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WEBINAR

BEYOND PROFIT: HOW BLOCKCHAIN TECHNOLOGY CAN BE USED FOR THE PUBLIC GOOD

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PANEL DISCUSSION:

MODERATOR: NICOL TURNER LEE
Senior Fellow and Director, Center for Technology Innovation, The Brookings Institution

EBONY THOMPSON
City Solicitor, Baltimore City Department of Law

CLEVE MESIDOR
Executive Director, Blockchain Foundation

CHRIS BRUMMER
Agnes Williams Sesquicentennial Professor of Financial Technology,
Georgetown University Law Center

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TURNER LEE: Well, hello everybody. I am Dr. Nicol Turner Lee. I'm a senior fellow in Governance Studies and the director of the Center for Technology Innovation at the Brookings Institution. We're so excited that you would take some time to join us today as we take on a subject that I know I have been personally interested in, particularly when we start to harness alternative finance mechanisms for the public good. Today we're talking about blockchain. I mean, blockchain, as some of you may or may not know, is a decentralized digital ledger that securely records and compiles an inventory's information in ways that can be used for a variety of reasons. But I have this opportunity to sort of dig into blockchain as it relates to the public sector, which was the catalyst for this conversation. You'll hear a little bit more about what's happening in the city of Baltimore. But I think it's worth us really shifting the conversation towards how do we use these technologies for the public good? Let's not be ignorant of the fact that there's a lot of discussion on things like cryptocurrency, et cetera. We're not necessarily gonna talk about that today. In fact, I would encourage you to follow the TechTank podcast where we're gonna actually talk about that in the next couple of weeks with our distinguished expert here from Brookings. But today, we really wanna dive into, particularly for those of you who joined us, you know, what is blockchain technology? How is it being used? What differentiates it from things like cryptocurrency? And most importantly, how are we seeing it harnessed for the public good? So I'm really excited today to be joined by three experts. Our first expert is Chris Brummer. He is someone I've been on panels with. He gets this stuff. He knows it in his sleep. He is the Agnes Williams, the Sesquicentennial Professor of Financial Technology at Georgetown Law Center. As well as holding various affiliations and Chris you can tell us more about what you are up to these days, I can't, I can’t keep track of you with LinkedIn. I'm just gonna tell you --

BRUMMER: I'm just trying to follow Cleve, that's all I'm trying to do, that is all I do.

TURNER LEE: And Cleve Messador, who he's referenced, she is the executive director of the Blockchain Foundation, probably the first person I've met in Washington DC that cared about how these technologies interact with people of color. And in this role, she really is trying to make sure that she raises awareness about the market opportunities as well as the public good. Cleve, thank you so much for joining. I know your schedule is always so tight. And Ebony Thompson, she is a city solicitor for the Baltimore City Department of Law. She's actually the catalyst for why we had this conversation. I sat on a panel with her. She started to talk about what they were doing in Baltimore with blockchain and housing. And for those of you that have joined us today, I think you're going to find it quite interesting. Thank you so much city solicitor for being with us today. So part of what I want to do is obviously sort of unpack for people how we define this. Cause I want us to be really clear what we're talking about today and what we are not talking about. So Cleve, why don't I jump over to you for just a moment to just give the audience a general understanding of what blockchain technology is and you know in your experience you know why having this conversation particularly as it relates to the public good is really important. Just before you do that Cleve, let me just make sure something I forgot, if you are following this conversation you want to ask a question please do so by submitting it to X using the hashtag public blockchain. Thank you so much. Cleve, it's on you.

MESIDOR: Oh my goodness. Well, thank you so much to Brookings and Dr. Turner Lee for hosting this, for convening this, and for bringing together such a powerhouse. Chris Brummer is amazing, and he's one of the people I've learned from over the years in crypto. And the work that Solicitus Thompson is doing in Baltimore is amazing. It really changed the game in terms of seeing some of these use cases in action versus conceptually. So I'm excited to dive into this conversation. But I like to give a very basic definition because everyday people and executives and experts and academics struggle with what is blockchain and cryptocurrency. And I would tell people, don't worry about understanding the definition, worry about how it's affecting your industry. I'll start with blockchain technology. Again, very simple. Don't go into the weeds. Blockchain is simply technology that does three things. It securely verifies information, facilitates the exchange of value with our third parties. I'll say that again. Blockchain is technology that one, securely verifying information. That's the ledger. Dr. Turner mentioned that before. Facilitates the change of value. That's cryptocurrencies that we all have heard of. Without third parties, that's decentralization. So

when you look at those three tenets, you see how big and abundant the technology can be in terms of how it can transform so many different industries. I will say, again, cryptocurrencies, we think of them as light, think of the most beautiful light, right? Even we're all on camera with different lighting. So the light that most people know about is bitcoin, right? So. There's also ethereum, there's stable coins that people are hearing about. But what powers light is electricity, just like what powers these cryptocurrencies and digital assets is blockchain technology. Now, very simply, think of everything we do with electricity other than light. Think of everything that we do of electricity that most of us don't even know about. That's the power of blockchain technology. It's so much more than cryptocurrencies, It's just like. Electricity is so much more than light. And then people have heard of Web3 and DeFi. Web3 is the next iteration of the web. We're in Web2 right now. Simple, right? One, some of us may remember when the internet first came about. Two, we are now in social media heaven and hell. Three is, how do we leverage technologies like blockchain, like AI, like machine learning, like AR and VR to go into this next iteration that works better for everyday people. Quickly decentralized finance is just that, right? The three tenets for me in terms of traditional finance is borrowing, lending, and trading. All of those things you need a broker or some type of intermediary. Well, decentralized finance says, why do we need all of these intermediaries to borrow, lend, and trade? Have you ever tried to sell a house or buy a house? The amount of intermediaries seems like 100. Decentralized finance proposes an alternative, an alternative that people are already leveraging and creating little side approaches to some of these processes. Very basic, nothing spooky. We're just iterating money. We are just digitizing money as we did with credit cards, with checks, with bonds and all of the good stuff.

TURNER LEE: You know, I appreciate that when you say very basic and not spooky, but I have to tell you, Cleve, I was on the Commodities Futures Trading Commission and I wrote the reports on the use of AI in decentralized finance. It was a little spooky to me. I'm just going to say what I wrote that report, probably because I didn't have a lot of background in that area, but there's so many interesting things that come out of it, which Solicitor Thompson, this is why I really wanted to talk a little bit about what you're doing with blockchain just the way that we've spoken about it, right? As the city of Baltimore, which we all traditionally knows has dealt with a plethora of housing vacancies, is a place where, you know, has been a product of several iterations of how we look at the history of housing in this country. You've actually took on blockchain to help solve a problem. And as a technologist over at the Brookings Institution, we're always trying to leverage ways in which technology can solve problems. So talk to us a little bit about how the city Baltimore actually took blockchain technology and is advancing what you think is going to be a remedy for some of the housing crises that you're experiencing within the city.

THOMPSON: Thank you so much, Dr. Turner Lee, and I just want to thank you all for having me here. Not only have I learned so much by serving on a panel with Dr. Turner Lee and Cleve is just like a fountain of knowledge, but I'm looking forward to learning so much from Chris Brummer here today and in the future. But I would love to talk about what we're doing in Baltimore. And just to give you a little bit of background, how it started, my first day with the city of Baltimore, we had to do a press conference. And I was deputy solicitor at the time. I wasn't in charge of the law department. I was second in charge. And I always asked by the city solicitor to fill in, um, and take legal questions. And I had just gotten there the first day and it was a press conference where our mayor was addressing three firefighters who lost their lives, battling a vacant property that collapsed on them and killed them. And at that press conference, the mayor asked for every agency, he didn't just put it on the Department of Housing and Community Development. He said, I want every agency to come back to me with a solution, all solutions that you have to tackle this vacant housing problem.

And I'm coming from private sector. I came from a firm Venable LLP and that's where I started my legal career. And I had just finished up a course and my final was on how to utilize blockchain technology for property deeds. And we knew that we had at that time about 16,000 vacant properties that were in the city of Baltimore. And what I was looking at was when we transfer a property. The majority of vacant properties are not owned by the city. A lot of people think that. The majority of them are owned by third parties. And the city has to acquire those properties first. And

to acquire these properties first, the first thing that we did was we created a separate track, an in-room docket with the circuit court system to allow us to pull them off of the traditional foreclosure circuit that takes about two to three years. And on this in-room docket, it takes about four to six months. So, with doing that though, we still have to take possession of the property and we're going to have to do a title search, all the things that you do when you take possession of a property. As you mentioned, Dr. Turner Lee, all of those steps when you try to sell a property, so we have to that. But of course, the city is not in the business of owning the properties. We want to get it rehabbed and get it back on the tax rolls. So of course we sell that property and usually an investor purchases that property and they do the same thing that we just did. Title search again and then they rehabbed the property about six months later and they put it back on the market to the end user or landlord that's going to rent the property and they're going to do it again and I thought that was highly inefficient especially if you're looking at 16,000 properties and we know that it's a sort of source of blight, it's the source of crime, and it's not just - we didn't consider it just a housing problem but a public health problem. And the mayor, of course, he was investing about $100 million in ARPA funds dedicated to vacant housing. So when I presented that to him, of course, I brought a host of challenges that you both brought up in speaking, where blockchain has been synonymous with cryptocurrency. And I'm a newcomer anywhere, and they're like, where is this new kid coming and trying to give us coins, right? And I said, no, I am trying to streamline. And I'm trying to make things more efficient. So after talking to several different agencies in trying to find someone that could build this for us, even though it was in my head to actually get it done, we finally found the DC land governance and happy to say not only are all our vacant properties on chain, but all about 228,000 of our properties now are on chain. So I'm very, very happy about that and looking to expand and we'll talk about that. I a little later.

TURNER LEE: I mean, I think that's such an ingenious way for you to think about, again, how to use the technology in support of streamlining government. So I mean kudos to you, particularly with that amount of properties that you have to deal with. And for people who are listening who have similar concerns, that was one of the reasons I was sort of enticed to do a conversation on this. Because as you said, a lot that's been in the public domain has been more for the maximization of individual profit. But for us at the Center for Technology Innovation, and particularly at the AI Equity Lab, which I launched last year. It's really starting to think about like, how do you actually create the space so that you could leverage technology to solve, you know, strategically, uh, issues that we face on a day to day basis and particularly leveraging AI. Now, Chris, we've been on panels together.

BRUMMER: We have!

TURNER LEE: And I love you.

BRUMMER: But you really don't need me here. I mean, I'm listening to this conversation and I am absolutely the least interesting and least helpful person. But I'm learning probably as much as everybody else.

TURNER LEE: Too late, you're already here, okay? Too late. What I love about the work that you do, I mean, you've heard Ebony talk a little bit about the streamlining of the process and sort of go into some of the detail on that. And you've from Cleve more of the definition of how this is distinctive when we look at the decentralized finance space. You do a lot of financial technology work through your particular workstreams, your center, the way that you sort of engage people even at the district level. I'm curious from you, I mean, when I've been on panels with you, it does elicit some conversation around data privacy and equity. And I would love to hear a little bit more from you on the financial technology landscape. You know, the extent to which these technologies, do they, how do I put it? Do they contribute to problems or are they helping us to solve problems?

BRUMMER: Well, number one, I wanted to say number one I have to get Cleve to teach, actually I want to get Cleve and Ebony over to teach my class, but that was a great definition that she had offered. Mine is usually much more simple and I just say it's a distributed database and people just

sort of look at me and then I proceed to sort of untangle that concept in terms of thinking through. Well, what's a centralized database? But usually when people understand that at its root, you're talking about a database with certain kinds of core features and characteristics, people are like, okay, okay. I'm starting to get a sense here. Okay, you can kind of organize information. And then you get to the other things about yes, and then you can actually use that as a structure to sort of build things on top of. And that's one of the really sort of interesting pieces to any kind of on-chain architecture, whether or not it be on chain finance or more sort of this property based ecosystem that, by the way, sounds really ingenious. And I was just over in Dubai recently and they've tried to really focus on the tokenization of real estate as one of their primary use cases and that's also driven by very local dynamics and I'll sort of highlight that in just a second.

You know, I think that technology goes through different iterations. I'm really old now, so I've seen technology in lots of different guises. And at every sort of little iteration, technology can be used for good and for ill, right? And sort of how technology evolves and what are the use cases for the technology usually depends on any number of factors. Number one, it can be sort of who's funding the research of that technology, right? And different people are gonna have different things that they prioritize. So if you don't have a more broadly distributed sort of capital allocation system, then you're not necessarily going to have or even optimize on the number of use cases. Or let's say the number of use cases, it can impact the rate and the order at which use cases are developed. And I think you see that both in the internet and you're seeing that with blockchain. And so you get sort of the higher or the, let's say the highest monetization use cases are the ones that people kind of glom onto, at least immediately. Sometimes they can have enormous amount of social value and sometimes they can have or be extraordinarily socially deleterious, it just depends. But whatever those use cases are, tend to be the ones that are first discovered. And then people kind of look at the technology and they say to themselves, oh, this is kind of interesting. I can use this in my own backyard or in my neighborhood or something. So, you know, literally sort of that tends to define initial use cases. But that second element is also defined by people's familiarity, expertise with, literacy with that technology, and having sort of experiences that allow for the development of a particular use case.

So, you know, if I'm coming from my home state of Arkansas, and everyone's like, Really? It's like, yes, I am a hardcore southern guy. Uh, and, you know, uh, I had to testify relatively recently about positive use cases on blockchain technology. And I was next to a gentleman, um, created a company called Cattle Proof. He was like a second or third generation sort of farmer. And, you now, I really glommed onto that because, you know, I, where I grew up, we know we had lots of cattle around my house. I was telling people that I actually had to hop into a car to head down a dirt road to get to a mailbox. And you know here in DC, I have to explain to people what a mailbox is. But the fact that you have these different kinds of experiences tend to inform how people think about how they can use them. And so what I really do like and enjoy about the use case over in Baltimore that the solicitor is explaining is it really comes towards a very ingenious person who's looking at technology, and she's looking at a problem and saying, okay, how am I gonna sort of put that to.

One last thing, I like to convene conversations in the same way that Clev does, which is to think about how can we get just lots of different people to talk about how that technology fits into their lives, or what do they find interesting about it, and usually when you get lots of folks in the room, lock the door, throw away the key, people tend to come up with some really ingenious applications. And again, the real estate application is one that's been around for a while in theory. I was on the Fannie Mae board for years. We have discussed blockchain-based applications. There are some companies in the space that think about what are you tokenizing and how are you to tokenizing. But the fact that this project is honing in on one of the key toughest problems, which is title. I mean, title is always challenging because at a national level, it's usually some kind of localized system of title organization and laws that have to be managed, which creates difficulty at scaling out certain kinds of solutions. So you have to have very dedicated public servants who are willing to do the hard work to get that done. And then, however, once you create any kind of blockchain-based system and you're but title, title insurance, anything else on that blockchain, you can create

different kinds of identity solutions that can expedite access to different documentation or you can help to reduce the paperwork that in turn creates the fee structure that cumulatively can lock people out of different kinds of wealth building experiences and opportunities. And, you know, in the United States, the ways in which most people build their wealth is through the ownership of a home. So when you can sort of attack those fee structures through things like decentralization, you start to move the dial on things like equity and access to wealth that really require a bit of a rethinking and a serious engagement with, again, the opportunities and the risks of any particular technology.

TURNER LEE: Well, I mean, I love the way you're talking about that. And you reminded me when you talked about being from Arkansas, you know, I wrote this book, Chris, called "Digitally Invisible." And I had the opportunity to go to a lot of farming communities where, to your point, you, I saw in our research on getting ready for this panel in particular, a lot, of agriculture using blockchain technology, despite not having basic internet access, it helps with the supply chain for farmers. Who are trying to build out what kind of products and services or their produce capacity or whatever the case may be. So I found that really interesting. So thank you for bringing that up, and at the same time, bringing up the point that this could actually contribute to more equity in the marketplace if people use it in ways that it actually accelerates wealth creation for certain communities. You know, I mean, Clem for me though, and you and I talk about this often, there's always a regulatory stance to this, right? Because at the same token where we're talking about these positive effects, there's always the likelihood, you know, the lack of guidance when I was on the technology advisory committee that was commissioned by former CFTC Commissioner Christy, uh, Romero Goldsmith. Part of it was like, Goldsmith, excuse me. Part of, it was, like, how do you actually make sure these things are safe? So I'm curious from you, what's the regulatory landscape when it comes to blockchain technology and like, how is that a little different, different than the conversations we're having on crypto?

MESIDOR: Yeah, and that's a great question. And I know, you know, Professor Brummer, Chris has a lot to say about that. He's actually, there's an article that he wrote a few years back that talked about, you know, just the history of regulation and compliance and how it has led to a lot of the pieces and brought us to where we're at. So I know he will have a lot to say about that, but I think, you know, most people don't realize a lot of the blockchain cryptocurrency space is regulated, right? When you look at how the FDA has its own blockchain, right, so, but the regulatory landscape is that right now we're talking about a regulatory framework for crypto. Think of the 1990s and the internet. In the 1990s, Congress had to think about what is the regulatory framework for the internet? And they negotiate all of these rules. And let's be honest, we're trying to dial back some of those rules that they received. And when it comes to financial services, and again, Chris will talk more about this, but we are operating under 1930s policies. We're operating under old policies that don't really fit for banking and don't necessarily fit for fintechs. And, oh my God, and blockchain and cryptocurrencies definitely don't fit within those constraints. So the current rules are not sufficient. So we need more rules. But at the state level, there's a lot of regulatory policies in place that - New York's BitLicense is probably one of the oldest and one of their strictest. And at the federal level is where we have a lot work to do, where the audience is hearing about market structure legislation, and stablecoin legislation. Today, later this afternoon, the Senate is going to be voting on its stablecoin legislation. And if it passes out of the Senate, you know, the House, you know, will actually have the opportunity to move on their bill that they've already marked up. And we could actually have a regulatory framework for stablecoins by this fall potentially, which would be gamechanging. But I will say, you know, for the audience, I think the regulatory conversation is at the corner of risk, is where there's the friction point. We can tell people that crypto is regulated at the state level, that at the federal level we have to comply with KYC and AML, and all of these, you now, how the SEC treats it as securities versus commodities, or even the IRS, you have to pay your taxes, that treat it as property. But I think for people, the issue is risk, right? It is, you know, illicit use of cryptocurrency and the risk to our financial system. And those issues are a bit more complex. I find it interesting that, you know, Dr. Turner Lee, you work on AI, and AI is not regulated. Not even a little bit. But people are building on AI. No one spends a lot of time talking about why aren't we regulating AI? Why aren't there the rules of the

road? And so I think for, as we're thinking about what is the regulatory framework for crypto, like stablecoins is important because we've been talking about digital, a digital dollar for a long time. But going to market structure in terms of who can get a license, who can become a market leader, what are the compliance and disclosure rules? We need more people at the table. We need leaders of public institutions talking about what the rules are, because we don't want to create another industry that locks people out. We don't want a regulatory framework that picks winners and losers where we're essentially creating what we have in big tech where a handful of wealthy people control the industry. We finally have an opportunity to think about a regulatory framework differently, right? And I think, you know, crypto is a bipartisan issue, but there's a lot of partisanship. But I think we have to start leaning into the conversation about risks, talk more about risk mitigation, make risks less spooky. You know, scams and fraud, they're not unique to the blockchain or cryptocurrency space, but we have to, we need policy makers to recognize that the American public, consumers, households, new retail investors, they want greater participation in the innovation economy. Whether that be our financial system or that be opportunities for entrepreneurship, or that opportunity to actually become a market leader. And we can no longer continue to create policies that excludes some people because we want to protect them, but ensures that the same people continue to get rich.

TURNER LEE: Well, I think that's such a- Go ahead. Chris, I want to pivot to you because I was going to ask you the question, though, like risk is at the center, right? But at the same time, again, there's compliance and you want to be sure, cut to your point, that these profiteers are not essentially exploiting people just because it's a new entryway into the financial market. Go ahead, Chris, sorry about that.

BRUMMER: No, I think that at its core for many of the regulatory issues is, you know, and the regulatory question is, our sort of legacy regulatory system is based on pieces of paper, right? You know, you cut down trees, you know. If it's something that you're filing for title purposes, you have pieces of papers, you put them on a table before you're about to go through your closing, and you kind of sift all the documents. And the question is, what are the rules there? And then when you get to something like finance, where you're using someone else's money in some way or another, right? Then there's a question of, well, what does a, number one, what does a digital system look like? You know, let's call it digital 1.0. And frankly, our regulatory system has always had a problem, sort of regulating digital systems in any guise, right? So I can go through, I'm a securities law professor so I could really put everyone to sleep with the history of securities law and what happened and something called the paperwork crisis in the 1960s. And there's nothing new to this, right. And then you have another digital system, but again, that's operating differently in a non-centralized sort of distributed way. And so now, you know, people are trying to grapple with, qu'est-ce que c'est? And again, many of the original systems were the logic of the regulation itself was based on pieces of paper where information moved a lot slower, where there are different kinds of verification systems, where information in general was not so openly accessible, good or bad, online.

And so there were just, literally it was a different society and different information technologies that were sort of undergirding how people transacted, right? And so, right now, people are trying to figure out exactly what should it look like. I've always been of the belief that if you're going to look at the technology, you have to both go to where the people are who are transacting in the technology. To Cleve's point, too many of our rules have been based on the risk of harm and not the risk of non-participation. And so therefore, people will complain about things like widening wealth gaps while we also have different kinds of rules that effectively lock out or literally redline our capital markets in ways that people can't always participate in them and then people are shocked, shocked, that you get more wealth inequality as an outcome. I do think that the seriousness then has to be taken when you look at the technology to figure out or the risk to do a serious assessment of what are those risks? How does technology exacerbate risk? How does the technology minimize risk? So you have to create a different kind of risk-reward framework, and then you have to go through this task of figuring out, well, when you look at the risk bucket, is there

anything that can be made or created to either mitigate those risks or almost do a little bit of a judo move and make those risks into opportunities, right?

You mentioned disclosure, I have my own little disclosure startup which I only created because the SEC wasn't doing anything. And I said, wait a minute. So there's no substantive rulemaking here going on here. And, you know, after 20 years of teaching, I sort of said to myself, wait, a minute, there's gotta be a, there's a little bit of a problem here. You have to update your disclosures substantively because the risks of, you know, attaching to a crypto asset are very, very different from the kinds of risks that are gonna attach to just, you know your common equity. You know, the things you just want to know if I'm an investor, like, uh, how does your underlying blockchain work? You know? Like those are questions that aren't necessarily going to be required under your legacy logics of pieces of paper. And then, you know, you have to sort of think, well, people aren't using, you know, like when you think about how disclosure system usually work, they're not putting pieces of paperwork into a cardboard box and mailing them off to people where you get these little stock certificates. It's something completely different. So, okay, I guess you need a technology stack to support. That information system. And, you know, I do think that the more digital, the financial product, one of the risks is it can become more abstract. And so the more abstract it is, the easier it is to sort of exploit people, right? Because, you're dealing with things that are more esoteric, even where many of the things may have some value creation attached to them. So you have to really take seriously then, you know, how do you ensure that people have, you know, technology literacy. I mean, I think the first iteration of finance was always about like, can you read your balance sheet and your financial statements, et cetera, et, et. People would sort of emphasize financial literacy. And nowadays really technology literacy is as or more important than financial literacy and so, you know what kinds of tools can you develop that may be on a compliance end or maybe even on a marketing end. But also serve this greater public good purpose, right? So that you can, you know, escalate or elevate, I should say, the know-how. So that other people can not just buy or hold certain kinds of instruments as end users or consumers, but also can become participants themselves and who built things and who are entrepreneurs and who also contribute to the economy, right. And that, I think that that larger public good focus, the sort of mission-oriented focus, has to be embedded in the system. But for me, it's not just sort of typical sort of risk. I mean, I think there are enormous risks of doing nothing, just like there are risks of doing the wrong thing. So, you just have to be serious about it and not just kind of lapse into empty slogans, which nowadays, it can be pretty hard.

TURNER LEE: And I mean, I love what you're talking about. And when you started talking about paper, I was thinking about all of the treasury notes I still have in a box. Because growing up, you know, it was always a great aunt or uncle that gave you a Treasury note and said, here's this $5, in 20, 30 years, it's gonna be 50. And so you're definitely right. The internet has changed the way that we actually transact. But you know the train is out the station when we start to talk about these decentralized finance mechanisms, which I think is so interesting. But, you know, Ebony, I want to go back to you because there's a lot of people listening that are like, but I'm in government, right? I need to take Chris's class. I need spend some time with Cleve because I'm just trying to ease and streamline processes that have been redundant or have, you know, taking a lot time to be able to do that type of transfer, particularly in real estate or in titling, you know, as a public sector professional, when you think about how this is evolving. You know, share with the audience like what you found to be some of the challenges you had when you came to the table and you said, hey, let's do this and where you think there are probably other opportunities for execution.

THOMPSON: Yeah, some of the problems in terms of just, people are used to, especially in government, they're used to how things have been done. That's just how it is. And I had to, you know, understand that, especially as I was trying to introduce them to something that I thought would really help them. It's a little resistance in terms of how things had already been done and, but. It had to be positioned as, how can I make that better? How can I making better for you? How can figure out what your pain points are and see how the technology can help relieve some of that pain that you all are feeling? So for instance, permitting is a huge thing, right? And that also plays into the housing and the backlog with housing. If people that are developing are having trouble

getting permits, where they're saying oh, it's stuck in this office and it's stuck in that office and stuck in the other office. It shall be on check. And we should know exactly where things are going. As it's being approved, we should know and we should be able to look at that and have the people that are paying for these permits have it transparent for them to actually have real life in time update on where things. When we look at lien releases it could help us in terms of that because any time you close a house, no matter whether it's vacant or not doesn't matter. The city has to be able to tell you what liens are on the property in terms of water bills, property taxes, right, have they been paid? We have to do that and sometimes we're fine and that takes sometimes several weeks. And then you're having people to have to escrow an additional amount sometimes, not fully closed, without getting that information, even if they can close without it. So those are the things.

And then there's a way for the city to monetize those things, right? Expedited permitting, we can do that easier on chain. Expedited lien releases, we could do that, easier. They'll pay for that premium. Also, one of the things that I think, that I saw the issues, that I really got a lot of people on board. We're utilizing smart contracts with our, um, our primes and our subs, right? Because we're only in privity of contract with our prides and the people that are usually our subcontractors are usually a lot of times, small business owners, minority business owners, women business owners who don't necessarily qualify to be on the prime level. And what we were seeing was I sit on the board of estimates, our spending and I saw we just had to suspend a prime because they withheld payment from a sub for over a year when they got paid from us. And so the subcontractor is thinking it's the city, city's paid. The prime has not paid them. So if we had a self-executing contract, so the instant that the prime gets paid, it automatically pays that subcontractor as long as they said that they've done the work. And in this instance, they had done the works, they just weren't paying them. So those are things where it makes, and it encourages people to wanna do business with the city. It incentivizes us to be more efficient, right? These are all good things. Procurement, I can go on and on and I can tell you how the law department has to come in and I said why am I getting sued for invalidating liens? What happened was someone redeemed a house in tax sale and they were still using manila folders at three o'clock in the afternoon and dropping it off and the person had been out on covid and didn't file it and then we sold the property but the person redeemed the lien. I have to go back and invalidate the deed and then give it back to the person who -- just insane stuff. It's just, it's just it makes no sense. And the city is losing money. So when you put it like that, and you put into common sense use cases, I could go on and on and on. But those are some of the things that, you know, has nothing to do with cryptocurrency, right? This is the technology that powers it. And we're just scratching the surface here. So there are many ways that I want to utilize the technology, and now that people are becoming more familiar with it and comfortable with it, they're like, oh, this is actually a really good thing, thanks, Ebony.

TURNER LEE: Well, and that brings me up, Cleve to you. I mean, look, and you're in the law department.

THOMPSON: Right, the law, and they're, like, you're not in this, people. They're like why are you even over here? You know, and I'm like, well, because when things go wrong, it comes to me.

TURNER LEE: Well, and for people listening, I think when you're talking about it, it builds like an ecology, right? So oftentimes, and Cleve, I kind of want to shift this over to you, you know, I think the balance of power that Chris was talking about happens often. And in this space, there are probably lots of perceptions around the malfeasance, potentially around the use of these decentralized finance mechanisms. Primarily because it's a big company that's coming in and selling something big. I mean, to me, there are some companies that are actually explicitly doing blockchain for public good. But what about startups? Like, is this an area right for startups to kind of come in? Because it seems to me the startup community has the ability to work directly with the government to figure out. This is what you're trying to solve and I can give you this without overlaying more bureaucracy and more layers, you know, and that may also help with some of the privacy and equity concerns that we often have. So I'm just curious, it was a throwball question I'm

asking because Ebony got me thinking about like who is the person that is selling you this stuff to make sure we maintain a balance of power.

MESIDOR: Well, the blockchain cryptocurrency space, Web3 and DeFi, it is the startup nation. We created this $3 trillion market based on creators and startups. The space is barely 15 years old in terms of, you know, post the first bitcoin being mine, for post the 1st time bitcoin was worth anything, post where we actually started building on blockchain technology. So that is relatively new. So we're at the starting line. And even when you look at some of the big companies in crypto, when you look at the crypto native space, there's very few of them. Why? Because the space is native, is novice. And I remember some of these companies early on. I first learned about bitcoin in 2013 while serving in the Obama administration and started working in crypto full time in 2017. Many of these CEOs, I remember them just going to meetups and talking about what they're building. So this space is still about startups and founders. This space was created by people who saw a problem, as Chris mentioned earlier, and said, how can I fix it? And even, you know, Chris mentioned that even, he leads the DC FinTech Summit every single year, you know is a professor at Georgetown, but saw a problem and created a startup to actually address the compliance issue and the disclosure issue. And so when people see, you know, big companies, you know for lots of big dollars, the growth of this space, even when on the cryptocurrency side, the largest holders of cryptocurrency are communities of color, are the working class, are young people, right? So you can point to a few individuals who hold a lot of bitcoin, who wanna just keep buying it, or you can look at the everyday people who are really leveraging these currencies or this technology. Long-winded waiters say that this is truly a creator economy. This is truly about startups. This is surely about visionaries.

And one of the startups I would love to shout out is there's Kura Payments, led by Clifford Nau and Stephanie Joseph. They actually created a stablecoin platform, alternative payments to facilitate remittances out of the Caribbean, making sure that countries, smaller countries that actually, have challenges that are really at the mercy of the Western Unions of the world, that there's an alternative platform that they can be leveraging stablecoin, but really focus on the infrastructure that they have. And Kura Payments is amazing in terms of these young founders. Because one is a MIT grad, one is a Harvard grad, both people of color who decided we wanted to fix the problem. So for me, when I think about market structural legislation, it is how do we ensure that we're creating a framework where these startup founders, these entrepreneurs, these creators, have a pathway still to become market leaders like some of the market leaders we have today. Even when we talk about risks and making sure that we're thinking about risks, is how can we ensure that we are not pushing people out with legislation? I will tell you that I have seen so many folks in the NFT space get pushed out because we had an SEC chair that actually didn’t want, that just was like, they all look like securities to me. These things look like... Fine. Say they’re securities, but let's actually have the rules of the road along the way, because the only people who suffer from a lot of these pasturing around with are the small businesses, are the entrepreneurs, are the startup founders, the big players will actually be fine. I want to say New York State continues to be the gold standard with their bit license because they made it so strict right they were so focused on compliance and disclosures and AML and risk and all of that good stuff. It's literally impossible for a big company to get a license, let alone if you're a startup founder or entrepreneurs. We should be creating frameworks where the big guys can win as well as the little guys. And that's been my concern, right? In terms of as we're thinking about what is the regulatory framework for blockchain and cryptocurrency, is how do we ensure that this space continues to be a place where creators and founders and entrepreneurs can grow, especially new ones. I know Chris wants to get in there.

BRUMMER: Yeah, it was just like your original question on like government, like, like we, uh, over at my startup, it's called blueprint because we brought blueprint to like understanding stuff. Um, but I mean, we talked to regulators every day. I mean our very first thing that we did was because there were rules in Europe and not in, in the United States. So we just went to Europe and we just did like the first pilot for the EU rules. And we worked with like a central bank there. We worked with folks from the European commission, something called the Basel committee, all these like central banker kind of guys. And I mean, I talk to regulators and central bankers every single day.

And I think that to your original sort of point is that regulators and the city solicitor, uh... Thompson sort of mention this you know like you know they they have their processes and you know the job to do you want to execute those jobs some as you always have the time think through new different ways to get it done and and in an ideal world uh... You you should be able to to to leverage uh... Some of the newest know-how in a way that helps to promote the interests uh... Of of the public and uh... I think that you do certainly have plenty of people in the space who would be more than willing to do it. A little bit, there's a little bit of a chicken and egg problem I think. Sometimes there's, you know, the startup folks wanna have clear rules to get something done and then, but the regulators sometimes will say, well, you now, I'll develop more rules when I know what's up. Or there's also the more challenging one is that the people. Who are in government, don't know very much necessarily about technology. I mean, we have a unicorn here with us talking, but then on the other end, you also have lots of folks in the space who may know a lot about technology, but they don't really know very about government or regulation, right? And so, I'm old enough to know all of these old Saturday Night Live videos. And episodes where you have someone, I think it was maybe Bill Murray and Eddie Murphy or something, and one person's speaking five minutes in the future and the other person's speaking five in the past, and they're all having the conversation at the same time and Steve Martin. And that's really sometimes how things play out, and it's hard to kind of land on solutions in part because people have such different perspectives and they are coming and starting from very different initial places.

TURNER LEE: Well, you know, and I want to I think your question leads nicely into this question that we just got off of X, which is, you know, I think what I'm hearing from everybody is there's this balance, right? Because you want to be able to find ways we bring more value back to the public sector entity, whether it's the government or community-based organization or community bank, whatever the like, but the same token, right? You want to make sure that you have the right regulation in that does a stifle innovation, but it still protects consumers. So this particular question I thought was interesting. It's really around liability concerns, right? What happens when the liability concern sort of block the deployment of blockchain infrastructure and apps in a way that, you know, government could be sued, right. So the question is, is there a need for something like Section 230 that could ensure firms using blockchain for specific use cases like titling don't get sued if somebody hacks. Because we haven't really talked about, Cleve sort of mentioned it, you know, and I was trying to go down that lane as well. But like AI can come in and do a lot of things to also manipulate the service itself. So just curious, like, do we need to also think about those vulnerabilities that come with liability, right? And so should we also be having this conversation to ensure that we set up the right, you don't know, not just the rules that you both are talking about, but the right technological infrastructure, architecture. To ensure that we're not gonna have increased liability if people err to use these tools as well. Anybody can answer.

MESIDOR: I was gonna let Chris go first, but...

TURNER LEE: Go ahead.

BRUMMER: You know, I was like, why, you know, go for it.

MESIDOR: No, I was going to say that we absolutely need all of these rules, right? But they just can't be the same old rules, because the technology is functioning differently. We're talking about a cryptocurrency that you can get it and it's a commodity, but the way you use it and move it forward, it's as a security. And so this is really about the rules of the road and not being afraid of them. There's a lot of unanswered questions. Absolutely. There are people profiting, but that's why we do need the rules, right, to figure out who can and cannot do this. And it can't be about one person specifically. It has to be about the roles to ensure that we can innovate and make sure we can protect market participants. And that government can actually step in and hold people accountable. Chris mentioned that we're no longer talking about, these are the contracts and this contract says yes, and this contracts says why, and this is how we do it. And this is the remedy if this happens. In some cases, yeah, that might be sufficient, but in most cases, We have to go back and look at a few things, but we have to start with a basic regulatory framework. And we need these rules

because the term digital assets is very broad. Cryptocurrencies are broad. Blockchain is broad. And let's be honest, we wanna separate blockchain technology from cryptocurrency, but anything you put on a blockchain, you can tokenize. So let's not separate. And I am concerned that this whole thing about, well, blockchain is okay, but you know, decentralized finance, cryptocurrency, is riskier. Well, to me, all I hear is rich people focus on cryptocurrency, because that's where the money, and poor people focus on blockchain, that's your lane, right? We, I don't want to go too far off track, but I do think that, you know we have to, we're so far behind on the rules, we spent too many years debating on the merits of the technology. Merits of this industry and pretended that it wasn't here and now it's not just here. It's iterating, it's growing, and now we have to get to the nitty-gritty.

TURNER LEE: I mean, I think what I hear you saying is we've got to do a better job of raising awareness of the issue. So defining these spaces also, right, but then also being very clear where there might be, you know, opportunities and vulnerabilities in both spaces and where they're connected. When you gave the earlier definition, I'm a telecom person as well. I do a lot of telecom and technology policy research and I started thinking about spectrum, you know, and how we build off of Spectrum to create... Various layers of wireless connectivity. But Chris, again, going back to this question from the audience, I mean, Ebony's use case on titling seems to be pretty cut and dry. And I'll ask Ebony as we start to wrap up, like how she found vendors and what best practices, but like, should we have some just basic disclosure and basic rules when we're looking at these particular use cases?

BRUMMER: So I wrote a couple of articles, you know, you just don't just say, hey, I'm gonna go start a startup. I mean, I guess some people do, but for me it was, it really just took a while. And you know I actually wrote for years these articles and one was for Stanford and I like testified for Congress and everything. I was like, this doesn't make any sense. And I, in one of them, I was arguing for like a much more expansive notion of even what disclosure means, right? So You know, typically we tend to associate disclosure with a securities law context. But really, when you think about consumer protection, it's still the same thing. I mean, when even you buy cereal in a cereal box, you're trying to find like what are the nutrition elements of, you know, that's that's a form of disclosure. And so the idea, particularly in a world where we have less time, where decisions have to be made faster, but yet we have a plethora of information. Has to be a disclosure system that's able to sort of help organize the information and also to be able to move the information, however they're transacting to sort where they are. And that's getting to things with, when it comes to wallets and thinking about wallets and blockchain spores and all these other kinds of things in ways that kind of promote transactions, but also sort of promote informational efficiency. And I do think You know, even when you get into things like, like title and, you know, this is pushing the conversation a little bit more, you know, once you, again, once you start putting things on a, on a blockchain, me, you have like your, your option set starts to expand as to, okay, well now I have all this information here. What do I want to do with it? And you can, I'm not advocating any of this, but I'm just trying to say like, you one of the interesting things is because it is decentralized because blockchains. Can kind of decompose information and move information very quickly. And that's one of the reasons why financial applications find themselves, you know, a plethora of financial applications and blockchains is, well, you know blockchain-based stuff tends to be able to generate large amounts of money very quickly, right? And it's not just because of the speculative part. It's literally just the way the underlying technology works. And so, you now, if you decide to create a title program, do you also wanna create a program for fractional ownership of real estate? Because now you've got it on chain, right? So, you know, would you wanna have normal people participating in that or not, you now? Would you like to have some kind of governmental participation in this, right, like, you, and then you start to sort of say to yourself, okay, well, you no, do I wanna have, if not a fractional, ownership? You know, certain kinds of tax credits that I'm gonna start to tokenize and then sort of tie those to, you know this basically tokenized real estate market that I've created. So I'm going to build off of the, let's call it bureaucratic and administrative efficiencies in a way to more widely distribute value, right? To the community or something like, you know you start to get like, I don't know, maybe I could do this, right. And so it just becomes very, very interesting in terms of a kind of a thought experiment. The liability

question, you know, I think that before you you know anyone sort of waves away liability to close with I think two things make sure that the rules are fit for purpose, right? You know in disclosure, you now I always say everyone's talking about like your last three years of financial statements I'm like no you need to know like how the technology operates or it's like board of governments You know corporate governance. I'm saying well, maybe talk about blockchain governance Like like who's behind these different nodes and validators and everything, right? Like there are different kinds of things that are very important so substantively to just figure it out and then Clarity of actually having rules is a good place to start, right And and I think that if you have fit-for-purpose rules, and you have actual rules of the road You don't necessarily have the need to just you know have this this blanket rip You know excusing liability right because then that instance behavior that ultimately can undermine trust in the system itself. But if you really want to have trust in this system, then you have to have a system that works. And you have a have a clear and operable rules of the road. But it's tricky because again, there are lots of opportunities when you start to build these core basic systems and again, even something as cut and dry as a tokenized title systems. It does create, if you're ambitious, you can be like, oh, okay, well, what else? How much more of the public good can I kind of squeeze out of this thing here? And then, but then you get into sort of trickier questions in terms of how you wanna operationalize it, if you want other people to participate in it, like how are you gonna do it? But again, it all starts with just making sure that you have a system. And that's kind of fit for purpose. And I know that sounds really basic, but having public servants who are serious about the technology and asking real questions about it, and then also having market participants who are seriously about actually learning what the governance expectations are. And if you can do the two, you can get pretty far. At least it's been my experience.

TURNER LEE: I mean, I think these are all helpful, and it was a question from Ben just about the resources that are available to governments. Just watch this webinar over and over again, Ben, and I think that you'll glean some really good points that will help you think through, like what role you can play in your own government or your federal agency or local agency that's trying to do something around this technology for good. I wanna thank all of you. I mean, I think what we learned today is that this is probably the first of many conversations that we need to have. So I wanna think. Solicitor Thompson, Chris, Cleve, thank you for coming on to the Brookings webinar today to just sort of talk about this. You know, we at the Center for Technology Innovation, we wanna keep pushing the envelope on this. That's why we invented and created the AI Equity Lab to workshop issues like this across a whole gamut of people who are in different disciplines, industry, backgrounds, public and private so that we can sort of get to some really good, I wanna say use cases and just some conversation on this But I know we got a lot more to talk about because I think you all kept slipping in that C word, that crypto word. So keep following us at the Center for Technology Innovation because we want to keep talking about this, particularly as AI relates to the evolution of this new marketplace. So I knew, Cleve, there was a reason I was sitting on that CFTC committee because I was going to bring this up at some point in my career. I am Dr. Turner Lee at the Brookings Institution. Again, thank you all for joining us and taking this time and thank you to the panelists.

THOMPSON Thank you so much for having us.

BRUMMER: Thank you.