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Panel I: Blockchain and the Law

Carla L. Reyes
Southern Methodist University, Dedman School of Law

Nelson M. Rosario

Rachel M. Cannon

Richard Tall

Author ORCID Identifier:

(iD) https://orcid.org/0000-0002-2448-8309

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PANEL I: BLOCKCHAIN AND THE LAW

CARLA L. REYES, NELSON M. ROSARIO, RACHEL M. CANNON, AND RICHARD TALL

MODERATOR ROBINSON:
  Good morning, everyone. My name's Randy Robinson. I'm a professor here at John Marshall Law, and I'd like to welcome you all to the John Marshall Law School and to the 24th Annual Belle and Joseph H. Braun Memorial Symposium. The goal of our symposium today is to gain a better understanding of blockchain and distributed ledger technology and provide legal professionals and law students with a foundation in this emerging practice area. Here at John Marshall, we're very proud of our history and our culture of embracing technology in the practice of law. We're happy to continue this great tradition today by hosting a symposium on this cutting-edge issue that seems to suddenly be everywhere.
  Our first panel member is Ms. Rachel Cannon. Ms. Cannon is a partner in the Litigation and Dispute Resolution and White Collar and Government Investigations Practice at Dentons. She focuses on trial work, investigations, complex civil litigation, as well as white collar criminal defense. She also advises entrepreneurs about regulatory issues surrounding initial coin offerings, cryptocurrencies, and blockchain technology. Prior to joining Dentons, Ms. Cannon served as an Assistant United States Attorney in Chicago where she supervised bankruptcy fraud and worked in the securities and fraud section. Ms. Cannon has also served as a trial advocacy instructor for the CFTC, the Department of Justice, and the Securities and Exchange Commission.
  Our next panelist is Professor Carla Reyes. She is an Assistant Professor of Law and the Director of LegalRnD at Michigan State University College of Law. There she teaches business enterprises, secured transactions, technology transactions, and artificial intelligence and the law. She's widely recognized for her leadership on the issues raised by the intersection of blockchain technology and the law, and currently serves as a faculty associate at the Berkman Klein Center for Internet & Society at Harvard University.
  Our third panelist is Mr. Nelson Rosario. He is a partner at Smolinski Rosario where he focuses on intellectual property—particularly patent and trademarks—and also works on legal issues related to blockchain and cryptocurrency. His prior experience includes working in private practice for multiple IP boutique firms in Chicago, for the legal department of a large multinational consumer electronics corporation, and for a Federal Magistrate Judge. Mr. Rosario has a background in computer science, and he writes and speaks regularly on emerging technology issues relevant to attorneys and entrepreneurs. In addition, he teaches a class called "Blockchain, Cryptocurrency + Law" at the Illinois Tech Chicago-Kent College of Law.
  And, finally, last but not least, Mr. Richard Tall, partner coming to us from Faegre Baker Daniels where he guides financial service companies on regulatory financing and transactional matters, including counseling on financial technology and digital currency issues. Mr. Tall also provides business-oriented advice to companies, limited partnerships, and investment firms on corporate and M&A

matters. He has particular expertise in the renewable energy and travel sectors. Please welcome Mr. Richard Tall.

On this panel, we're really going to be talking about big-picture items relating to blockchain and how this new technology is, for lack of a better term, "disrupting" the law. So, I'm going to start out with just kind of a broad-based question for each of you. What initially triggered your interest in blockchain or distributed ledger technology, and what issues keep you engaged in this practice or scholarly area?

CANNON:

Sure. For me, some of my clients began getting subpoenas from the SEC because they were involved in these initial coin offerings, and so then they picked up the phone and said, you know, what is this about? What do I do with this? And that's kind of how I got in this space. I had to really start educating myself on what exactly is the blockchain and how these initial coin offerings work. Are these tokens the client has offered securities? Are they not securities? To be honest, there have been kind of a wave of these types of calls because the SEC has been extremely busy in this area. So, that's how I got to learn about this area. Not to sound like a classic lawyer, but this is kind of like a lawyer's dream because it's nice and gray. There's lots of unclear stuff there. The regulators are crawling all over, and everyone is kind of unsure of what to do. So, it's the perfect time to sort of be advising in this space, but it's also really a super interesting time because the regulators are always kind of coming out with these pronouncements. But even the regulators' pronouncements are sort of gray, and so you're just kind of watching this ball evolve and grow, and it's very exciting.

REYES:

For me, I was a junior associate at Perkins Coie in Seattle, Washington in 2011, 2012 where I was developing an expertise in electronic financial services laws. And then Treasury issued that guidance, the infamous FinCEN guidance, in March 2013, and my EFS practice became a crypto/blockchain practice, and I haven't really looked back since. My friends and I joke that once you learn about blockchain technology and crypto, it's so interesting that it sort of just takes over your life, and you don't really—you can't really think about anything else. I practiced with Perkins until 2016 when I switched to academia, and I made the jump because there are so many fascinating issues that are bigger than any one client, that I wanted to be able to pursue those. And that's what I do now. That's what keeps me, to your second question, engaged in the area. Things that are fascinating me now are DAOs and business enterprises law and smart contracts as they pertain to the wider variety of co-connected contracts that exist.

ROSARIO:

I can't really pinpoint an exact moment. When I first got interested in this, it was with respect to bitcoin. As part of a career change, I was in law school. I have a degree in computer science, and so I was familiar with peer-to-peer systems. And I just remember thinking, like, this doesn't make sense. This shouldn't work. I do have an e-mail from September of 2012 from friends of mine making fun of me about

bitcoin, so apparently it was something I was very interested in, enough to get annoying about. Then, as I started my legal career, I just realized that this was something I wanted to learn as much as I could about and not a lot of people knew a lot about it. And the reason I stay engaged is it's probably the most interdisciplinary topic I've ever come across. As you peel back the layers of the onion, the onion just gets bigger and bigger. So, as somebody who's done a couple different things, this is perfect.

TALL:
          As you should be able to tell from my accent, I'm not from around here. I first got involved in sort of PIT, peer, and platform-based securities issues about six or seven years ago with crowdfunding, which I think in terms of crowdfunding probably makes me a bit of an early mover. And then four years ago a colleague came along and said we've got a client who wants to develop a bitcoin trading platform, and I thought, oh, I must find out what this is. I've been involved quite closely since then, ICOs, and then I got a couple other applications on the cryptocurrency side. And obviously we differentiate between cryptocurrencies and the blockchain. The reason I remain engaged is because I haven't gotten any colleagues I can convince to do the work instead of me. And it is actually very interesting. And like you say, Nelson, there is a huge number of layers to the onion, as Rachel says, lots of gray areas, and we lawyers love gray areas.

MODERATOR ROBINSON:
          One of the challenges I think in talking about blockchain is we all come with different levels of experience and understanding of how this technology works. Without asking you to explain blockchain, I'm going to ask you in what ways have we already seen this technology intersect with legal and regulatory frameworks, and what has been the result of that so far? Hopefully through this conversation, we can talk a little bit about the unique features of this technology that present such thorny regulatory issues.

CANNON:
          Yesterday, for example, we saw the SEC came out with a new enforcement action against a cryptocurrency exchange, and it was the first of its kind. And basically the gist of it was this guy had created a cryptocurrency exchange that was kind of hooked in to the Ethereum blockchain, and it allowed people to buy and sell ether and ERC-20 compatible tokens, and the SEC said that was an unregistered securities exchange. I think there were a number of things that were notable, but if you read the enforcement order, there was no mention of fraud or fraudulent conduct on the part of the guy who had started this exchange. For the most part, what the SEC and CFTC have gone after so far in this space are what I call the low-hanging fruit—kind of Ponzi schemes—schemes where investors have been duped, things where people clearly would agree regulation is appropriate, and the rules are very black and white. And nobody is kind of surprised the regulators are wading into that space. But here, this is kind of more of a technical violation, and the SEC explained, you know, we issued our DAO report. We told you that most of these initial coin offerings use tokens that we consider to be securities. Essentially, we put you on

notice about a year ago of this fact. And so now if you're going to be starting a cryptocurrency exchange where you allow people to buy and sell tokens, many of which are securities, we're going to come after you for not properly registering with us that we can monitor what you're doing.

And so that really, I thought, spoke volumes about how the SEC is viewing this. Because I think from their perspective, they've kind of had to struggle how do you fit new technology into old laws? And that can be like putting a square peg into a round hole. I think they have really in some ways handled themselves well by kind of issuing these pronouncements giving people sort of a grace period to learn about them, understand them, and comply and then start taking action. Now, they are kind of making clear that they're treating cryptocurrency exchanges in the same way that they would treat, you know, say a bank that didn't comply with standard regulatory rules even if the bank hadn't defrauded anyone or caused any sort of injury. I think this is kind of recognizing the legitimacy of these cryptocurrency exchanges and acknowledging that they really are becoming mainstream such that the SEC wants to have pure regulatory enforcement over them even if they're not engaged in what looks like laundering.

REYES:
From my perspective, I'm actually interested in the inverse question. Not being a practitioner anymore, I've been looking quite a bit at what happens when governments and regulators adopt blockchain technology for their own internal processes or when they implement law or say you can't comply with law through blockchain technology. For example, in Delaware where you can now issue corporate shares as tokens essentially on the blockchain and use blockchain technology for your corporate share registry, I'm interested in what happens to the surrounding laws that are dependent on the old system. Another example is Delaware's experiment in a UCC-1 filing system for secured transactions using blockchain technology. Well, if they could do it and if they could do it well—which it's not looking like that's the case—but if they could do it well, it has the potential to really streamline all the really complicated rules I have to teach my students in secured transactions. We don't need all of them anymore if we could build a system for filing that takes care of some of the notice and information problems that exist in the current paper/index-by-name system, right.

I've been super interested in what I've been calling the ripple effects of using blockchain technologies for regulatory purposes rather than regulating blockchain technologies' sort of use of blockchain. I think we're going to see sort of six ripple effects from those uses, including changes in the substantive law because some of it's going to be obsolete. You might expect a change in legal culture. Right now, there's a lot of literature that says the law and the way we experience the law is really influenced by the law in lawyers' heads. So, there's procedural issues that are different from court to court. There's things you know about interacting with the SEC that people who don't interact with the SEC don't know—and this is all knowledge that resides in your head. Well, if processes become more technologically-based, there is a likelihood or a chance that that knowledge is in the coders' heads, rather than in the lawyers' heads, and that that can significantly change the way we experience, understand, access even the law. And so that's what I've been thinking about.

TALL:

I think one of the things I'm particularly interested in is, actually, if you go back to the good old-fashioned law of property, and I imagine the U.S.'s system of property is similar to the U.K., which actually unless you're Her Majesty the Queen in the United Kingdom, you don't actually own anything. It's just that your property and asset defeats somebody else's property and that particular asset. I think that's going to be an interesting one when you're using something like the blockchain. It should be completely obvious who owns what, but I don't think that necessarily is going to be the case.

The other thing I'm really interested in is the U.S. and U.K. perspective is very much regulating existing markets. So how do we fit? Going back to what my colleagues on the panel have said, you know, how do we fit this new technology into old systems? You have a number of jurisdictions which are very much creating new systems. So, for example, Malta, Gibraltar, places which historically have sort of been offshore financial centers are writing systems of regulation which only apply within those countries to try and attract blockchain cryptocurrency industries into those jurisdictions. That's very much of a marketing effort, and I'm really interested in how that's going to play out. Because my view, and certainly it's my experience speaking to fund managers over here and in the U.K., they remain very wary of anything that isn't within a jurisdiction they recognize, and the jurisdictions they recognize are the U.K. and U.S. So, I'm really interested to see how that pans out and what kind of international perspective of those jurisdictions, which are writing these systems, to market those jurisdictions and see how that pans out.

MODERATOR ROBINSON:

Richard, I'm curious about your view on Gibraltar and Malta. Are they doing this responsibly? Is this looking like a race to the regulatory bottom? How do you view the position that those jurisdictions are taking?

TALL:

I'm very fond of each, actually, because Gibraltar, I used to go there when I was in the Navy because we had a big Navy base there. And then Malta, I visit once a year to go and see the big firms. And they're very unusual jurisdictions in that because they're so small, all the regulators and all the partners in the big professional services businesses all went to school together, and on the whole, they're related. That's not unusual to have that. We have that in England, too. [Gibraltar and Malta] are coming up responsibly. They're trying to develop these systems where you can give an exchanger stamp or you can give a sort of broker-dealer stamp or something similar, and, yeah, there are exams and certification, things like that. And it all looks really good on paper. Because, of course, it is a marketing effort, and therefore anything that's a marketing effort is always going to be tinged by that marketing. So, again, I think, actually, the proof is going to be in the pudding, which is when it goes wrong, what's going to happen? And I'm English, therefore, I'm hugely cynical that it will go wrong.

ROSARIO:

If I can jump in on kind of the cynical point in terms of jurisdictions kind of competing to try and get blockchain companies and development occurring in their areas, I'm always leery of that because I think it can lead to kind of rushed legislation that doesn't necessarily address the technology accurately. If you look at any of some of the state bills that have been proposed in the United States, I have no idea what it is they're defining when they define a blockchain. Now, to be fair, this is extremely complicated stuff, and if you talk to each of us, we would all give you a different blockchain definition I would wager. But that kind of rush can cause all sorts of problems. I mean, say you go into litigation and you call an expert witness, how the heck are they going to define this now new blockchain definition you have and whether or not your chain is one? I don't know "race to the bottom" is necessarily the right phrase, but it can be really problematic. And I think that the law is really good at regulating behaviors of humans and really bad at regulating technology. And we have an emerging technology. It's not even necessarily solidified on what it's going to look like in 20 years. You know, it's probably going to create a lot of problems.

TALL:

Going back again sort of into ancient history, so six years ago, seven years ago, particularly when various of the U.S. states, and I'm getting into really dangerous territory here because, of course, I'm not from the U.S., and so if I get this wrong, then please forgive me and please jump in. But when individual states were looking at regulation in their crowdfunding platforms and things because, of course, that was very much the rage, and it was interesting. I think particularly Washington state was one of the early movers, and you ended up in some states attempting to regulate crowdfunding and doing this very same thing which was actually how do we start to attract technology companies into, you know, Seattle, Portland. I use that as an example because I actually used to go see Perkins Coie around that time. And I'm just really interested to see, has that sort of shifted the dynamic? Are those State regulators acting in a way that's responsible? And I think we're agreed, Nelson, on the terms of being leery and wary of jurisdictions which are writing early-mover rules, because on the whole, it's not done—the main regulatory focus is done with that marketing focus in mind.

MODERATOR ROBINSON:

Carla, I know that you've wrote about and talked about some of these challenges with the regulation that you've seen, so please jump in there.

REYES:

Two examples come to mind. Treasury issued guidance in March 2013 that essentially said that certain activities using virtual currency could be money transmission, right. And up to that point, I think we only had a few cryptocurrency clients. We were really payments lawyers, so we also counseled companies in the virtual currency but for, like, game space, like traditional virtual currency. We counseled companies in gift cards and online stored value companies. Those were the companies that were the most freaked out by the guidance, because the guidance clearly was aimed at regulating virtual currency. But, nevertheless, the words and

things like "centralized repository" made people think that the traditional folks would get swept into it too. We spent most of our time that first six months trying to figure out which of the traditional companies fit in the guidance and which didn't, right. Namely, there was a line in there that basically said if it's denominated in dollars, it can be prepaid access under federal money transmission laws for money laundering regulations. But if it's denominated anything else, it not money; it can't be prepaid access, and it has to be analyzed under the money transmission rules. That was a big deal for virtual currency companies that were in-game currencies who denominated in gems, right, or gold or whatever. That's not dollars. So, are they money transmission within their games now? That was, like, the first example of using words that nobody—like, we don't know what you're saying.

The more recent example is in smart contract. We have to talk about smart contract laws. We have the law, the Uniform Electronic Transactions Act, UETA. It is technology-neutral on purpose. I am a Research Director for the Technology Committee with Uniform Law Commission, and they talk about when we drafted that, we did it on purpose to be technology-neutral. It does not name a specific technology for a reason, and that reason is we wanted anything that fit electronic signature or electronic records to be included—anything, which includes, likely, if you do the analysis, blockchain technology and records on using smart contracts. But as lawyers and as regulators or lawmakers, we hear "smart contract," and we think, *ooh*, contract, offer, acceptance, consideration. It must be the legally enforceable kind. No, no, no. No. No. No. It has nothing to do with that. It might. It could.

There is a Duke Law Journal article by Kevin Werbach and Nicolas Cornell that explained how it could be an enforceable legal contract.[1] If you look at even recent sort of Twitter streams or discussions from Vitalik [Buterin] and Nick Szabo who coined the term "smart contract,"[2] it's not. They're persistent scripts. They are computer software that do something specific. If we don't look at what it is doing and instead we freak out because of use of the word "contract"— we're lawyers and we want to co-op the term—we end up with laws that say ridiculous things and amend UETA, which—it's worse than the definition. What they've done is say, look, here's this law we have that actually would cover this thing. But now we're going to amend it to say if you're a smart contract, you're only covered if you fit this definition, which nothing fits. So, now the thing that was covered is no longer covered, because nobody has a blockchain that fits that definition. It just doesn't. And I don't know if anybody has read the definition, but it's like every buzzword imaginable is in the definition. It could be tokenless or it could have tokens. It would be permissioned or it permissionless. It could public or private. It could have crypto—I think they use the word "cryptoeconomics." It could have cryptoeconomics or not. And it is in all of them, in any of these "ors," whatever it is, it is a record—an uncensored record of the truth or something like that, uncensored truth. I don't even know what that is, so I'm not sure how there's any blockchain that fits that definition.

Now what we've done is, in these six states that have now adopted this definition, those states UETA no longer arguably covers smart contracts on any blockchain in existence, because they don't meet the definition, and they've just

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[1] Kevin Werbach and Nicolas Cornell, *Contracts* Ex Machina, 67 DUKE L.J. 313 (2017).

[2] Nick Szabo, *Smart Contracts: Building Blocks for Digital Markets*, NICK SZABO'S ESSAYS, PAPERS, AND CONCISE TUTORIALS (1996), https://perma.cc/42JC-PFB3.

messed it up. So that's a pet peeve of mine, clearly. And frankly—it's one thing that I teach my students—it comes from a culture maybe where lawyers don't take the time to learn, to look underneath the hood. We look at the word "smart contract," and we freak out. And if we looked under the hood at what is it? What is it doing? Then, we can apply the old law much more easily because it's the conduct that's always regulated. If state lawmakers and regulators would do the same, we would be better off than making words like "centralized repository," which still hurts. It was like months of my life trying to figure out what that meant.

MODERATOR ROBINSON:
        Nick Szabo coined this term "smart contract" [in 1994]. Vitalik Buterin recently came out and said, boy, I really wish we would not have ever put these two words together.[3] Can you guys talk a little bit more about what is the problem with using this type of terminology? I think you've touched on it a little bit. And what are some of the potential pitfalls that may come along with that?

ROSARIO:
        I guess just from a practical standpoint, in terms of advising clients, to Carla's point, you know, lawyers sometimes don't do the work, which sounds odd, to really understand what's going on under the hood. If you just kind of accept a buzzword definition of this industry, which mind you, this industry is polluted with buzzwords. And there's, you know, a lot of people; I remember in—I think it was 2017—I started meeting people that didn't even know what bitcoin was, but they were all about blockchain. I was like, whoa, I mean, fine you can separate the two, but bitcoin came first. You should really probably understand the progenitor of this whole new ecosystem that we have to really appreciate what's actually new here, which I would argue is unique digital property that's not secured with a central kind of party in between. Now it's like community-created property. We didn't have that until bitcoin came along. In terms of advising clients and whatnot, if you haven't done the work, you could be giving them bad advice. And they're depending on you to make sure that you aren't doing that. And you won't even know—that's the worst part. You won't even know until something bad happens, which hopefully it doesn't.

MODERATOR ROBINSON:
        There's a ton of hype, misinformation, scams, fraud, all sorts of things in this space. And I noticed probably about a year ago, all of the sudden in my LinkedIn feed, I had all these people pop up, and they were blockchain experts, cryptocurrency experts, ICO experts, and, you would look at their profiles, and generally they were marketing folks who had maybe worked in the financial industry, maybe not. How do you separate what is real from what is hype, and what are the best sources of information for lawyers who actually want to learn about this area?

CANNON:
        In my space, that's a great question because when you're dealing with the regulators, there's really not a lot of law specifically covering initial coin offerings and cryptocurrencies. It can be difficult to advise clients, well, here's what you need

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[3] @VitalikButerin, TWITTER (Oct. 13, 2018, 10:21 AM), https://perma.cc/5S4R-RTMU.

to do. This will not get you in trouble. You know, move forward this way, and you'll be good to go. It's also difficult because, to be frank, a lot of the clients in this space are kind of difficult. They're like these super rich, 30-year-old multimillionaire guys in hoodies, and I'm not exaggerating. I mean, that's pretty much my client base in this space. They call up and they have a lot of energy and enthusiasm, and they're super smart and there's lots of things about them that are great and fun, but they say things like "we're going to structure this offering so that it's not regulated by the SEC." And you have to say to them, well, it doesn't really work like that. You can't really do that. And, by the way, you may have the CFTC who's interested in looking at you and potentially the IRS, so it's not actually just one regulator. Again, these people are super smart, and they often are; they're great entrepreneurs. They've had great success in other industries. They're really attracted to a lot of positive things about this technology, but they're not fans of regulation—nobody is—and I don't think they understand sort of that there aren't black-and-white answers.

I have [a] client who is getting ready to do an offering, and finally we got them to the point where they understood, okay, this token is a security, and we're going to have to register it because of the way this deal is structured. But we were saying to them it's also a currency, and the CFTC may be interested. And they just wanted to tell us, well, we don't want to deal with the CFTC, so just write the white paper to deal with the SEC. I'm surprised at the hours I spend having to explain we can't do it like that. And then they want to hear, well, point me to something that makes that clear. Show me, where is the law that says that? Well, and again you try and explain, well, we're looking at new technology and trying to slot it into old laws, and so what we've got are regulatory pronouncements and guidance. And they say, well, that's not law. Well, you're right, it's not law, but this is how regulators think about things. I find that kind of one of the real challenges in this space, sort of the newness and the grayness of it, and, frankly, the people who are in there. Because they're very kind of anti-authority and into challenging the status quo, which is wonderful, but it poses a lot of challenges.

REYES:
Yeah, but it poses a lot of opportunities, too, right. You think about how you engage folks like that? It's been easier now that I'm on this side. I get the best results when I cross the line, when I dig into their world. When I go back and read Bruce Schneider's "Applied Cryptography,"[4] so now I understand what the words that are coming out of their mouth mean. They have a long history. Blockchain didn't just appear out of nowhere for them. There's a long history both on the cypherpunk, the cultural side, going back to internet governance questions. It sprung out of something that it's helpful to understand in order to help you translate your legal concerns into their world in a way that makes sense for them. And we do this for regular companies. So, like, you're advising a really large enterprise client. We don't think twice about trying to, from the transactional perspective, explain how following the law was actually a business benefit rather than a business net cost. We don't think twice about trying to guide them on how to shape their product to meet it. How do we say yes in a lawful way rather than just saying, no, you can't do that. It's no different here. The difference is we just have to expand our language capabilities, expand our

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[4] BRUCE SCHNEIER, APPLIED CRYPTOGRAPHY (John Wiley & Sons, 2d ed. 1996).

understanding of their history because it's just different than the enterprise clients we're used to. And there's nothing wrong with that. It's just, frankly, a lot more work on our part.

But I do think there is often an expectation that they need to understand our world. Like, you need to understand the law and how it's going to come hammer down on you. They're like, yeah, well, maybe not. We're really tech-sophisticated. I'll just hide in decentralized land. If you want to get through to them, you've got to cross the line over to their history, to their shared experience and thinking broadly about things like regulatory entrepreneurship and explain to them, like, look, this world you're operating in is connected to the sharing economy and to Uber.[5] And when regulators look at you, they're like, *ahhhhh*, you know, and they're making those connections even if you're not. That I find is helpful.

MODERATOR ROBINSON:

There is a very strong underlying culture of distrust of government and strong libertarian values. I'm wondering, Nelson or Richard, if you could talk a little bit about the origins of this technology, kind of some of the predecessor and the Cypherpunk Manifesto and how we got to this point. I think it's a point that's overlooked oftentimes. There is this established, very strong culture that underpins a lot of work that's being done in this space.

TALL:

It's fantastic to hear from Carla and Rachel that their experiences are much the same as mine. When I'm presented by people, particularly the anti-financial crime side of things, or I should say the money-laundering regulations capture you, and you need to behave in a very particular way because otherwise you could get yourself in trouble or at worst or at best stick your head above the parapet. I remind them that one of the first payment systems was developed by the Knights Templar in the 10th century, and back in those days, if you wanted to transfer money across Europe, it wasn't very secure because there were bandits and all sorts of people who wanted your money. What you did is you went along to a hospital, because that's where the Knights Templar lived, and you'd deposit your gold or your currency and they would give you an encoded, encrypted piece of paper. You would then ride your horse however many thousand miles, and you'd arrive at another hospital, and you'd hand that over. They'd take a look at it. They'd say you've got the right code. Here's your money, subject to a commission. Does that ring any bells? So, it is really interesting.

A constant theme with entrepreneurs is that they don't want to be involved— they don't want the money-laundering regulations sort of to apply to them, and yet they do. My advice is really couched very similar to Rachel's, which is, this is what we think the regulator's approach will be. And if you're playing the game, and you're playing with—to use a cricket analogy, which I suspect will be lost on most people—if you're playing with a straight bat, then the regulator on the whole will give you a chance. If you get it wrong, those would say we don't think that's right, can you readjust? Hopefully that gets them an answer to the question.

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[5] *See generally* Alex Lielacher, *How the Blockchain Can Create A True Peer-To-Peer Sharing Economy*, NASDAQ (Jun. 21, 2017, 8:24 AM), https://perma.cc/4ZMZ-SA4Q.

ROSARIO:

 Just kind of building off of what Richard and Carla said, you know, this didn't fall from the sky. Aliens didn't just deposit it here and now we're trying to figure out what to do with it. There's a long [history], going back to what I said earlier about the onion getting bigger and bigger the more you peel. I used to think I understood money. I used to think it was pretty straightforward. Now, I'm not so sure. Because if you look at history, human beings have used all sorts of different things for money. The reality here in the United States, this isn't the first time we've had private money kind of at scale. Individual banks used to issue their own script. There were lots of bank runs. There was all sorts of problems. You know, there's all these instances of just kind of weird things happening with money. We're just so used to this system with the Federal Reserve, and it's kind of been in the past decades or however long the U.S. dollar being the global reserve currency of the world.

 With respect to kind of the cypherpunks and kind of that whole world, where this anti-government, libertarian kind of sometimes called cryptoanarchistic future, the idea of E-cash and digital money has been around for a long time. The way the internet was built, it wasn't really built with trust issues in mind. It was kind of a way to share information, and it's pretty good. I mean, the TCP/IP protocol, which kind of governs how often information is sent around the internet, came out in 1974. They kind of nailed that part of it, the information transmission, having security built in and having a native kind of value layer. There's a speaker who is very prominent in this space named Andreas Antonopoulos, and one of his main arguments is that cryptocurrency is the internet of value.[6] It's on the internet, but it's now this digitally native kind of value-transfer protocol that we can leverage. Nick Szabo, who is kind of suspected to be Satoshi Nakamoto[7] or part of the team that created bitcoin, was a part of that group. There's another guy named Wei Dai. I'm probably mispronouncing his name, but he had a prior E-cash proposal called B-money.[8] It's worth reading. These kind of, you know, computer scientists and cryptographers were thinking, well, how can I create something that I don't have to ask somebody's permission for? And we feel like we have that when we use our credit cards or Square or Chase QuickPay, but there's always somebody in the middle. I think we've talked about kind of the two successful use cases so far in this technology. One is cryptocurrency. It didn't exist before bitcoin came around. And the other is ICOs, a new way of fund-raising.

 Now, there's probably other use cases, how smart contracts are going to get integrated and other things that have come about. But like Carla said, remember, be mindful of this history. I think it's *Bitcoin Magazine* has a four-part series on some of the, I don't know if they call them the founding fathers of this movement. I know I'm very cryptocurrency heavy, but as odd as it sounds, that's the most apparently new thing to me. As soon as somebody's like, oh, well, just put this on a blockchain, my

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[6] ANDREAS ANTONOPOULOS, THE INTERNET of MONEY VOL. 1 (Merkle Bloom LLC 2016) ("Bitcoin is not just money for the internet. . . . Bitcoin is the internet of money.").

[7] Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN (Oct. 31, 2008), https://perma.cc/AC7R-SY95.

[8] Wei Dai, *B-Money*, CYPHERPUNKS (Nov. 26, 1998, 15:33), https://perma.cc/89ZE-XVCH; *see also* Aaron Van Wirdum, *The Genesis Files: If Bitcoin Had A First Draft, Wei Dai's B-Money Was It* (Jun. 14, 2018), https://perma.cc/6E95-92N2.

first question as a computer scientist is, well, why don't you just use a distributed database? What do you need a blockchain for? It's slow. It's redundant, and we don't really know how it works. We think we do. And it doesn't scare.

CANNON:
    What I think is interesting, and I hate to use the word, but it's almost kind of cute, is when you deal with the SEC in this space, and I tell my clients if you're going to do an initial coin offering, you can pretty much guarantee you're going to get a subpoena. Even if you're dotting every "I" and crossing every "T" and budgeting a way for legal counsel and really trying to follow all the rules and do everything right, it's just the lay of the land because the SEC feels a responsibility from Congress and from all the press and everything to really kind of be in this space and make sure it doesn't explode into some horrific fraud that spins out of control. So, when my clients get these subpoenas and then I call the SEC enforcement attorney, it's so interesting to me the types of questions that they're asking because you can tell that they are really, genuinely trying to understand the technology. They're genuinely trying to understand the offering and sort of what the goal is and what the people who are doing the offering are hoping to accomplish. You almost get the sense that they feel kind of the weight of their responsibility. And I don't mean to sound overdramatic, but I think they're really trying to be very careful about the cases they go after because they don't want to look stupid. They don't want to misunderstand the technology. And they also don't want to be seen as holding technology back. It's just kind of interesting when you sort of deal with the regulators who you sort of have these stereotypes about straight-and-narrow guys in ties, and then you deal with the clients who are sort of on the other end of the stereotype spectrum. There's actually a lot more respect from the regulators than you might think. And at least in my experience, there really is a genuine attempt to give the people who are coming up with these kind of new forms of fund-raising the benefit of the doubt. I'm encouraged by that, and I'm hoping that will sort allow these two worlds to work together a little better than they historically have.

REYES:
    I think you had also asked, like what could you do to learn, like resources? So there a bunch of online free courses, right. Coursera has a good course.

ROSARIO:
    Yeah. Udemy.

REYES:
    Yeah. I feel like OpenLaw has a training center or maybe it's ConsenSys. And I know R3 opened this, Academic Center for Excellence or something. But if you're looking for—and that's to tell you about the technology and maybe how to use it. But if you're looking to steep yourself in some of this historical stuff, I also for the technology highly—I do, it's crazy coming from a political-scientist-turned-lawyer-turned-legal academic, but—I recommend "Applied Cryptography" by Bruce Schneier.[9] It's really approachable and digestible, and it helped me understand the

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[9] SCHNEIER, *supra* note 4.

underlying technology a lot. And then I also just recommend if you haven't read Lawrence Lessig's "Code and Other Laws of Cyberspace,"[10] read that. It's foundational. Folks in this space pick up on "the code is law,"[11] but they didn't actually read the whole book. So, read that so you can talk to them about that. I also recommend Jonathan Zittrain's "The Future of the Internet and How to Stop It."[12] It gives you a sense of where folks in this space are coming from on the technology side and why they're concerned about privacy and sort of anti-establishment. Most of them really aren't anti-establishment if you talk to them and look under the hood of what their real concerns are, but it comes across that way and to understand why. Those are good pieces. Also, Wu and Goldsmith. I don't remember the name of the book.

ROSARIO:
        Oh, "Who Controls the Internet?" 2006.[13]

REYES:
        Yeah, that's a good one too.

ROSARIO:
        Just one quick point on kind of software and computer code generally. It's a bit of a trick from programmers that this is, oh, well, you couldn't possibly understand the computer code or whatever. I can confidently tell you that's not true. If you know how to write a recipe or follow a recipe when you're cooking at home, you can get to the point where you understand code. It may take a little work on your end and explanation in working with your clients and whoever else, but there's kind of a mystique surrounding software generally which drives me nuts.

MODERATOR ROBINSON:
        You mean there's an industry that hides behind jargon and makes it seem way more complicated than it really is?

ROSARIO:
        Well, the funny thing is, when I was in law school and I was outlining my classes, I usually kind of outlined in code, so to speak, because that's just kind of how I was thinking. You know, lawyers kind of follow code. That's what the law is, right? It's a set of situations—you know, kind of programs or particular things that can occur if certain conditions are met. That's all computer and code is. You're trying to solve a problem and do a particular thing, and you give it some instructions, and then it doesn't work the way that you think it will, and then you have to fix it. And you usually never do actually fix it, but you just keep marching on.

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[10] LAWRENCE LESSIG, CODE, AND OTHER LAWS OF CYBERSPACE (Basic Books 1999).
[11] Lawrence Lessig, *Foreword*, 52 STAN. L. REV. 987, 990 (2000).
[12] JONATHAN ZITTRAIN, THE FUTURE OF THE INTERNET AND HOW TO STOP IT (Yale U.P. 2008).
[13] JACK GOLDSMITH & TIM WU, WHO CONTROLS THE INTERNET? ILLUSIONS OF A BORDERLESS WORLD (Oxford University Press, Inc., 2006).

MODERATOR ROBINSON:

So, let's step back a minute from ICOs and fund-raising and talk about other big-picture legal challenges that you see as this technology continues to develop.

REYES:

There's a bunch of them. The ones I'm looking at, right, sparked by a tiny little comment in the DAO report that people don't notice and don't pay attention to, but the SEC called the DAO an unregistered business association. What that means is they think the DAO's a partnership.[14] That's the only one it qualifies for. So, if you have decentralized organizations that don't do anything else, the default entity is a partnership. And that's really bad news for the participants when bad things happen because the default penalty rule is joint liability for all things, right, personal liability at that. I've been looking at how can participants in DAOs organize their enterprises in ways that get them out of that penalty default. And there's a little bit of work by folks at Florida State University, Shawn Bayern,[15] and Lynn LoPucki[16] I think at UCLA that say, look, it could be an LLC, and here's how you would do it. It could be a corporation maybe, and here's how you would do that. But both of those, from my perspective, require filing documents with the state, and many of the folks who create DAOs are not going to do that. They just think that's the whole point is to get out of the middleman, right.

And so what could they do that wouldn't require that? I make an argument in a paper called "If Rockefeller Were a Coder" that they could form a business trust.[17] And that in many states in the United States that could happen at common law, and they wouldn't have to file any documents. And, in fact, I know it can happen in other countries without filing documents as well. If they do that in the United States, they'd be treated in many states as a corporation with the rights and responsibilities of corporations. And then the question becomes, if you have a fully-coded business enterprise that doesn't have a physical presence, what do we do with all the rest of the corporate laws that apply now that this thing has the rights and responsibilities of a corporation?

Similarly, professor George Geis at the University of Virginia, looked at what happens when—this is what I mentioned earlier—when corporations do start issuing their shares through corporate share registries and blockchain technology, what happens to the rest of corporate law? I don't know if you all know where that law came from. But there was a case called *In re Dole* where there was a settlement in the case, and they put out a call for claims, and more people claimed a share in the settlement than there were actual shares in the company.[18] And no one could figure out who actually owned the shares. They went through all the process, and in the end, they had no idea who owned the shares for real because of the way those share registries work at the moment. The judge, in a footnote of the opinion, said, oh, wouldn't it be great if we had blockchain technology for this. We could know who

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[14] *See, e.g.*, Randolph A. Robinson II, *The New Digital Wild West: Regulating the Explosion of Initial Coin Offerings*, 85 TENN. L. REV. 897, 940-48 (2018).

[15] Shawn Bayern, *Of Bitcoins, Independently Wealthy Software, and the Zero-Member LLC*, 108 NW. U.L. REV. 1485 (2014).

[16] Lynn M. LoPucki, *Algorithmic Entities*, 95 WASH. U.L. REV. 887 (2018).

[17] Carla L. Reyes, *If Rockefeller Was a Coder*, 87 GEO. WASH. L. REV. 373 (2019).

[18] In re Dole Food Co., CV 8703-VCL, 2017 WL 624843 (Del. Ch. Feb. 15, 2017).

owns what at any specific point in time.[19] So then legislature changed the law, and now you could do that under certain circumstance. Professor Geis at University of Virginia has sort of followed that out.[20] If we really have traceable shares, what does that do for the balance of power in corporations and who makes decisions? Could shareholders have more direct input now because they don't need to go through a bunch of the hoops that corporate law requires? What happens to shareholder litigation, does that change in its nature? And in thinking through those ripple effects, I think we're going to see that significantly.

I also think on the SEC side, right, the SEC just figured out what they think about ICOs. What are they going to do with stuff like Metronome, right, which is a smart contract that issues its own currency.[21] And then you buy it from the smart contract, and the smart contract holds the funds. Like, what are you going to do with that? Do you even know Metronome exists? It seems to me that there's going to be ripple effects for a long, long time. There will always be gray areas for you to investigate.

ROSARIO:

If I may jump in, just kind of some background of what Carla was saying at the beginning there with respect to DAOs. A DAO for those that don't know is a Distributed or Decentralized Autonomous Organization. What the heck does that mean? So as I was saying, computer code is just a set of instructions, and you can think of those as rules that the computer understands. And so bitcoin came out, and the whole purpose of bitcoin was magic internet money, and that was good and people were happy. And then Vitalik Buterin, who we mentioned earlier, was like, oh, well, what if I could do something more, and he built the Ethereum blockchain. The focus there was on smart contracts. And as Carla said, you can think of those as scripts. They're not really smart, and they're not really contracts. They could be, but not by default.

And so the Ethereum blockchain was built, and it went live in 2015, I think. And then some founders that were involved in the founding of Ethereum and some other people thought, well, what if we have these smart contracts, which is one of the main purposes of Ethereum, and we can put out these scripts to make sure that things occur the way we want them to. What if we created an investment fund, and the way we decide whether or not a particular project receives funding, we'll just put the instructions into this DAO, this smart contract, and that's how we'll make decisions. And we can all have voting powers. A smart contract can be something as simple as like ten lines of code, literally just like—you know, I've got this notebook here. It could be just that. It could also be thousands of lines of code. So the DAO itself was very long. And they called it a DAO, which we probably should have called it something else, and they also called it an investment fund. And then anybody that's written code will tell you there's always bugs in it that you didn't anticipate,

[19] *Id.* at *7 n.1.

[20] George S. Geis, *Traceable Shares and Corporate Law*, 113 NW. U.L. REV. 227 (2018).

[21] *See generally* J. Dax Hansen, Laurie Rosini, and Carla L. Reyes, *More Legal Aspects of Smart Contract Applications: Token Sales, Capital Markets, Supply Chain Management, Government and Smart Cities, Real Estate Registries, and Enabling Self-Sovereign Identity*, PERKINSCOIE (Oct. 2018), https://perma.cc/Y8TZ-FXE2.

and a hacker found one of those bugs. And at the time, a third of the total ether, which is the cryptocurrency native to the Ethereum network, was tied up—the value of it was tied up in this DAO—and the hackers started draining it. And so then there was kind of an existential crisis in the community. They ended up forking, which is when one blockchain with one transaction history splits into two blockchains. And at the point they split, they have a common shared history.

MODERATOR ROBINSON:
          Why does that happen? I think this is one of the things that many folks don't know. Why do we have these splits?

ROSARIO:
          Well, in this case it was a philosophical difference on how to deal with this hacker, this kind of crisis moment. You've probably heard or read that blockchains are immutable. That's a very dangerous word. Nothing is immutable. And they are tamper evident, and transactions that are at the very beginning of the bitcoin blockchain, you're not going to change that transaction data unless you're like the NSA or something because it's just computationally expensive, so they trend towards immutability. But immutability is not just with respect to the information in there. It's kind of a philosophical thing in that, you know, you shouldn't be able to change information transacted on this network. Since a third of the value was tied up in this DAO, a large part of the community thought, you know what, this is a hacker. We didn't intend this. We're going to break off. And that's the Ethereum network as it exists today. A minority part of the community said, that's not right. This goes against kind of this philosophical principle of you shouldn't be able to change this, this code is law kind of misunderstanding, and that's Ethereum Classic.
          So, these forks happen actually kind of often. That's the most prominent one. Probably Bitcoin Cash is the other prominent one. And, you know, all these things are open-source projects, which we could have a whole symposium on that, but that just means anybody could see the code that makes this work. We could, during the symposium, take the bitcoin code and just create our own Symposium Coin or whatever, and it would be exactly the same. And no one would use it, and today would be the only day in its existence. But, when you have this kind of sharing community that has, shall we say, divergent kind of from the mainstream views about how human relationships should be organized, this stuff should be expected.

CANNON:
          And, actually, if I can just add the criminal law gloss on that. So, the stated reason for the fork is that some people basically wanted their money back from the hack. And some people said, well, as a purist matter, this should be immutable, and we should just build a better mousetrap, and we flubbed up, so it is what it is. But people in my world think those people who didn't want their money back, those were all the criminals who are using cryptocurrency and don't want to be caught. Because it's just not really a natural reaction, no matter how rich you are, to have a bunch of money stolen and say, you know what, the code wasn't perfect. We'll just keep on going. So that's what I think the hard-line criminal folks think.

ROSARIO:

Yeah. There's definitely people that think the people that wanted the money back wanted it back for fraudulent reasons. Because part of the selling point of this is like, oh, you know, you can trust the code. You trust the people that develop these things, and so your money is safe. And so when there's a situation like this, the value of the money goes down. A lot of times you hear people talking about, oh, well, all the bitcoin mining operations are in China, and if they just wanted to do whatever they want, they would. Well, maybe. But they're also economically incentivized to not monkey around with the transaction history because then the value of their bitcoin, which they're receiving as a reward for mining, would go down.

MODERATOR ROBINSON:

So we hear a lot about, and I think less so recently, this idea of this is a trustless technology, or this technology replaces trust. I know that that phrase has kind of in some ways fallen out of favor, but I still see it written in a lot of articles. Is this a trustless technology? Have we figured out a way to transact business with one another without having to trust anybody or anything?

TALL:

One of the sort of main features, and again, it's something that comes down to sort of the code war to entrepreneurs who are coming through with, you know, somehow to get rid of an intermediary, and this intermediation is a word you hear frequently, bypass the banks, do this, et cetera. Well, I pay bank charges to Barclays, yeah, because that means I have Barclays' infrastructure around me. So if my checking card gets swiped, as it has been, then I can phone up Barclays and say I was nowhere near Pune, India yesterday—and, you know, I choose that randomly— they will give me my money back. If I had some skin in the game in the DAO, no reason to give me my money back.

And if you think sort of about the attraction of human relations, I mean, a very, very interesting point came up at one of our firm's conferences on Tuesday where a card company was talking about sort of financing and stuff like that. And they said it was utterly deliberate that they maintained relationships, personal relationships with banks, yeah, because when it goes bad in an economic cycle, they know they're going to have somebody by their side. Technology that gets rid of people having to deal with each other, and you don't have to look somebody in the eye, you don't have to shake their hand, et cetera, that all sounds brilliant. But when it goes bad, where are these people? You're going to talk into a computer, "Help. I'm broke. Please, can I have some money?" No. I think there's a huge danger, and those of us of an age, particularly with teenage children and older where we've had to point out, "Please, would you converse with me. You're sitting next to me. You don't need to send me a message. You can actually talk to me." I think that that's one of those things where actually are we in control of technology, or is the technology in control of us? And I would much rather have a personal relationship with a banker, I mean, as good as you can at least on the commercial side. That's really, really important because they know you. They trust you. And hopefully when you go into a five-star begging, which let's face it, that's what it is, they're going to say, yeah, actually, we've been through this together in the past. We'll do it again.

CANNON:

The fact of the matter is, and we've all sort of talked about it, someone really is in charge of this technology. And if you participate in a blockchain, I mean, there's a coder who coded it. There's a developer. There might be a miner. And if something goes wrong and you go see a lawyer because you want to file a lawsuit, I mean, if the lawyer's any good, they're going to work backwards, and they're going to find those people to sue them. I think one of the interesting questions that's kind of coming up in this space is do those people now have fiduciary duties? I mean, if they have developed a blockchain and it accepts money from people, and they're sort of holding those peoples' monies, what sort of duties do they have, and who has the duties?

TALL:

Just to add to that, hopefully add to that, is, you know, tortious duties, you know, sort of the classic Donoghue and Stevenson rotten snail in the bottom of the ginger beer bottle.[22] I don't know if it's as famous over here as it is in the U.K. But somebody in Glasgow bought a bottle of ginger beer, took the lid off and then drank it, and it had a rotten snail in it. And that individual then sued the company that made the ginger beer, not the snail, and it was a big case. And the company's argument was, well, you know, we didn't know he was going to buy this bottle, and so I'm not particularly interested. The great phrase from one of the judges was, well, "Who, then, in law is my neighbor?" Yet, to whom do I owe that duty?[23] So it's not just the fiduciary duty, but actually it's that tortious element. And also as the value moves, actually is there a contract between the individual using and the developer?

REYES:

I'm actually working on this issue of fiduciary duties now in a draft paper because I'm actually really concerned about the tenor of the argument.[24] So the argument goes like this: If you're an open-source software coder who creates the system, you might have a fiduciary duty for simply the act of coding. And then subsequently, maybe the miners do, too, because they confirm the transactions. I am concerned because the argument doesn't distinguish between blockchain coders and open-source software coders generally. I do not want open-source software coders, generally speaking, to have fiduciary duties. It will stifle the open-source software DIY community in ways we do not appreciate at the moment. And I'm just super concerned about that argument for that reason in particular, and I'm working on a project that sort of lays that out. Because we use things like Apache in blocknet space systems all the time. And those coders, that's the open-source coding software community, we don't go after them with fiduciary duties. But there does not seem to be a distinction in this argument between, oh, it's because it's block chain versus open-source software generally, and I'm nervous about that. And you already see in the blockchain context the adverse effect. So there's lawsuits—and it's a bad

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[22] Donoghue v. Stevenson (1932) SC (HL) 31 (Scot.).

[23] *Id.* at 44.

[24] Carla L. Reyes, *(Un)Corporate Crypto-Governance*, 88 FORDHAM L. REV. _ (forthcoming); *see also* Carla L. Reyes, *What Public Blockchain Protocol Governance Can Learn From Corporate Governance*, COLUM. L. SCHOOL BLUE SKY BLOG (May 7, 2019), https://perma.cc/7SR9-Q2GK.

example, actually, because I don't feel bad for the Nano guys. But the argument is, look, you didn't rescue fork. You should have rescued fork, and since you didn't, now we're suing you. That makes me super uncomfortable for the open-source software community generally. That's a code choice—I mean, that makes me uncomfortable. And maybe not as much in the Nano case, but the idea of that being an argument that we can make going forward makes me uncomfortable.

MODERATOR ROBINSON:
        Carla, is that discomfort based on the view that if you're writing code, you're just making a tool, and how that tool is used we shouldn't impose liability backwards, or do you have a broader argument?

REYES:
        It's that a little bit. It's a concern about innovation. So the internet came out of open-source community, and a lot of the applications that run on the internet, your e-mail protocol, I just—it's a concern about fiduciary. Fiduciary responsibilities are reserved for a certain subset of activity, and coding isn't usually it. It's when you entrust someone who has power over your funds, maybe not funds, but when you trust—anyway, the specific definition, I don't think open-source coders, generally speaking, fit it. That's all.

ROSARIO:
        Incidentally, I'm actually working on a paper with another attorney who's a former developer, and she's an adjunct law professor at Wake Forest, on specifically public blockchains like Bitcoin and Ethereum and whether those developers should be fiduciaries.[25] Because it is an argument that's getting a lot more play. I think there's a lot of nuances that aren't really appreciated if you are not familiar with open-source software. So, typically, most of the software you interact with—well, it depends on how you define "interact"—is developed by a single company, working with other companies. So we know who's responsible for that. But there is other software, and it's just kind of maybe the nature of programmers and the fact that they like puzzles and whatnot and trying to fix things and tinker, where there's just communities around the globe that contribute to that software. And so this idea of it's odd I guess maybe if you haven't really been steeped in it to think that people would spend their time and sometimes even their money to contribute to something that there isn't really an immediate economic benefit to them.
        But that really is part of the ethos of this community and other similar communities. I mean, most of like the mega corporate servers that run the internet and other big companies, they run Linux which is an open-source software program, that was just kind of somewhat anarchistically built up. Now, of course, there's a strong founder there in Linus Torvalds, and I guess if you wanted somebody in control, that would be the case. But here, in this particular space, putting aside ICOs and maybe blockchains for enterprise and those things, but in terms of, like, cryptocurrency and organizing human behavior without knowing who you're interacting with, you know, it's not clear. A lot of times people don't even know each

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[25] Raina S. Haque, Rodrigo Seira Silva-Herzog, Brent A. Plummer, and Nelson M. Rosario, *Blockchain Development and Fiduciary Duty*, 2 STAN. J. BLOCKCHAIN L. & POL'Y 139 (2019).

other, or they just know each other from their Twitter handles which aren't representative of their real names. It is different somehow.

MODERATOR ROBINSON:
       So, if such a rule or law was implemented, is enforcement of such a rule even possible? Is this a practical solution, or does this just create more problems down the road?

ROSARIO:
       I mean, blockchains are decentralized; people are not. Unless you're in interstellar space, the SEC or the Southern District of New York U.S. Attorney can find you. Now, Ross Ulbricht who was the Dread Pirate Roberts that ran the Pirate Bay, which was basically like illegal eBay, he took a lot of steps, and they found him.[26] So is enforcement possible? Sure. Is it easy? I don't know.

REYES:
       And they're concerned enough about it that they're quitting, right? There's a developer in Japan who's, like, I'm out because I think under Japanese law I might be held liable. I can't risk it. I'm out. So, the developers themselves are concerned enough about it that it's already stifling the innovation that we don't want to stifle.

ROSARIO:
       Yeah. Vlad Zamfir, who's one of the co-founders of Ethereum, he doesn't write code. All he works on is kind of the theoretical underpinning to try and scale the Ethereum blockchain. But he's terrified of writing any actual code because of potentially being liable for something that he doesn't want to sign up for.

MODERATOR ROBINSON:
       So what is the better alternative? What is the better way that we could do this?

ROSARIO:
       I think we haven't kind of fully fleshed this out yet, but there needs to be some sort of factors that distinguish—I always think of it in terms of control. If there's a team that is really truly in control of this project, and, oh, it's decentralized or whatever, then I think it's an easier question. It's more so I'm concerned about kind of the lightning-in-a-bottle situation where it's people just kind of collectively getting together, and maybe there's a leader, so to speak, but they aren't necessarily the ones that, you know, what they say is gospel. So I'm not sure exactly how you articulate that in terms of a set of factors. But my suspicion is there's a way to distinguish between those situations.

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[26] Press Release, U.S. Attorney's Office, Southern District of New York, *Ross Ulbricht, A/K/A "Dread Pirate Roberts" Sentenced in Manhattan Federal Court to Life in Prison*, No. 15-135 (May 29, 2015), https://perma.cc/H2V6-3ZTQ.

REYES:

I tackle this from a broader [perspective]—like, I take a step back. To me, this argument about fiduciary duties is a bit of a distraction, frankly. For me the bigger problem is governance of public blockchains more broadly, and it stems from a concern. I'm a coordinator of the Dynamic Coalition for Blockchain Technologies at the United Nations Internet Governance Forum. It's a lot of words, but basically I go to UNIGF every year and listen to things about internet's governance, and then I read things like Jonathan Zittrain's "The Future of the Internet and How to Stop It," and I see the parallels between the way the internet grew up and the way blockchain protocols are growing up. And I am concerned about sort of replicating the architecture that allows things like Cambridge Analytica to happen, to happen with our money, on the blockchain side because we didn't think about the architecture, the governance of the architecture. And so my paper takes a step back and looks at the bigger governance problem and then notes within that, like, one of the solutions being suggested is this idea of fiduciary duties for software developers, and that I think that's scary and not as great an idea as the press has made it sound. If blockchain protocol communities don't do something that looks more formal, more recognizable, it's coming. That stuff will be their future.

And so I argue, and it ties in with "If Rockefeller Were a Coder," that you could look to corporate governance models as a way to structure a private ordering, sort of a formal governance process, for the community where you think of foundations and maybe important founders as monitors and gatekeepers, right, the way you think of lawyers and sort of accounting firms as monitors and gatekeepers in the corporate world. And you can think of the miners as directors really, and you could think of shareholders as the token holders. So, when you follow those lines as they fall out, and if you think about corporate governance and the way corporate laws work, a lot of it is there are default rules, but a lot of it is opt in. In Delaware you can say—there's a law. You can just say we don't want to use—in terms of fiduciary duties, we don't want that to apply to us. It's based in contract. So you can privately order the level of duties that you want, which, by the way, is what open-source software projects do now. They have Codes of Conduct and Articles of Formation and such that they follow for each project, and you can see that in Hyperledger with The Linux Foundation.[27]

The argument is, look, I know it's saying using corporate governance model for this community sounds weird because that's like the opposite of what they would want to do, but actually it's steeped in open-source software tradition. And it's not that far away from what you might expect. So, that's my prescriptive recommendation. But I do it by taking a step back and saying, look, there's a broader problem here. This discussion about fiduciary duties is a distraction. Stop it. If you follow the corporate law lines, there's no way that coders have fiduciary duties. They don't. If anybody does, if you follow the corporate law analogy, it's the miners because they actually make the decisions. That has its own problems, and they don't like it when I say that. They'll tell me, no, I plug the machine into the wall and I walk away, right. It's a passive activity, which is not entirely true. But that's the argument.

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[27] The Linux Foundation, *Hyperledger Project Charter*, HYPERLEDGER (Jan. 22, 2016), https://perma.cc/7CQ5-UQ63.

TALL:

     Obviously, you can go through some regulation top-down approach and start imposing sort of existing systems and things like that. One of the big issues that I think we face in the Western World is actually the financial knowledge of the average consumer because if you think about what we're trying to prevent with these systems, we're trying to prevent harm. Now, it's easy or relatively easy for people in this room and people who get this type of education to look at something and say, well, actually, I think that if I do that, then I'm exposing myself to certain risks. With risks come reward, but we can make an educated guess.

     If you think about how consumers behave, herding, fear of missing out, and all that sort of stuff, and I would venture the spike in bitcoin value was as a result of that, actually should we be trying to educate the consumers within each of our jurisdictions, you know, the 67 million people in the U.K. and I think 300 million in the U.S. and actually say to them, look, this is really dangerous, yeah. And if you do this, it's unregulated. It doesn't have any systems. There is nobody to come pick up the pieces. There's part of me that actually sort of says that any financial system that pays above a certain return should be completely unregulated. Because instead of trying to regulate individual products, what you do is you say anything with a three-percent or less return, the government will back that up. If you go outside that and start gambling on horses or the less-certain bitcoin, then you're on your own. So, yeah, I'm not sure that's going to catch on but . . .

MODERATOR ROBINSON:

     So, what you're saying is we need to educate people that just because Floyd Mayweather tells them to buy a cryptocurrency, that doesn't mean that they should buy it?[28]

TALL:

     Exactly. I mean, again, we had a very interesting conversation with a fund manager from Silicon Valley. I can tell he was from Silicon Valley because he had a funny beard and really smart glasses, and, yeah, he was suntanned. And we were talking about it, and he was having lunch with somebody, I think it was in London, and they were talking about cryptocurrencies essentially. And he said the waitress seemed very, very interested in the conversation, and then eventually came along and said, oh, that's really interesting what you're talking about because I've got all these investments in cryptocurrencies.

     And those of you who've watched *The Big Short*, remember when the guys went from New York down to California and were driving around and meeting people with modest jobs and modest incomes. People with these modest jobs who were earning $50,000, $60,000 a year had three or four mortgages—three or four different properties. I mean, it's just complete lunacy. And this person, the gentleman that I met, the fund manager, said that's when he knew this had all gone too far. Because you've got John Doe and Jane Doe—we don't that have that in the U.K., [and] I think

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[28] Press Release, U.S. Securities and Exchange Commission, *Two Celebrities Charged With Unlawfully Touting Coin Offerings*, No. 2018-268 (Nov. 29, 2018), https://perma.cc/65QN-TZQB.

we should have them—but they're walking around in debt sitting on assets that most of us would consider to be completely toxic.

MODERATOR ROBINSON:
        We've talked about "trustless" as a term a little bit. We've talked about "immutable" as a term a little bit, and you can dig deeper into those two or go a different direction with this. But what is the biggest misconception about distributed ledger technology that you would like to correct or that you frequently hear?

CANNON:
        I think the biggest misconception is that it is a good idea for everyone and for every company. And it certainly has a lot of wonderful advantages, many, many wonderful advantages. I don't think it's going away. I think it's the wave of the future, absolutely. You know, Ginni Rometty touts it as the next internet. She's the CEO of IBM. I think she's absolutely right. But I don't think it makes sense for every business. I think for a lot of small businesses, it's just purely a bad idea. I think it's great for a lot of global companies who have to track things all over the world, but there's kind of a wide gap in between there. And it's interesting talking to my corporate clients because most of them, frankly, are looking at whether it makes sense for them to start investing in this technology. We always, at the firm, kind of sit down with them and talk about a lot of the pros and cons of it. And there are definitely some pros, and it's absolutely the right way to go for some companies, but there's also a lot of cons including the uncertain regulatory landscape, sort of including all these questions about who's going to be liable when things go wrong. It can be very expensive to properly implement. There can be all sorts of problems with it. Maybe it will get to a point where it's like the internet and you are sort of like a troll in a hole if you don't use it and don't know about it. But we're definitely not there yet, and I think it's definitely not right for all companies.

TALL:
        If you were a James Bond movie, there is always a buddy who seems to win temporarily and steals the missiles or takes control of a governmental asset of some sort, but James Bond always wins. I just see one thing James Bond's not going to win with the blockchain, if he gets involved that is. It's the immutability. You've got sort of quantum computing, which my eldest son is at Oxford engineering, he told me about it. After about 30 seconds, my eyes glaze over, not because it's boring. It's because I simply don't understand it. I think you mentioned earlier, Nelson, nothing is immutable. There has yet to be a code that has not been broken, and I think that's the biggest fallacy, and that's what is continually pumped out around any sort of blockchain application is that it's completely immutable. It might be at the moment, but it won't be in the future.

REYES:
        The immutability is a big one for me too, particularly that smart contracts are immutable and can't be called back. No. It depends on how you design it. So, you hear ICO folks often tout like once we've released the tokens into the world, we can't claw it back. Yeah, no, that's not actually true. It depends on which standard you use

and how you design it at the beginning. I know of ICOs where people on the back end could just decide to erase the token, right. They're not locked in any way, shape, or form. They just decide one day the project that we raised the money for didn't work, so we're calling it back. They can do that, but it's a design tradeoff, right. And I think the other one is just that it's—the other pet peeve, I have a lot of pet peeves I feel like today—it's this idea that it's so new and shiny that we can't draw on anything from before. It's not that new and shiny. It's not.

And when I teach my students about AI, we start with the law of the horse argument, right, between Easterbrook and Lessig, like way back.[29] We don't start with new and shiny pronouncements like the DAO report. We start at the beginning. And it's the same way you would approach any other legal issue if you're talking to a client about any other product, you start at the beginning, and it's the same thing. It's not so shiny and new that we have to go figure out an entire new way to practice law.

ROSARIO:

Yeah, I think these are all very good points. I think what Rachel said was fantastic. This is not a technology, as it stands right now, that is a good fit for every single use case and every single company. I think in terms of kind of misunderstanding what's going on, you mentioned trustless earlier, and I think of it as a trust technology because it changes the trust equation in the digital world. It used to be that you couldn't really trust information on the internet when it was in transit. And unless you were, like, a hardcore nerd that used hard cryptography, you know, PGP-signed e-mails and you probably e-mailed your 12 other friends that did that, and that was, like, it. There's a reason this technology is a compilation of existing technologies that have been around for decades in a new and interesting way to organize human behavior. At least that's the way that I think about it, and that's the way we teach it in class. And in many ways, it's an evolution of human development technologically of how do we manage trust and this getting rid of intermediaries. And now we have a way to kind of push the trust equation out to how information gets into the internet, and you can be fairly confident in certain implementations of blockchain technologies that the information in transit on the internet you can be secure in the knowledge that nobody has tampered with that.

But then the problem becomes, okay, what about when the information goes in? And that's where things start to get real weird, and you start talking about Internet of Things and there's this concept of oracles. Think of like a weather sensor that's connected to a blockchain network that says it's 75 degrees out on this day, and people could use that data for particular things. IBM is actually exploring a pilot along that with respect to I think crop insurance. But, you know, we went from not trusting things in the middle to now, okay, we can't trust; we can trust the information, but that doesn't mean it's truth. Garbage in; garbage out. Maybe that's kind of the biggest thing. These are truth machines. There's actually a book, which I haven't read it yet, but I respect the authors that wrote it, Paul Vigna and Michael

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[29] Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. L.F. 207 (1996); Lawrence Lessig, Commentary, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501 (1999).

Casey, it's their second book about this space. It's called "The Truth Machine."[30] It's garbage in; garbage out. If the information that goes in is bad, once it's in, you're never going to get it out. So, the trust has been pushed kind of to the edges.

TALL:

It's really interesting you mentioned about IBM sort of putting temperature or meteorological data into the blockchain because if you go back—I'm a very keen student, and one day I will write my book, which will be on the history of financial crises—but if you go back to the collapse of Enron, one of the products that Enron was a huge innovator for was weather derivatives. And what they would do was sell basically contracts for different insurance products to shovel makers. Basically if it didn't snow, you got paid out for your shovels. Now, it strikes me, which, of course, again kind of alludes to that we're looking for the next financial crisis actually, if we're able to bundle risk, because that's what we're talking about, much more quickly into a nice, like, little capsule, then actually surely we need to watch where that risk ends up. I find it absolutely fascinating. I'm sure the people at IBM thought I've got this really new brilliant idea, yeah. It's been done before. And, again, that didn't necessarily cause a financial crisis, but it certainly caused a crisis at Enron as I'm sure many in the room remember. But I find these products absolutely fascinating.

MODERATOR ROBINSON:

So we haven't explicitly talked about the global reach of these platforms and the unique challenges that come along with that. Is it actually possible or feasible or should we be trying to approach regulation from a national level, or is there a broader approach that's necessary?

TALL:

Again, I think this comes down to sort of governance. I mean, governance serves two purposes. Number one is to relieve us of our money so that they can build stuff. I came into Chicago very early this morning because my plane was delayed, and there's some great new roads, great tarmacking. I was particularly alarmed by the man driving a steamroller, you know, the one with the big roller, towards us at high speed. But that's paid for by tax, so thank you taxpayers. I actually pay tax in the state of Illinois as well. Now, so there's that. The other thing is it's the protection of harm to our citizens, and they do that in a number of different ways, defense, medical assistance, and all that sort of stuff. But equally what we want is their citizens to build sustainable financial futures. And if you've got your citizens basically playing the lottery online on a daily basis with all of their savings, then that's never going to happen.

And so actually I think, yes, on the national level, it is possible. And if you look at some of the—again, I'm really dangerous talking about the United States and legislation because I've never practiced law in the United States and know very little about it really—but there are certain laws that capture not just the concept of somebody who is a U.S. resident and within the boundary of the U.S. but somebody who is a U.S. citizen. So, it doesn't matter where that U.S. citizen is, the law still

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[30] MICHAEL J. CASEY AND PAUL VIGNA, THE TRUTH MACHINE: THE BLOCKCHAIN AND THE FUTURE OF EVERYTHING (St. Martin's Press 2018).

applies to them. Now, we've had certain cases in the U.K., and I've had certain clients who may have, allegedly, according to the FBI, committed misdemeanors or felonies, whichever one is worse. They would have gone to jail for a long time had they been guilty and tried. But when that first came to my attention, the question was do you travel to the United States? Oh, yeah, frequently. Well, my advice was to stop because you are going to get your collar felt. If you go through the airport, you're going to trigger something. So I think it's perfectly possible for governments to regulate on a national level because they can say, well, it happened during their jurisdiction. But then they can take it further, and say, well, actually, if you do this to one of our citizens wherever you are—look at the law of piracy off Somalia, it's completely extra-jurisdictional—then actually, yeah, you're in trouble.

REYES:
        I'm a fan of national versus international regulation because the likelihood that you're going to focus on conduct rather than the technology is greater if you stay at the national level. So what national governments can regulate are the conduct of the people within its borders. At the international level, we're talking about regulating the technology as the technology, and for the reasons I've discussed already, that makes me uncomfortable. I think you also see to the extent that governments have increasingly become involved in internet governance, that's the same trajectory that led us to Cambridge Analytica. So for me, I think it's absolutely possible and actually recommended that it continue to be a national level regulatory effort because then we continue to focus on the conduct and not the technology.

CANNON:
        I agree. I think the national regulators are doing a pretty good job, frankly. Like I said earlier, I think they're genuinely trying to get it right. I think they are, from the examples I've seen personally, trying to be fair, trying to provide a lot of notice to people who are working in this space. And, I mean, let's not forget, it is challenging. It's new and emerging technology. And as I keep saying, we have these old laws that are trying to address it. And I would feel more comfortable having our constitution and our system of justice kind of figure out the way forward than a lot of other countries' constitutions and systems of justice.

TALL:
        There is a very good summary written in the U.K. by the Cryptoassets Taskforce, which is the Financial Conduct Authority, which regulates conduct in the financial markets; Prudential Regulation Authority, which regulates banks and big insurers; and the Bank of England, which is just a fantastic ancient establishment, and we love the ancient establishments, and therefore it's got to be right. But they've written their final report. It's taken six months to write, which actually is fairly quick in governmental terms. It's a fantastic summary of the technology, how they see that fitting into the U.K. and wider economic system, and how they're proposing to regulate it.[31] And so I'd recommend that to you. I think if you just search cryptoassets, taskforce, reports, then that should come up. Or alternatively you can

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[31] U.K. Cryptoassets Taskforce, *Final Report* (Oct. 2018), https://perma.cc/X4M7-ESSM.

go to FaegreBD.com on the financial services page, there's a very learned analysis written. [32]

REYES:

I would say that I wish the various national regulators would coordinate better. And I'm not even talking necessarily about the U.S., although, that's true here too. But I think my favorite example is actually a colleague, Michèle Finck, who writes about the application of GDPR to blockchain technology. [33] She told a story how she was talking to the folks in the European Commission who are working on this issue of GDPR applied with the technology. She said, look, it doesn't—it's impossible for them to comply at the moment. And they're like, well, what if they just make it more private. What if we make the transactions on the blockchain more private, more anonymous than they are right now? Like, that would solve it for GDPR purposes. And she's like, yes, but have you walked down the hall and talked to the folks working on anti-money-laundering concerns? And they're like, oh, maybe we should do that, right. So just the cross-coordination of policy goals, and particularly if you're looking at that technology level, making sure that you're not messing it up across agencies.

TALL:

Obviously we in the U.K. don't get completely frothy about the subject of the EU or what's going to happen in March [34] or anything like that. But, yeah, that's a particular feature of the European regulators, and you end up with this horrifying sort of—it's the reverse of arbitrage if there's such a thing. Where the legislation deals with that a little bit, and happily somebody stopped that particular instance arising. But massive contradictions which add to the gray areas which are ever so remunerative.

ROSARIO:

I think just as kind of like a general comment about people's desires to see regulation or regulators to work together, all the money and time that's been spent on entrepreneurs in this space is this sense, which I don't think is wholly accurate, that this is the next internet. You know, the internet happened, and I don't know that society—well, no, I know that society was not really prepared for what that would mean. A lot of people made a lot of money. It changed the way we live. And so it's kind of, you know, maybe an anxiety that, oh, there's this potentially

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[32] Richard Tall, *U.K. Tackles Cryptoasset Regulation, Releasing Taskforce Report That May Guide Other Countries*, FAEGREBD.COM (Nov. 2, 2018), https://perma.cc/V9CL-S6B9.

[33] *See, e.g.*, Michèle Finck, *Blockchains and the GDPR*, OXFORD BUSINESS LAW BLOG (Feb. 13, 2018), https://perma.cc/75BP-PATW; Michèle Finck, *Blockchains and Data Protection in the European Union*, 1 EUR. DATA PROT. L.R. 18 (2018); European Parliament, Panel for the Future of Science and Technology, *Blockchain and the General Data Protection Regulation: Can distributed ledgers be squared with European data protection law?*, EUROPEAN PARLIAMENTARY RESEARCH SERVICE PE 634.445 (July 2019).

[34] The U.K. was expected to leave the European Union on March 29, 2019. The date of "Brexit" has since been extended to June 30, 2019 and October 31, 2019. It is currently scheduled for January 31, 2020. U.K. Parliament, House of Commons Library, *Brexit timeline* (Oct. 30, 2019), https://perma.cc/EA85-YKZ7.

foundational transformative technology, and it's happening right now. Like, oh, we don't want to get caught off guard like we were with dot.com boom and the bust and everything else. It remains to be seen whether or not we're going to have a positive outcome or if there's going to be overregulation or be stifled. Nobody really knows. This lives on the internet, so I don't know how it's necessarily the next internet. But I think that experience kind of globally is driving a lot of the motivations maybe subconsciously behind the different interested parties in this.

TALL:

I think the other thing is everybody wants to be seen as disruptive. There's not a law firm on the planet which doesn't claim that it's disrupting the legal market. Now, when I was disruptive in school, which was, unfortunately, relatively frequently, then my foremaster reported to my housemaster who in turn would decide what level of punishment I should get. And sometimes it was quite severe, and other times he just caned me. So everybody is disruptive. Now, my view is if everybody is disruptive, then that means we've just got chaos. So surely we must have somebody who's not being disruptive because we've got to have a benchmark.

AUDIENCE QUESTION:

So from a technology perspective, what does blockchain mean to you individually?

TALL:

Frankly, I'm just really interested in the output. There could be a whole lot of leprechauns on tiny bikes and cycling very hard, so I'm afraid that it doesn't really mean a lot to me technologically.

ROSARIO:

I would say it means unique digital property—rather, let me start back over. A new way for people to come to consensus on data on a network without having to have some sort of person, man in the middle, so to speak, that verifies that, yes, this data is unique. The participants in these networks can decide amongst themselves according to certain rules that, no, this is a guarantee that this piece of data is unique. That's new to me.

REYES:

For me, it is software that allows parties to reach agreement about the evolution and existence of shared facts between them without using a third-party intermediary to do that for them.

CANNON:

So I think of it as what's old is new, and what's new is old. And blockchain technology is very new, but if you strip it down to its basics, it's really not all that different than something like your checkbook ledger, which is useful for tracking information and money in and money out.

AUDIENCE QUESTION:
        Will cryptocurrencies eventually displace government-issued fiat currencies?

TALL:
        That would be on the basis that actually, you know, essentially governmental currencies cease to exist. Now, what I can see is a situation where, and I think it's Venezuela who's one of the leading markets in this at the moment, where fiat currencies aren't represented on the blockchain. But I find it difficult to believe that there would be such a weight of opinion or desire in the marketplace with fiat currencies to disappear because, of course—and again, looking at financial crises, you know, treasury bonds started trading at huge discounts in a way that simply was on the basis that people go, well, I'd rather be paying the government to look after my money than anybody else.

ROSARIO:
        I will say something like that is going to occur. It's not going to be, in my opinion, because of adoption here in the First World or in the United States or the U.K. Despite the many faults of our financial system, this is arguably the best financial system on the planet. Now, he mentioned Venezuela. Bitcoin usage and cryptocurrency usage in Argentina has been going on since, like, 2011, 2010. So if this kind of cryptoanarchistic libertarian dream comes true, it will probably be because of other economies that are not as robust, financially speaking, that think, well, why don't we just adopt this. This is global. And so maybe we end up with some future where there's kind of a parallel global reserve E-currency. Whether it's bitcoin or something else, you know, I don't know.

REYES:
        I agree with that. I also would just say, as a payments lawyer, I love the law of negotiable instruments. And I still write checks so, yeah, I mean . . .

CANNON:
        I agree with all that too, especially the comments about I could see it and I can see it taking off in Third World countries and emerging democracies, but I don't see it really removing the U.S. dollar. And it's interesting, if you speak to people in the money management sector, and if you read the quotes about cryptocurrencies by people like Warren Buffett, and again if you talk to investment advisors, I mean, they think cryptocurrencies are like the spawn of Satan. And if you do have a legitimate fiduciary responsibility to manage other peoples' money, you really avoid that stuff like the plague. So I don't see it taking over in this country.

AUDIENCE QUESTION:
        Do you think it could, though, be a high percentage of transactions made will be in crypto, or you don't think it will ever even become a high percentage?

CANNON:
        You know, I could see it becoming a high percentage, or I could see it becoming very popular but not to the point where the U.S. dollar gets bought.

REYES:

And to do that, even that where it's a high percentage, the user interface has to get better. I have to be able to imagine a world where my dad can use it for it to be like that, and right now—yeah, uh-uh.

TALL:

Going back to the Cryptoassets Taskforce report, they've got some very interesting statistics in the back of the report about percentages of transactions conducted, and the reason being they wanted to identify what systemic risk that cryptocurrencies presented to the U.K. economic system in particular. And I would commend that too. If you wanted an idea of what some of the statistics look like, I would pretend I've read that bit and not pretend very well.

AUDIENCE QUESTION:

How do you counsel clients on issues outside of just the financial kind of regulatory issues that we've talked about, things like power usage and privacy?

CANNON:

I mean, I can just say for me the short answer is you really do need a team in place. You need a team of different types of lawyers to advise them on different types of issues. And then the client also needs their own team in place of in-house counsel, coders, developers, you know, business people. It's, frankly, an expensive and time-consuming engagement.

ROSARIO:

Yeah, I think pragmatically you need to actually step by step, okay, what type of data do you think you're going to be using? Where is it coming from? Then at what point is it getting to your system? What are you doing with it? So the analysis is not necessarily that different than you would do for any other computer system that's being built, but you just need to be mindful of and there's kind of a heightened risk profile in that, okay, well, are you doing this on a blockchain that you're building yourself or a consortium with other companies? Are you crazy and you're doing it with Bitcoin and Ethereum? I commend you, but most companies are not doing that. And it's just being very mindful and methodical in those questions. And it's not just this area. That's starting to become more practice in all sorts of data privacy issues like every attorney is going to have to at least have some understanding of the sensitivity of data.