 months and we'll check our hypotheses, right?

The regulator in the UK, the FCA, the Federal Conduct Authority, they have, you know, they have an innovation function that -- and their notion of a sand box is exactly this. Their notion of a sand box is actually more like provisional licensing, right?

MS. MAHANTA: Yeah.

MR. ALVAREZ: So, --

MS. MAHANTA: Sounds like experimentation but in close conversation with the regulator and the regulated entity.

MR. ALVAREZ: Exactly. And I, you know, my view is that kind of framework can be really productive and really powerful. But my fear was that, you know, we may have -- we may have avoided that kind of dialog because it felt icky. Because it felt too much like a sand box. And, again, that's a --

MS. MAHANTA: I think you might have cut out on me. I'm not sure if that is my Wi-Fi or yours. The joys of working from home. Can you hear me, Manny?

MR. ALVAREZ: I can, yeah. I'm back.

MS. MAHANTA: Okay, there we go. We're back, all right. You mentioned earlier in our conversation, you know, institutional players getting more involved in the cryptocurrency space in the last couple years. What does that say to you? Is that an indication of what's happening and where things are going?

MR. ALVAREZ: Yeah, I think, I mean, I think it indicates that cryptocurrency, itself, is likely not going away. I mean, when you have -- when you have the fidelities of the world piling into Bitcoin and if you're in, as a hedge against inflation, I think that, you know, I think that tends to indicate a couple of things. One, it tends to indicate that not all cryptocurrencies are alike. And that's I'm stating the obviously, right? But not all cryptocurrencies behave in that kind of -- behave like gold, right? Not every cryptocurrency can anchor a portfolio and hedge against inflation the way that perhaps Bitcoin and Ethereum can. And once, you know, once you have that kind of institutional volume piling into it, I mean, you know, it's not going to disappear tomorrow. How could it?

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: So, you know, if anything, it, you know, it indicates to me the need to really think through, think about regulatory engagement. Again, in this kind of collaborative fashion. I mean, sure, you know, you can take -- you can take an aggressive approach and you could take -- you can start with enforcement actions, but that's not the only framework available to you.

MS. MAHANTA: Mm-hmm. You know, you also mentioned something earlier it's sort of tying this question about retail investors who have access, you know, institutional players versus the retail investors. There's another maybe analogous or similar lens that we could talk about here, which is sort of who are the winners and losers in the current cryptocurrency movement? And are we replicating some of the previous mistakes around accessibility and what groups of people have access and don't have access?

MR. ALVAREZ: So, I mean, that is that last -- that last point in your question, that's my concern, right? I would be concerned about a world in which, I'll just be blunt, in which people of color are left behind in a -- from an opportunity to help, you know, get involved, generate wealth, et cetera, et cetera. But I struggle with that as well. I mean, it's not -- it's not so clear cut in my mind because -- and this is where some of my own skepticism comes in. Because there are -- there have to be losers in a crypto exchange, I think. Because you don't always have -- it's unlike inequity, right, where you have -- where you have underlying performance. There's performance of a company underlying the thing.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: This is where my skepticism comes in, right? If you don't have that kind of underlying performance, how can you make -- how can one at the retail level, make decisions that are based on anything but momentum? And that's tough, right?

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: So, I might be able to take advantage of the volatility of swings in crypto prices because I understand at least a little bit momentum trading. But not everyone does. And that's hard for me to square, right? I don't know what the answer ought to be. I mean, on balance though, it does feel to me like we should not neglect the opportunity and the duty that we have to ensure that these kinds of -- these kinds of transformational technologies and products are available to everyone.

MS. MAHANTA: Yeah. And I think there's also, you know, there's also a possibility here where, again, we can pull apart some of the cryptocurrency and also applications of blockchain technology. And it could be that there's, you know, another facet of this conversation around use of blockchain technology in, you know, benefiting communities of color or helping to think about like where there might be opportunities on closing the racial wealth gap. And now, you know, now I'll be full disclosure. These are conversations that I've been having at Zillow in my role as head of public policy at Zillow.

I'm going to digress here for a second but bear with me. I had the opportunity this week and actually the final things are later this afternoon, but to be a judge in an HBCU hackathon related to Zillow. Historically Black colleges and university students did a hackathon. So, awesome. And several of the students, the groups were focused and thinking about cryptocurrency, but also blockchain technology in the housing market and where it might -- where it might, you know, have applicability there.

And so, you know, there were some interesting questions around how blockchain might be beneficially used in mortgages. Thinking about perhaps collateral. I mean, there's a lot of stuff that I, you know, frankly, I'm like I could understand the top line and the specifics are not super clear to me. So, I'm no expert here. But questions around use of blockchain technology in, you know, and perhaps modernizing or reducing fees if nothing else in the mortgage and lending space.

But also, though there was some conversation I'm starting to see around use of blockchain technology in different types of credit scoring. Talking a little bit about access to credit as, you know, the primary way in which people are eligible for mortgages. But, of course, there's all kinds of problems with our traditional credit system. You know, you have to bring on debts to even get a credit score in the first place. But that's not actually an indication of like if a new, you know, a new person in the market is a reliable and is likely to kind of make their payments on time.

So, thinking about different, entirely different ways of creating, you know, trustworthiness or credit trustworthiness, reputational, bringing in other things, seems like there's a lot there. Curious if that's something that you've come across or what your thoughts are around those opportunities.

MR. ALVAREZ: Yeah, I'm so glad you brought that up. A couple of thoughts. One, is and this is, you know, I feel like we could do this all over again while talking about consumer credit. Because I think there are certainly -- I think for some time, people have been thinking about and working on different ways of properly assessing credit worthiness such that, you know, such that you don't replicate some of the -- some of the, I'm just going to say it, some of biases that are inherent in traditional scoring models. And that's a tough, tough conversation with weighty views on a lot of different points.

But look, punchline is, absolutely. I'm so glad you brought up that anecdote because I think it rightly points to, again, this thing that we've been talking about the difference between cryptocurrency and the technology, the desire to ensure that sensible applications, really valuable applications that have yet to be developed are given the space to find that product market fit while protecting consumers from, you know, predation today.

The other thing that you just reminded me of, you know, so, in speaking over the last couple of weeks, I've had any number of conversations with various fintech founders, you know, a handful of them diverse people of color. And one thing, you know, many of them are committed to this notion of attacking the racial wealth gap and creating opportunities for everyone, including people of color, to participate in, you know, in every part of the economy.

I mean, it does seem pretty clear to that people are at least intrigued by cryptocurrency. And so, maybe, I mean, maybe that becomes the entry point, right? I mean, a lot of what -- a lot of what some of the founders I speak to observe, rightly so, I think, is, hey, the average retail investor age, you know, 22 to 33, they're probably getting further and further away from kind of the traditional online brokerage model, right? I don't know how many of those people, particularly people of color, are opening accounts with Fidelity or Merrill or JPM or what have you. But they are engaged in other ways, right? They're engaged in various forms of social media. They might be, you know, avid Reddit consumers.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: They might follow various content creators. So, there's kind of a broader fundamental point here that's, I think, getting away from the crypto conversation, per se. But the distribution channel, the way in which people consume information and make financial decisions has changed, will continue to change, right? It will continue to be here. I don't know how many people, you know, I don't know how many people of color will care about, you know, books that, I don't know, Suze Orman or Dave Ramsey have written. But there are plenty of other content creators that they follow. And so, you know, I think it's important to pay attention to that and to be open to the need to meet the retail consumer or the retail investor where they are today.

MS. MAHANTA: Mm-hmm.

MR. ALVAREZ: Which, you know, again, may not be a traditional brokerage. And it may not be in a traditional asset class. And if cryptocurrency is the hook that's required to get people interested in thinking about their financial health and thinking about, you know, their family's financial wellbeing, and if we can use that, you know, as an entry point to improve the rest of their financial lives, I don't think that's a bad thing.

MS. MAHANTA: Yeah. I mean, there's a lot of opportunity there. Got to be, right? I mean, for the financial wellbeing of many more Americans and especially communities that have been shut out for a long time. And huge shout-outs to the students for, you know, bringing this thread in and several of them, you know, saw it immediately and brought that up to the fore, so. Thank you to all those students.

Another aspect, and we we've only got a few more minutes here. But I do want to touch briefly on environmental impacts of crypto. It's a huge part of the conversation that's happening right here. And the environmental impacts of cryptocurrency mining. Quickly, do you think you could explain what cryptocurrency mining is? And then really curious about your perspective on the implications of this. You know, it's a massively energy-intensive process. And that has massive environmental impacts. And so, what are we going to do about it?

MR. ALVAREZ: Yeah, I don't -- so, I don't know. Crypto mining, I'm not --

so, I will not be able to do this justice. Here is how I explain it to myself. Depending on the crypto protocol, right? Like in the case of blockchain, for example, the way -- sorry, Bitcoin, for example. The way a Bitcoin is generated is essentially by solving a math problem. I mean, this is at least how frustrated technologists have tried to explain this to me, right, when they realized by severe limitations on technological understanding. What they tell me is, look, it's -- you're basically solving a really tough, a really elegant math problem. And it requires a lot of computing power and it makes it such that, you know, it seems fairly clear that you're upside down from jump in terms of the amount of energy required to generate that one digital asset at the outcome, right? At least a handful of people believe that to be the case, understand it to be that you're upside down in terms of the cost needed to generate that value.

Obviously, if that remains true for the long term, seems problematic as you point to a lot of reasons. Also, I think to the extent that more institutional, more larger financial institutions continue to get into crypto, there probably will be some need to better understand the environmental impacts because those financial institutions probably have some affirmative obligations, affirmative regulatory obligations in terms of articulating their commitments, you know, their ESG commitments. And so, what is the environmental impact of their involvement in this technology, in this asset class, in this thing, seems mighty hard to articulate those impacts when, you know, people are still trying to figure it out. So, it does seem like quite a problem.

MS. MAHANTA: It kind of gets to an interesting question about, you know, classic externalities borne previously by -- caused previously by an institution or an organization that you can at least point to. This is, you know, distributed, by definition, a distributed technology. These externalities still exist but where are they attributable? To whom are they attributable? And perhaps it will only be through involvement by institutional players that there's even an entree point into addressing these issues.

MR. ALVAREZ: Maybe. There is another point here that I think that perhaps tempers at least some of these concerns over the long haul and that is -- and this is not necessarily a novel thought. I've heard various forms of this expressed by other actual technologists. So, I think it's fair to say that something like Moore's Law still exits today. And so, Moore's Law, you know, the notion that computing power essentially doubles every 24 months or so.

So, whether that strictly speaking is true today or some version of that is true today, I have to believe -- I have to believe that the answer is yes, right? That computing power is, you know, increases at an accelerating rate. Which is all to say maybe we won't have these same concerns or maybe they will be tempered in 5- or 10-years' time. I don't know, right? But these are all valid questions and we would probably do well to understand where's that convergence point, right? Where is that point in which Moore's Law actually catches up with the energy costs associated with these endeavors?

MR. ALVAREZ: Well, I think that is a good stopping place for us. Manny, thank you so much for chatting with me today. It was great.

MR. ALVAREZ: My pleasure. Thanks so much.

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