LEGAL ISSUES SURROUNDING BLOCKCHAIN, CRYPTOCURRENCY, & BITCOIN

Panel: Joshua Ehrenfeld, Ryan Gallagher, Matthew Lyon, Thomas Potter, & Josh Rosenblatt

Moderated by Gary Pulsinelli

Gary Pulsinelli: Hi, welcome to our panel on Blockchain. I'm Gary Pulsinelli. I'm a professor here at the College of Law. I teach IP stuff and a little bit of the law and technology stuff, so they asked me to be in charge of this panel. Even though I don't know a whole lot about blockchain, I've done enough over the years that I've picked up a little bit. But we brought in some panelists here to actually do the heavy lifting. I decided I am going to let them introduce themselves, otherwise I would just be reading what you can read from the book. Because they know more about themselves than I do, I'll let them handle it.

Josh Rosenblatt: My name is Josh Rosenblatt. I am currently the SVP of development and General Counsel at BTC. We've got 5 different product lines that all service blockchain. The one people have heard of the most is BTC Media which is a conference, blog, podcast network. We also have an advertising studio focused on the blockchain industry. A consulting arm focused on the blockchain industry. A "SasS" product called CoinCart, that's for companies that want to launch tokens or have token projects. We did an ICO ourselves, we launched our own token about a year ago called Poet and that is trying to find ways to decentralize media product. We are a small scrappy team but we try to do a lot in the blockchain industry. Before that, I was at Frost Brown Todd and I was co-chair of their blockchain and cryptocurrency practice.

Matt Lyon: Hi everyone. My name is Matt Lyon, I'm the Associate Dean for Academic Affairs and I teach business law (Business Organizations, Payment Systems, Contracts) over at the LMU Law School downtown. I'm honored to be asked to be here. Unlike these folks, who work in this industry all the time, I'm just sort of an academic observer. Prior to being in academia, I was an associate at a large firm in Chicago working in securities litigation and SEC enforcement defense. So I am somewhat familiar with securities laws. Tom and I will be talking a little bit today about the regulatory response to blockchain, cryptocurrencies and ICOs.

Tom Potter: Good afternoon, my name is Tom Potter and I'm a partner with Burr and Forman. I've been a business litigator for over 30 years, principally in securities litigation, enforcement and compliance.

Ryan Gallagher: Hi everybody, my name is Ryan Gallagher. I love talking about this stuff so much so that as a student a couple of years ago here at the college I started a company where we essentially started off just teaching on blockchain topics, and since then, it's kind of evolved so that we are building applications, of which we have about 4 in various stages of development now.

Josh Ehrenfeld: Hi, I'm Josh Ehrenfeld. I'm a corporate tax partner at Burr Forman with Mr. Potter here. My practice is primarily mergers and acquisitions, corporate governance, formation and capital raises. So I do a lot of deals start-up, emerging growth companies, and then exits. My interest is I had been working a lot with companies in the blockchain and crypto space trying to identify ways to incorporate blockchain technology with their business models, and also to figure out ways to facilitate implementing coins and cryptocurrency into their capital structure whether it's from a debt or equity standpoint or just as a way to create liquidity.

Gary Pulsinelli: Great, thanks everybody. As you can tell just from the introductions, I think we need some introductory material here so we can all get ourselves up to speed on some of the stuff they are going to be talking about. I know it always take me a while to get back into this. I asked Tom to take the lead on this. He's going to give us background on bitcoin and more particularly, blockchain generally. What are we talking about when we use those terms?

Tom Potter: You can tell I drew the short straw. I have to confess to having some imposter syndrome doubt about the technology end of this. But I also take some comfort from the fact that over a dozen of the regulatory developments that we'll be addressing here today have happened in just the last 2 weeks. We'll start off a little bit about blockchain and this is where I'm going to depend upon my co-panelists and even the Audience to loudly correct anything that I've gotten wrong.

Blockchain is a digital distributed ledger technology, and what is that? Okay, it's open, distributed, it's encrypted, it's a ledger. Think about a really large excel spreadsheet that is encrypted and everybody in this room has a copy of it. That's the easiest way, for me anyway, to conceptualize that. How does this work? Katie told us a little bit earlier today about the smart contracts and the wallets and the P2k encryption on the wallet. Let's take that local individual component and blow it up to the system level. So you've got a P2P (peer to peer network) that consists

of thousands of Nodes, think of that like an individual computer. Everybody is comparing over this Network, their copies: does yours match mine, does his match hers? Each block in this chain has detail, it has some bit of data about a transaction, about a person, about a thing, and it has a timestamp and it's a cryptographic hash.

Ok, what is the hash? Aside from the Amsterdam stuff you are thinking about. The hash is the encryption. It uses an algorithm to reduce all of the information that is in that block into this long string of alpha-numeric characters that can be individual and yet very quickly processed. One of the standards is the SHA-256, it's a 256 bit hash. It takes that information, hashes it, and comes up with this cryptographic code. That block is then broadcast to the network for validation.

So all of you on the network and the people who are mining the network are going to look at that and say, "does this block with its hash information and its public and private key match what we know about those keys and the person generating it?" And once it's verified and accepted, then it can be matched up with other blocks using the before hash and the after hash of the blocks next to it, and then broadcast up or brought on chain. Adding that block to this chain, that updates everybody's copies of the ledger and now we've all got the latest information in separate copies.

This [indicating the following commentary on potential use] is plagiarized freely from the CFTC. What are some of the use cases for this? We are not talking about just public ledgers, but also as Ed mentioned earlier today, private permissioned ledgers. You could have all of the market participants who use the deposit trust clearing corporation have permissioned ledgers of block chain for clearing and settlement processes, for example. Financial institutions, trading and payment platforms, regulatory reporting, know your customer/anti-money-laundering, repo transactions (we'll get into that later). Governments, records management, all of that kind of stuff. An area near and dear to Josh's heart, holding a lot of potential, is going to be in the healthcare space; electronic medical records, you can imagine the uses for that.

Another thing we are going to be talking about, that builds upon this blockchain technology, is cryptocurrency. Which is a hip sounding thing that apparently means a lot to everybody. So, currencies. Let's talk about what currencies are before we even get to the crypto part. It is a medium for exchanging value. In the ancient sense it had intrinsic value; gold, diamonds, or a currency backed by a gold standard.

There are some precedents here for cryptocurrencies in the 1850s after the depression in the early 1800s, you've got the rise of company scrip, private bank notes, and other private currencies. We are in an age now of fiat currency where a government says our currency is a medium of exchange because the government and its resources back it. Those are issued by governments, by nation-states. What are cryptocurrencies? They are what we say they are. They are digital assets, and they have attributed value. They are what we say they are. The latest are the convertible crypto-currencies that are digital assets with attributed value, but they are convertible, like bitcoin, into fiat currencies, like the US dollar, for exchanges.

Let's think about currencies and ledgers. We are all familiar with our account at the bank or a broker. We are familiar with clearing agencies, so that you know that your bank account may not contain that actual number of dollars but it's pegged to your account and written in your ledger, and as people make deposits, their ledger is adjusted and your ledger on your account is adjusted through (currently) with securities and others distributed ledgers or delivery versus payment ledgers. Those, all in our common earlier versions, require a trusted third party intermediary—a bank, a clearing organization, or something like that, they are using a centralized ledger. Which is great as long as they're not hacked, their ledger is not hacked, it's secure, and you still trust them.

Which brings us to bitcoin. 2008 proposed in a white paper by a person or group of people under the name Satoshi Nakamoto. It rejects the whole notion of centralized third party control and a single ledger system. It purports to solve the trust problem among strangers in a distributed environment. We'll talk about whether that's a fallacy or not later. The thing that struck me as I was working through this on this September 2018, the 10th anniversary of the Lehman brothers bankruptcy, is "oh, this was proposed at the same time that the whole financial system was falling apart." Coincidence? Maybe not.

I always try to bring things back to first principles. We all get excited about new stuff and often we find out that new stuff isn't really new. The Federal Reserve in one of its papers on cryptocurrencies brought up a discovery from early 1900s about the stone currency in Yap, the nation of Yap in the Caroline Islands in Micronesia consisting of these huge millstones. You can't carry those around, you can't park it in front of your house. And how would you have a fraction of interest in one of those things? Well they are virtual, they are distributed. They are virtual because you don't possess it, you don't carry it around. It's dependent, not on physical possession, but on attributed value. It's distributed because it's in a small community and when some part of that value, when

Ed Snow and I have a transaction and he pays me a fifth of a stone millwheel, it's distributed because that news gets around the community—each node updates its understanding of the ownership so it's not entirely a new concept.

Virtual currencies. This, again, plagiarized from the CFTC. They have a number on their website, of very good backgrounders, so I commend those to you. Virtual currency is a digital representation of value that functions as a medium of exchange, a unit of account, and/or a store of value. From a regulatory standpoint, as we'll see throughout the afternoon, its primary function is speculation. Bitcoin is the largest convertible currency by market capitalization in the world, close to $72 billion in August 2017, which grew astronomically up through December of 2017 when bitcoin was at about 20,000 a coin, trading today at 6745 a coin. Hence the speculation and volatility.

Some of the attributes of it: it's pseudonymous but from what we've seen of blockchain and distributed ledgers, not anonymous. It relies on the cryptography and the digital signatures that Katie and Ed discussed earlier today. It runs on a decentralized P2P network with miners or a server farm that is constantly riffing through all of this data to find this hash that matches up with that hash, and they are rewarded with little crumbs, if you will, along the way. A public ledger is just that. A private ledger would be permissioned. Let's say for the clearing and settlement through members of the Fed. Those different use cases that we mentioned before. Payments and Transactions are there in a very small way now, but coming.

Reality bites. Everybody is excited about bitcoin. It grows and it grows and it grows. There is an open bitcoin exchange in Japan launched in 2010, Mt.Gox. It captures up to 70% of the market in bitcoin exchanges and then in a month or two, it's hacked. It suspends trading, it fought closing, it files bankruptcy, it is in liquidation, over 700,000 bitcoins stolen. It didn't solve the trust problem.

There is a decision in a class action case within the last couple of days dealing with Mt.Gox that brings up some of the regulatory issues that we confront in this realm. Nevertheless, cryptocurrencies have continued to proliferate. Come up with some kind of neat sounding name, it's probably on the list. There are over 1,960 different cryptocurrencies reported as of last week by coinmarketcap and it reminded me of what the chairman of the Fed once called "irrational exuberance." From the regulatory standpoint, we'll be talking some more about how it works, what issue it raises, and what regulators are doing to try to catch up and preserve, in this kind of wild west environment, investor's safety and

confidence. So that's it for the introduction, any questions, criticism, comments?

Audience: *I have a question. I don't understand a lot of this.*

Tom Potter: That's okay, I don't either.

Audience: *How is the capitalization of bitcoin, it is completely this arbitrary currency, how is that measured? There's no central repository where all these transactions . . . .*

Tom Potter: Right. Somebody is going to address that later. But there is a limited number of bitcoins, I think there is 29 million or something like that. Think of them as being buried out there somewhere. Because they have to be mined, they haven't all been discovered yet. Their value and this is why it's purely speculative is attributed, it's what you can get for them, for however many of them are out there, for whatever anybody is willing to pay for them.

Audience: *How common is it in commercial transactions? I haven't seen any bitcoin deals come up in my business. I am just kind of curious. Is it just a niche?*

Ryan Gallagher: Bitcoin is less popular in commercial transactions now, but keep in mind it's really still early. There are other cryptocurrencies that are very highly used in commercial transactions. Banks are making their play in the space right now, and they are running programs and they are doing test programs that have been successful to date for international exchange. Right now it's infeasible for the most part, but for high volume transfers and large number transfers it's proving to be really effective.

Tom Potter: My sense on the bitcoin thing is that there are a handful of retailers that want to have the PR value or the hit/miss cachet to say that they will accept this bitcoin in their transactions.

Josh Rosenblatt: We are sort of the outlier because we do a lot of business with people who have a lot of bitcoin, but we won't work with a service provider like a lawyer or an accountant unless they will take bitcoin. We use it as almost as a litmus test of "do they know what they are talking about, are they comfortable with it?" Because it's pretty easy to accept. There are payment providers that will convert it to cash immediately. But we are definitely the outlier in that situation.

Josh Ehrenfeld: I've worked with a lot of law firms that take bitcoin as a currency for transactions. It's out there.

Tom Potter: We've had that discussion. We don't accept it yet.

Josh Ehrenfeld: But Josh may talk us into it.

Audience: *Where did the $27 million loss of bitcoins originate, and what happened to the bitcoins?*

Tom Potter: Are you talking about the Mt. Gox thing, or just the drop in value since last December?

Audience: *No, missing.*

Matt Lyon: I think he's talking about Mt. Gox.

Josh Rosenblatt: I can jump in there. I don't know. Here's the background on that: Mt. Gox, I'll give you a little bit of flavor. Mt. Gox originally stood for Magic the Gathering Online Exchange. If you are familiar with the card game Magic the Gathering? It pretty quickly pivoted, after there was no market for that, into a cryptocurrency marketplace, and got volumes that they'd never expected. I think the original owner sold to the owner who took it bankrupt. From what I heard, I don't know, dude just ran off with the money. People say that bitcoin, as a protocol, is secure. That part is true today, but the layers on top of it, the exchanges on top of it, the human interaction pieces are not. You hear scams of people running away with crypto, not infrequently.

Matt Lyon: I think it's important as we start talking about, later, the regulatory response, to really distinguish, for the SEC, CFTC, and other regulatory bodies, between: the distributed ledger technology, the blockchain being one of them, the most well-known; virtual or cryptocurrencies that are used ideally as a means of exchange, like cash, such as bitcoin and Ether; and then digital tokens that are used in these ICOs, where investors use cryptocurrency to purchase a digital token to fund some sort of business endeavor that is usually based on the blockchain or some other distributed ledger that then will be exchangeable at some point for virtual currency, and hopefully more of it. Because those three things are treated very differently from the regulatory perspective.

Audience: *I sat in here for an hour on ethics. One of them had something to do with 1.1 about maintaining knowledge about what the heck is going on in the world. I've got to be honest with you, I consider myself to be somewhat efficient on technology, but this is the most confusing thing. My friend is into this. This thing about miners going out and matching codes and getting even a portion of a bitcoin. Why do we want to make it so confusing to average Joe people? Is it going to be at a point where everyone's going to understand what the heck you guys are talking about?*

Tom Potter: I don't know, how many people were initially confused by a smartphone? So yeah, I think it will come up, but we'll see as we get into the regulations, don't feel bad, you're right there with the SEC and everybody else.

Audience: *This is like several hundred years ago in the Netherlands, it was a complete bubble and it was ridiculous. I think this is the same thing, a way to create inflation because there are certain people, certain industries on Wallstreet that brought up creating inflation,and creating artificial . . . .*

Josh Ehrenfeld: Think about the dot com bubble, the world wide web and the internet started getting going, then all of a sudden everybody had some sort of website or some sort of web product and there was offerings for these new enterprises all over the place. And how many of those lasted after 1999?

Audience: *But the purpose of a website is just like a commercial (inaudible).*

Josh Ehrenfeld: But that's the point, back then you didn't know what they were going to turn into. All you knew was you had this technology that could me monetized in some form or fashion throughout the business world and we didn't know what it was going to turn into. It still has all kinds of things that we haven't figured out yet. But this is, I think, very similar, where we are: we don't know what the end use of blockchain will be, but we know it has value, and we know it can be used in numerous ways. And yeah, there is a speculation side of it that's certainly problematic.

Tom Potter: This goes back to Matt's earlier point. I think you are right, and that it goes back to his point. You have to distinguish among the different components that we are talking about here. There is the blockchain technology which has a myriad of different potential uses and has shown a lot of promise in areas other than the highly speculative cryptocurrencies which are showing some bubble-like tendencies. As [Josh Ehrenfeld] points out, we are on the very front end of this whole deal, so we've got to play for the long game and see where it's going to end.

Ryan Gallagher: To follow that up, I think the speculation was just misplaced. What's being built out now is the infrastructure. We are building the tools to make this possible in the future. I think investors, we have a lot of people coming in who expected hundreds of millions of daily active users on these applications that are being built. But really what is happening now is that we are just creating the tools for businesses to come in and later use for their business use case. What's being built now are just tools for this next series of creators to come in and implement in their new business models.

Gary Pulsinelli: I don't think I needed to write questions for this panel. You guys are doing my job for me.

Audience: *A question with respect to the effect of ransomware on the uptick of bitcoins. Was there any idea of. any calculation of the amount, of ransomware, that was collected by people who required that the exchange be done in bitcoins?*

Josh Rosenblatt: I can talk about that. Actually my brother got hit by a ransomware attack that required him to pay bitcoin. Ultimately he didn't pay it and everything worked out. But to answer your question directly: the success of those from a monetary prospective, how much money are the ransomware folks making? It is actually not that much. I think one of the largest ones from 6 months ago, I can't remember the name: I think the average payment was $150 but they didn't really collect that much money. Part of that has to do with the nature of bitcoin being pseudonymous, like you were talking about. What is interesting about bitcoin as a mathematical currency, is that every transaction that has ever happened is publicly available. That is what allows trust among otherwise trustless parties.

Bitcoin isn't great if you are trying to steal money from people because you can ultimately see where the money goes and then kind of watch it. So that'ss been a relatively effective crime fighting enforcement tool. That being said there is a lot of overlays of bitcoin and crime, that's sort of the reputation that I hope the industry can move past. But let's be honest, in 2012 if you wanted to buy drugs online, bitcoin was the currency for you, I'm told. Once we move past that initial nefarious reputation, I think actually we are kind of almost there, into some of the business applications that really address the question of, "when do people who don't trust each other want to share data in a controlled way?" The answer to that turns out to be, "a lot." We're going to start to see some really interesting applications.

Audience: *I'm trying to analogize this to things that people know. Is it a more digital version of bank accounts, or is there an element of the stock market as far as the GDP values? Is there something you can point to, like different elements in normal speak?*

Tom Potter: Which of those 3 are we talking about because the answer is different for each one.

Audience: *(inaudible)*

Matt Lyon: The original ideal behind the Satoshi Nakamoto bitcoin white paper was that bitcoin would be a currency that–well, the idea of a government fiat currency had failed. So we instead have a decentralized system. If I go into your store and I pay you with a check, why do you take that check? Because you trust it. The check has "Bank of America" on it, and we have a system where you'll present that to my

bank and my bank will pay your bank. If I pay you with a credit card, why do you trust that? Because you have a contract with a bank and I have a contract with the bank that issued me a card and ultimately we work through a system that we know—a Visa or Mastercard interbank system.

Bitcoin has the advantage that, if I want to pay you in bitcoin, you get all the money. Right now, if I pay you with a credit card, your merchant bank takes a cut, my issuing bank that issued me the credit card takes a cut. The checking system is expensive. There are transaction costs involved. Bitcoin has very little, if any, transactional cost, but relies on an immutable, reliable, technology. The problem is, of course, that there is no government backing it. So if Mt. Gox occurs and 700,000 bitcoins are stolen, the FDIC doesn't step in to make everyone whole who was invested and lost those bitcoins. So you have to have a technology that is reliable enough that folks, despite not having that centralized government overseeing it and insuring it, are willing to engage in that. Now bitcoin, because it's gotten so valuable, rather than being like cash I have in a checking account, people are treating it more like gold, so they are holding it more like an investment. Why would I pay you in bitcoin that is worth $6,700 today if I think it's eventually going to be worth $20,000, like it was in December? I'm way overpaying you if it's going to rise in value like that. I don't know if that answers your question.

Audience: *I'm not sure I understand the social utility or the economic value of the mining process. What is the societal value or economic value of mining?*

Ryan Gallagher: I tell people, don't look at the overhead of mining bitcoin in a silo; compare it to traditional systems. How much money does it take to keep the lights on at Visa and Mastercard? How much money does it take to print currency.

Audience: *Why is it set up that way?*

Ryan Gallagher: We are moving everything to the internet, why not move value to the internet as well?

Audience: *Why the process of making people d*o . . . .

Gary Pulsinelli: To create scarcity.

Audience: . . . *whatever the heck it is they're doing?*

Ryan Gallagher: The miners are the security angle. The miners are the ones that are validating the information that is coming on to the blockchain. In order to make sure that they do it correctly, they are incentivized: we incentivize them with a fraction of a bitcoin. If they don't do it right, if they don't join consensus with 51% of all the people who are participating on that blockchain, then they lose out. They don't earn their

reward. So it's good that it's expensive for them to run these programs because we want them to be accurate in their assessment of the information that is coming into the blockchain.

Gary Pulsinelli: It's also a way to create scarcity. If it was easy to get these things then there would be too many and they wouldn't be worth anything. The point is you make it really hard. That's why gold is valuable because it's scarce. The process, in part, is set up to create scarcity, right? It gets harder and harder to get bitcoin. Early on it was easy but it's getting harder and harder over time. Part of why bitcoin is so weird is to create the artificial scarcity.

Audience: *One thing important to note: video cards are really hard to get in bulk now because that's what miners have to use to even get the computational power to add people on to the ledger. So you actually have to spend a lot of money getting video cards to even mine it now. So there actually is a huge financial barrier now.*

Josh Ehrenfeld: Sort of like a medallion for a taxi.

Josh Rosenblatt: I kind of view the bitcoin mining process as an equivalent to the "qwerty" keyboard. The knock on bitcoin mining is that it's incredibly expensive, if bitcoin were a nation it would be the seventh largest consumer of power. It is horribly inefficient, by design.

Let's take a step back. Bitcoin can work if there is one miner, or if there is a hundred thousand miners, or a hundred million miners. But bitcoin's goal, back to the scarcity point, is to make sure that each mining process, each time transactions are verified, happens on a fixed schedule. Every 10 minutes a block is closed. If there is one miner, 10 minutes is maybe how long it takes. If there is 100,000 miners, the system has to make itself more difficult, in order to keep that 10 minute schedule. And the way it makes it more difficult is it increases the math formula. The math formula goes from 2+2 to something insanely hard. And that requires a lot of computing power and a lot of energy. It's not the way that I like to tell people to think about mining.

The beauty of mining really is just that it's peer-to-peer. If I'm competitor A and there is competitor B and we want to set up our own blockchain, we can set it up in a way that benefits us. It can be very cost efficient, timely, all those kinds of things. The problem with bitcoin is it is designed to be inefficient, the same way that the "qwerty" keyboard was designed to be inefficient back when typewriters had mechanical arms and this way they wouldn't hit each other if you typed too fast. So I tell people not to get too focused in on the mining aspect, except for that, again it allows people who don't trust each other to share data in a distributed decentralized way. That way all of the data isn't in only one spot.

Gary Pulsinelli: But it doesn't have to be as hard at bitcoin makes it.

Josh Rosenblatt: Exactly.

Gary Pulsinelli: That's kind of fundamental.

Ryan Gallagher: You sacrifice the distributed nature or the security for scalability and transaction speed. There is a big battle going on even in the bitcoin community alone, but generally, about what is the fundamental purpose of this. Is it to reach as many people as possible and ease of use? Or is it inherent trust and security? That's a line that these communities have been developing and discussing for a long time now.

Audience: *I have 3 questions. We do a lot of R&D with blockchain for a number of years. Do any of you know if they standardized anything relative to ISO TC 37? There are several standards going out there, has anybody heard about any type of standardization? Does anybody know what I'm talking about?*

Panel: [Divers alarums.]

Tom Potter: I have no clue.

Audience: *My next question was going to be, do you think standardization will help propel the use of the technology? But since nobody knows what it is . . . .*

Tom Potter: My answer to you is yes. I think it would.

Audience: *The next question is, I've got a lot of lawyers here, I'm not a lawyer, so perhaps you guys could help me. I also make a statement before I do it: You are talking about cryptocurrency, most of that is done on a public blockchain, not the private. So for you lawyers in here if you want to make money, forget the public. That's not where your money is, it's the private, it's the IBMs, the SAPs, those are the companies that are going to provide services for Walmart and Amazon and those people, and that's what is going to drive this. Cryptocurrency, I know some people who have made a lot of money off of it, but I've never seen any business models that really are going to move forward. There may be some.*

So why do you use it? I do a lot of international transactions. I hate wire transfers– it takes 3 days to get my money and I've got to pay the bank $50. With cryptocurrency, it's immediate. We're not using it yet, but I've got my friends in Russia, the country you'd be worried about, who want to use it. Estonia, they're not that big a buddy with them, they've embraced it.

That leads to the question that I'm going to ask so that you guys know the difference. A lot of people don't realize there is the smart contract side, and there is the cryptocurrency, and you use smart contracts sometimes in that but they are not necessarily one and the same. You can have transactions using smart contracts with blockchain and never use cryptocurrency.

That being said, my question is: If you are using an application tha's on the public blockchain, and a lot of things I do are time sensitive; if a transaction happens and it takes longer because it's going through the public blockchain to transpire, let's say if it happens in 30 minutes and you miss your opportunity to make the deal, who absorbs that liability? Is that something you're going to negotiate on the front end through the consensus process? What happens there?

Tom Potter: Ryan will get more to that but that's, as Katie alluded to and Amanda earlier today, that's where smart contracts aren't all that smart. They've got the "if then" and they can execute that part, but they can't always answer the "what then" and "who's liable" and "under what circumstance," so they can be a component of a contractual relationship but they are not going to be the whole thing.

Audience: *Especially if you are doing international business then you've got the question of: whose law are you going to apply? Even if you develop out the consensus side of the original format, and you get a new agreement, can that override the old one?*

Tom Potter: And where are you going to go to enforce it and how?

Audience: *That's my next question.*

Tom Potter: We'll talk about that.

Gary Pulsinelli: We touched on some of this, but let's pull it out a little more formally. We talked about bitcoin. The frenzy around bitcoin, that's not the only game in town; there are lots of other things. Is this just a fad? Are cryptocurrencies a fad? Or do they have a long term future? Should anybody buy them? I think we may have covered much of this ground.

Josh Rosenblatt: I'm a big believer, obviously. The way I think about the internet, like the big revolution of the internet was that it really democratized free speech. Anyone, anywhere, can upload a video to Youtube, can publish articles, can chat with anyone. It opened up speech in a way previously unthought of. I look at blockchain technology and cryptocurrencies as sort of the tool that will democratize value. The things that you can do with speech on the internet, you can do with money using a blockchain.

Two examples that we are working with that involve cryptocurrency, but really we think our products that are beyond that: The first is a project called Encrypt that I encourage you to go look at. The basic thought is (is everyone familiar with Dropbox or Onedrive as cloud storage solutions?) you want to save files but you don't want to save them

on your own device, [so] you can save them in the cloud. That's great. Great service, great product. The problem is they are effectively monopolies; there are very few competitors in the space and you are relying on Dropbox. If Dropbox goes bankrupt or Dropbox decides it wants to steal your data or sell your data or whatever, you are beholden to one company.

Encrypt takes that democratization of value approach and says, "why don't we build a decent centralized dropbox?" Almost everyone in here has a smartphone in their pocket. It has extra hard drive space on it. It's not making you any value. It's not doing anything for you right now. Why not be leasing that space out? Why not turn your phone into a revenue generating product? Really there's two problems. One is technological: how do you build the software? And that I think we can address. The second is, how do we get compensated for that? Someone is taking up space on my phone, I want to get paid, and the answer to that are micro transactions, being paid per megabyte, per minute. That's really hard to do using today's traditional payment pipelines. You can't do it with Visa, you can't do it with a check, it's really infeasible, think about wires or things like that. Cryptocurrencies are great at that. They are not infinitesimally divisible, but they are divisible down to 8, 10, 12 digits, or whatever depending on what you use. Those are the types of services and products that cryptocurrencies and blockchain technology allow.

Gary Pulsinelli: Cryptocurrencies are really only a small part of this. What are some of the other businesses you see being built around blockchain, and then the prospects of those kinds of things?

Josh Ehrenfeld: The thing about blockchain is that it's a very powerful technology that can be utilized in a myriad of forms, fashions, throughout business models. So the question becomes what I think is very fascinating: how can you take a business that has a certain set of operations to generate revenue, how can make those more efficient, how can you cut out cost and streamline processes? It's really just division of labor. It's Adam Smith utilizing more technology to prove Adam Smith right yet again. It's just a function of how do those technologies get implemented, how are they developed, and what kind of processes and products make sense to incorporate in different industries? And that's where the interesting crossroads are.

There are certain industries where it makes a lot of sense to use some technology, and there's certain industries where maybe not. On top of all this, we haven't really gotten into it but, the first session this morning probably scared a lot of people, but the security element of this is probably the most important. Because if you don't trust the security then I don't

think you are going to be very comfortable with the underlying utilization of these technologies. Whether for a crypto reason or a currency or coin, or whether it's just to implement some sort of blockchain technology in your business model. You always have to keep the security component in mind. That's one of the fundamental powers of this new era. This technology has application, but it's a function of figuring out how and when to deploy it.

Gary Pulsinelli: Do you have any examples that you want to give us?

Josh Ehrenfeld: The one that comes to mind that is not solved—if someone could solve it they will be a hero to the world—it's inoperability in healthcare. Healthcare devices and machines do not talk to each other. Whether it's electronic records, whether its systems, specific devices machines and ORs, they do not talk to each other in a completely synchronized manner where you can get data, where you can get information across the channel. If you could fix that problem, you would fix the healthcare problem, you would fix the healthcare system, you would revolutionize it. But the problem you run into is the security issue: Who is going to be the first to put all their protected health information on a new set of systems utilizing blockchain technology that puts everything at risk? The minute you do that, you are going to have a lot of efficiencies, but that overarching risk factor that you have to keep in mind is something that people haven't gotten past yet. We are working on it, but that's the most powerful opportunity out there, or one of the ones that's the most transformative.

Ryan Gallagher: I think automation is another great aspect of blockchain. Supply chains are a great example of this. Think of a scenario where Amazon delivers a product, and you confirm receipt of that product. Now automatically, every step along the top side of that supply chain will receive notice all the way up until the individual component manufacturers of whatever that product is. You can order those things to be designed and built and delivered and put together, and it streamlines the process all the way down. There is no more paperwork. And you know as a business that what is on that blockchain actually happened. That's a contract between you and every person involved in that supply chain. And that can tree branch into a million different ways, between a million different parties.

Josh Ehrenfeld: If you think about the historical revolutions in supply chain and operation, you think of Toyota and Kaizen, or you think of Walmart, Just in Time inventory, things like that. Blockchain has the capacity and capability to layer on top of that and create a new set of

revolutions, but we don't know what that is going to look like yet. It hasn't been perfected yet.

Tom Potter: That would be a private ledger right? Permissioned, and it would be verifiable. It would be instantaneous, and it would ripple up and down the chain for each individual component in a car that was sold.

Audience: *So that's instantaneous, the information that would be shared, (inaudible) is that what you are saying?*

Tom Potter: In a smaller distributed private ledger, it could be, and wouldn't encounter the transactional friction in that larger bitcoin thing that we were talking about earlier.

Audience: *Do you see it being so efficient that it would at least temporarily eliminate a lot of jobs?*

Tom Potter: Probably.

Josh Ehrenfeld: Eventually yeah. It's like anything else in economics: where you create efficiencies the old things that were inefficient are wiped away. Yeah you are going to have some sort of disruption, but it also is going to create opportunities on the other end.

Ryan Gallagher: Think remote trust. What can you do now that you have trust between untrusted parties? Middle men are going to be wiped off the board in an unknown number of industries.

Tom Potter: It's not a good thing for wholesalers. Maybe.

Josh Ehrenfeld: Or investment banks or if you want to take it to an area that is also interesting, think about capital markets when you are talking about raising equity. Traditionally it was hard to get into aggregated tools of capital without going to an investment bank or traditional avenue. Well if you could create other avenues and other forms of currency that are usable, then you've essentially created a "for the people" mechanism of accessing capital which, investment banks may not be happy about, but small businesses may very well benefit from that.

Audience: *I'm an attorney, I've drafted contracts, I've drafted trusts, I know how to move regular assets. But let's say I've got a client that comes in and says "I've got a bunch of bitcoin and I've got 3 kids. Starting in the year 2028, I want to give each of my 3 living kids one bitcoin a year and then by 2035, if there are any bitcoin left over, I want of all of that to go to the University of Tennessee College of Law." How do I, as a normal person, write this smart contract, and get it on the bitcoin blockchain.*

Jason: I was gonna say, don't. It's really funny, the folks in my office who are developers are laughing, "that's so easy," and I'd be like, "I don't know what you're talking about." From a smart contract perspective, when I was at Frost we built an escrow smart contract platform that would escrow software licenses. It should be simple, but there is nothing on the market that I know of and I don't know if you guys do, that would do that right now.

Tom Potter: Conceptionally is that any different than if it's shares of General Motors stock?

Audience: *You could handle that with a regular contract, but it's going to take somebody else to actually type in, log on, and move those bitcoin.*

Tom Potter: With a GM stock, you've have to take that trust or that will over to the broker-dealer and get the stamp on it and execute the trade.

Audience: *I want to avoid all of that though. I want to use a smart contract so it executes automatically using a program on the blockchain.*

Ryan Gallagher: It's not that hard from a development perspective. You have your wallet and you have it set up so, at a certain date, these coins are distributed from that wallet. And if those coins are X condition, they revert or they won't, it's just computer code.

Matt Lyon: It's not that different from when I set up an ACH transfer to pay my mortgage every month.

Audience: *You could hire a programmer to do that.*

Ryan Gallagher: Or a service provider.

Tom Potter: As long as you can conceptualize it as a series of "if this condition is met, then that action is taken," then you're good.

Josh Rosenblatt: One of the early conferences that I went to that talked about smart contracts: One of the developers was bragging that a smart contract like this was injunction proof and that money was going no matter what happened. It was a room full of developers, I was the only one who was like "that's a terrible idea! What are you thinking?" Even if you could hire a developer, I don't know that I would.

Where I think smart contracts are going to be the most interesting, and Crypto, are machine to machine transactions, and really, places, especially over short periods of time, places were humans aren't involved. One of the examples I like, I forget where I heard it, but imagine you are shipping Kobe beef from Japan to San Francisco, the Kobe beef gets loaded on at the dock, there is a scanner that scans a bar code, that scanner

time stamp goes on a blockchain. There is a humidity monitor on the boat, the monitor makes sure the humidity doesn't go below or above a certain point, that is recorded on the blockchain. There is a thermometer that records the temparture, that goes on the blockchasin. There is a GPS and a clock that is all digital that measures the length of the travel, and then when it comes off the boat there is another scan. All that goes on the blockchain, all that's automated and then there is a simple "if-then" statement that, if all those things happened in the right parameters, then a payment is triggered. That to me is a feasible real world example.

Josh Ehrenfeld: Like small repetitive transactions. Now when you're talking about large M&A transactions, Mercedes is never going to buy BMW using a smart contract. That's not going to happen. Those deals need the one-off transactions that have high ends of sophistication, iteration, and different issues. It's not going to be useful. It can be done, maybe, but it's not going to be worthwhile. But if it's repetitive in short spurts, I think that's where it's…

Audience: *I see one bullet point on the IRS here. Not to go into too much detail, but is the IRS treating it as a normal capital asset rules or peripheral (inaudible).*

Josh Ehrenfeld: Until they tell us otherwise, yeah.

Audience: *What is it? Is it grey or is it just kind of a capital . . . .*

Josh Ehrenfeld: It's just going to be a capital asset.

Josh Rosenblatt: And as a business that treats it like an operating asset, it is a freaking nightmare. One of the decision factors in every transaction we make is: do we want to consider this operating capital or investment capital? And if we pay someone am I going to incur capital gains on it? And then how do we track it? It's a disaster. If anyone wants to build software that handles that, you'll get our business, I'll tell you that right now.

Audience: *When companies do ICO's in the current environment with banks, and you know your customer rules, how are you able to convince banks proceeds received from the ICO satisfy your customer anti-money-laundering concerns? I think this is ironic because launching is supposed to, also in the future, solve those problems for banks. Currently they view it as if it's a marijuana business. They are very reluctant other than (inaudible) that I've read about in the Wall Street Journal. What is your experience on convincing a bank to accept deposits and business from the person?*

Josh Rosenblatt: We did an ICO in 2017 before it got big and we have a platform that worked with several. The short answer is that offshore is getting really popular, which has problems of its own. Previously, when people who were selling tokens, this was until mid-2017.

Let me take a step back for people who don't know. A way to either sell a product or do a get-rich-quick scheme, depending on the state of the world, was to launch your own tokens. In our example that was called a Poet token. It does lots of great things. I can tell you about it later. We sold 10 million of those for bitcoin. We, for a while, didn't have a bank account, which is hard to run a business. We finally did get a banking relationship with some small local banks, but set up offshore. We're doing one now and we are treating it, and this is I think the trend, we are just offering equity. It is a 506d sale. There's a private placement memo. It's equity straight up. And the banks have been friendlier to that, but even in that world we're still spending a lot of money with (unknown) to figure out where in the world we want to be.

Audience: *Do you think there are any service providers who are going to be able to help you convince banks that it's okay? Like Chainalysis, and there are a couple of other companies that help people snoop out thieves. It seems to me that same type of process could be used to give that company the identity, to triangulate purchasers and show that none of them show the hallmarks of the money launderers.*

Josh Rosenblatt: That's a great question. We have a product that is called CoinCart that does all the accounting and KYC for people who are selling their own tokens. We outsource the KYC to a third party vendor, but everyone who buys goes through this pretty arduous KYC process. Their wallet transaction history is looked at. Their IP address from where they are coming in, where in the world they are purchasing gets looked at. And I think that is a good fact for banks, but I don't know that that itself is going to get the banking compliance department comfortable.

Tom Potter: Is everybody good on the KYC, (Know Your Customer) acronym?

Gary Pulsinelli: As I understand it, the legal marijuana industry is one of the huge early adopters of blockchain technology. I think that they seem to be embracing this. Did you want to add anything to my original question, which was about businesses building on this, or do you think we have exhausted that topic? Okay, so we started to get into this, this is all great, but it's only going to work if we can find a way to keep this all legal. So what is the current legal framework for regulating technologies? What agency is going to take the lead on this? Can regulators keep up with the technology that's changing everything so quickly? Tom, want to speak to that?

Tom Potter: To take the third question first: Can regulators keep up with it? Short answer—no. As I was thinking about this topic for today, it occurs to me we've got a really fundamental disconnect here.

Regulation is by governments. Governments are nation states; they are local in some sense or to some degree. This distributed ledger technology that we're talking about and cloud computing is the exact opposite.

Josh Rosenblatt: To be more cynical, they're also competitors, right?

Tom Potter: Right. So, who is going to regulate it? How are they going to regulate it? We've got a lot of different regulatory contenders. We have states that want to apply money transmitter regulations. We talked about uniform laws like UETA and E-sign. So the Uniform Law Commission is now proposing its universal regulation of virtual currencies, which is going to maybe overlap that. It might be adopted by eight, ten, twelve, some, not all, who knows [how many] states. All of the federal regulators are into it—the CFTC and the Securities Exchange Commission, principally. Then, internationally, you have this rush to see which nation state is gonna provide the best regulatory sandbox for these kind of developments. Gibraltar, for example, is trying to get there first with the most.

This disconnect between [the] territorial nation state kind of regulation versus this distributed cloud based technology is illustrated by a couple of cases. The older and more famous one, from last fall, is Tezos. The Tezos entered a coin offering, which turned out to be just a disaster. So everybody sued, and the suit went nowhere. Because you've got personal jurisdiction issues over Bitcoin Suisse providing services out of Switzerland to buyers in the U.S.. Although Bitcoin Suisse was working with the Tezos Foundation, whose founders were in California but it's in Arizona. And the server that it operated on was in Arizona, but all of the witnesses are in Switzerland. On top of all of that, can you even apply—and under what circumstances (Morrison is the Supreme Court decision)—U.S.securities laws to extraterritorial transactions? In Morrison, the Supreme Court said, no, the basic rule is: unless Congress made it really clear that you could, you can't.

What is today? The twenty first. Three days ago, [a] court dismissed [a] class action suit against the Mt. Gox Bank—Mizuho Bank in Japan—that was bought by a guy who lost all his bitcoins. And he lives in Virginia, and the court said no, no personal jurisdiction. That illustrates the disconnect between the technology and the regulators or potential regulators.

Let's talk about the regulation of one of these two or three different things, as Matt pointed out, that we are talking about here—initial coin offerings, tokens. Under what circumstances can that be regulated? Will that be regulated? The SEC has taken a lead in this space—

the offering space—with what's called a § 21(a) Report [on] the DAO. which it issued [on] July 2017. [It] held that we are going to apply our traditional investment contract analysis to these tokens that people are offering in order to determine whether they are securities, or whether they are not securities. For anybody who has ever dealt with this, this is an old standard here. The *Howey* analysis asks: is it an investment in a common enterprise where the investor expects profits based principally on the efforts of other people? It's kind of like what you get in stock. You make an investment of money, you get a thing back—a certificate, a token, or whatever. It gives you a share or right to appreciation in this enterprise that is being run by others, and, presumably, it's going to increase in value because of their efforts, not yours. If it meets that test, the SEC says it's a security.

Matt Lyon: Remember that's the ICOs, not cryptocurrency itself, because currencies are not securities. That's the argument the defendants make in these cases—"oh this is just a currency. I'm just selling a token. It's a new currency, and a currency is not a security."

Tom Potter: Right. I just have an option and a certificate of a thing. The consequences of course:, if it is a security, you've got to either register the offer, or you've got to comply with the exemptions for exempt offerings. You have disclosure requirements in any case. You're subject to all anti-fraud rules and regs in any case. And you're subject to SEC enforcement jurisdiction. Part of the trifecta that happened on 9/11 of this year in cryptocurrency and like regulation involved a criminal case where, just as Matt suggested, Mr. Zaslavskiy argued in federal court in Brooklyn that "you can't indict me for securities fraud; you're going to have to dismiss this because this is an unconstitutional application of the securities laws, and it's really just an interest in a certificate. It's not a security." The court denied his motion to dismiss the indictment saying it might [as] well be a security.

On that same day, the SEC started enforcement actions against two different ICOs. , Crypto Asset Management, which they prosecuted administratively as as unregistered offering of a security, and also as running an unregistered investment fund under the '40 Act. The SEC the same day took action against TokenLot LLC, not just for its unregistered coin offering, but also for acting as an unregistered broker-dealer in the sales of those coins. On the same day, FINRA, the Financial Regulatory Authority, brought its first crypto enforcement action against a registered stock broker who was dumb enough to sell something called HempCoin. That was the 9/11 trifecta on coin offerings.

The SEC is so concerned about this that they have even set up a fake website. And it's really kinda funny—HoweyCoins. It's one of those deals where you cybersecurity folks were talking earlier today about doing those little gotcha exercises—the social engineering with your own employees. This is that in the world of initial coin offerings because, if you click on the buy now button, all these alarms go off and the screen goes red. It's pretty cool. The SEC staff has suggested, that came before Chair Clayton's comment this week that staff guidance really doesn't matter so much anymore.The staff has suggested that some tokens might mature out of their status as a security. What? How could that be? Bear with me. He is offering tokens to get this decentralized enterprise up and running. In the early stages of the enterprise, he and his staff are going to have to conduct most of the action, most of the activity, in order to make this enterprise work. But when it reaches maturity and it's decentralized, then your appreciation in value of your tokens is no longer due, essentially, to entrepreneurial or managerial efforts of others. it's sufficiently decentralized that maybe it's no longer a security. But that is just staff guidance.

Matt Lyon: It wouldn't change the fact that the offering would still have to be just the secondary sales at some unknown point down the road…

Tom Potter: …at your own risk point in the future.

Josh Rosenblatt: Let me just jump in there. We are really excited about that guidance. That is the path that a lot of the projects we are working with now are taking. Give us some initial founders, give us some initial money. We'll build the thing. We want it to be open-sourced. We don't want to control it. We just want to get it started and get it out there. It sounds very counterintuitive, but a lot of people are very excited about it.

Tom Potter: The big issue for that is going to be, how do you know? When do you know? And the staff is never going to tell you that. They are going to say, "oh, facts and circumstances."

Josh Ehrenfeld: In the defense of the staff, I will say that I've spent a lot of time on the phone with them on questions in this area, and they are very well versed. They understand what the issues are. If you are willing to go through the process of formal registration and do a proper offering as if you would for any other security, they are incredibly helpful and ready to work with you. To their credit, they've done a really good job with how they have implemented this technology into something that they had no idea was coming.

Tom Potter: So they are playing catch up. They want to be helpful. They want to have this technology mature and realize the economic value of it, but they want to make sure investors are protected. That is their big thing.

On the cryptocurrency side, everybody is trying to get their finger in the pie. Everybody is playing catch up. Some of the federal regulators who are involved, as we just discussed the SEC, has been active in policing principally the offerings. Although, two weeks ago on the ninth they suspended trading in two instruments, we will call them, Bitcoin Tracker 1 and Ether Tracking 1, which were variously described as ETF (Exchange Traded Funds) notes, whatever, that were being sold over the counter by an outfit in Stokholm, Sweden. The SEC said, look, we're not really quite sure what these things are. You're not even calling them the same thing. So until we can figure this out, we're going to suspend trading in them.

You have the Commodities Futures Trading Commission which regards cryptocurrencies as commodities subject to regulations under the Commodities Exchange Act. We will talk more about that in a bit. You have the Consumer Financial Protection Bureau that has hired Paul Watkins—who started the Arizona crypto program that was mentioned earlier—to head up their sandbox, for lack of a better phrase, for FinTech Innovation. You've got the Office of the Comptroller of the Currency in the banking side that has just begun accepting applications for national bank charters for nondepository banking institutions. You have the IRS that wants to collect taxes on all of this.

Unknown: Not just taxes, they want reporting information, too.

Tom Potter: They have collected 14,000 Coinbase user account logs to try to get that reporting going. You have FINCEN (Financial Crimes Enforcement Network) which deals with bank secrecy, any money laundering, and all of that kind of stuff. There is legislation that was advanced in the House on the seventeenth of this month that would expand FINCEN's jurisdiction and give them an explicit mandate to coordinate on all things crypto. Related to FINCEN, you have OFAC (Office of Foreign Asset Control) within the Department of Treasury to identify high risk players in the international monetary and financial markets. Then, of course as we mentioned earlier, you have various states with their money transmitter acts. New York has tried to jump out front in the regulation of cryptocurrencies, exchanges, and all of that.

However, New York approved one of the Winklevoss twin's efforts, Gemini, a stable coin, through their digital asset exchange, two or three weeks ago on the tenth. But then on the eighteenth they kind of walked all of that back when the New York attorney general said he was

going to take at least three of these digital asset exchanges and start investigating them because of their heighted fraud risk. Because they don't have well developed regulatory structures. They don't have well developed market surveillance and all of that sort of thing. So back to your comment, yeah, some people have been making boodles of money, but it's a very risky, undeveloped, cutting edge kind of environment, and where you have that, you have a lot of real active players looking to exploit it for fraud and criminal activity.

This sounds like the beginning of a really bad joke, but my introduction to all of this was: client walks into a law firm and says, "we have this technology that we are going to sell. We want to sell to digital exchanges and others, because we think that our smart contract technology is going to enable people to, in effect, do margin lending on their cryptocurrencies. But everybody is really skittish when we try to make our sales calls on them because of the CFTC stuff. What can you do to help us?" And we said, "well, let's see. These currencies are commodities like hog bellies, wheat, corn, frozen concentrated orange juice, all of that. The CFTC itself has kind of a sandbox-like structure where they will work with recognized existing commodities exchanges to self-certify some futures, and then they will watch and work with those folks really closely to see if those are working out well, and function well under that heightened review. They've done that with the Merc and the CBOE, who late last year self-certified some new contracts for Bitcoin futures. That's a futures contract that obligates me to buy or sell bitcoin at a date certain in the future, at a price certain in the future.

So how do we get there? Before Dodd-Frank, everybody recognized a distinction between those futures contracts that are usually market traded principally for hedging and rarely physically settle. Instead of when the expiration date came, or was approaching, on my hog belly futures, I wasn't going to buy a bunch of hog bellies and deliver them to my counter party. I was going to settle that future on an exchange for cash. Those were distinguished from what is called a forward contract which is my present contract with Ed for 30 bitcoins at a specified price to be delivered a week from now. That is different because it's a present contract for forward delivery. Forwards are standard commercial kinds of arrangements for people who are actually buying and selling the thing. They are generally cash forward, not standardized, not exchange traded. It's an individualized kind of agreement between, say, a farmer and a shipper on some agreed upon quantity of a commodity at an agreed price at an agreed time in the future ,and everybody understood that.

But that was before Dodd-Frank. Thank goodness for Congress. They keep us in business. You see that that understanding was there with

respect, and reinforced by this Brent Crude interpretation which dealt with the cash contract for future deliveries of barrels of Barents Sea crude oil. The Brent interpretation stands today, but Dodd-Frank and its rush to regulate all things financial expanded the CFTC's jurisdiction to include leveraged or margined commodities transactions with retail customers. So there is an exception for non-retail customers certified player big boys under the CEA. But as far as retail players, if it's a leveraged or a financed or a margined commodities contract, it's subject to regulation unless—because it's Dodd-Frank and there are always exceptions—unlessthere is actual physical delivery in twenty-eight days.

Along comes Bitfinex. Bitfinex is a bitcoin exchange, and they want to enable, because now as we heard earlier, people are holding their bitcoins as a speculative investment, and they are no longer using them as cash. But they want to monetize them in the meantime. They want to be able to margin lend their bitcoins, so they can get that lending revenue off of them in the meantime. Bitfinex said, "Okay cool, we'll let you margin lend your bitcoins. We will control the keys to the wallets. We'll keep track of this, and (here is where it gets really ironic for me), we'll keep track of your margin lending of this decentralized ledger technology coin on our central ledger. We'll do book entry delivery, and we can force liquidate the contracts." So what do you think the CFTC said? Nope, you are in violation because there is no physical delivery. You are doing the book entry stuff, you can force liquidate them, you can still control everything. So it's not a spot transaction. There is no physical delivery.

After Bitfinex, the CFTC, at the end of last year issued a proposed interpretation. The comment period is closed, and they are still sitting on it. Who knows what they will do. It's because this regulatory uncertainty has put a damper on the development of cryptocurrencies as financial markets in the U.S.. It's causing a lot of heartburn. The CBOE is ready to go with Ether futures but have said they are not going to launch them until the CFTC acts on it. The CFTC is sticking with the spot delivery. Physical delivery within 28 days. The lender can't obtain any control, functional approach, facts and circumstances, no netting. That's where they stand on margin lending.

Do you remember in Jurassic Park? "Life will find a way." Money will find a way. There are people trying to circumvent this, or "comply" with it, by structuring the same transaction in a slightly different way, by analogy to other existing well accepted transactions, by, for example, instead of calling it a loan and structuring it as a loan, let's change up the smart contracts and if-then requirements, just a little bit, so that the whole thing takes place in an unaffiliated third party escrow wallet. And instead

of a loan, it's a present sale to you, the buyer of the bitcoin that you are going to control in that escrow wallet, with a simultaneous obligation to repurchase that from you at a later date with a market or interest or carry premium. Sounds like a work around. Repos have been used. It is a several trillion dollar market standard way that the Fed lends to Wall Street and highly liquid. So it will be interesting to see if that passes muster with the CFTC. It's just an example of how fast all this is changing. That's what I've got on the regulatory side for now.

Gary Pulsinelli: Along those lines, Matt, you've been looking at the Trump administration's approach to these things. And what are you seeing?

Matt Lyon: Well the administration's approach is what their appointees are doing, which is what Tom is talking about. The big picture is that they've done a nice job balancing a desire not to strangle the baby in its crib, and to allow the technology to evolve and see where it goes, like we've been talking about, while trying to maintain some protection for so-called "main street" investors. If you want to go to one place to view their philosophy on this, Chairman Clayton of the SEC and Chairman Giancarlo of the CFTC testified before the Senate Banking Committee about seven months ago. Seven months in this world is an eternity, but the idea is, they want to try to define where they have some regulatory control, and where they don't. Because it's very clear that no one agency has regulatory control over all of these different types of transaction elements of the blockchain and crypto world. The SEC has been very clear that, if it looks like an offering of a security, then just because you call it a cryptocurrency or a utility token, does not mean it isn't a security. Chariman Clayton directly said, "I have not seen an ICO that does not look like a securities offering." While in the DAO decision, they were very clear that it is facts and circumstances, and they were only talking about that particular offering, it's pretty clear that the people who have gotten into trouble, or the ones that they have gone after, are those folks who have acted as though the securities laws just don't apply.

Like Josh was saying, the regulators will work with you if you are willing to go through the registration process and figure out how to structure your transaction so it complies with the registration requirements or falls under a qualified exemption. But there are people out there who are advertising these and saying, "these aren't securities. We don't have to do that." Chairman Clayton is very clear. He says that if you are buying tokens from someone who is telling you that, they are wrong. And at the same time, the SEC is saying to the market participants that if you are engaging in this type of activity, then you are doing so at your own risk.

In a world, particularly in late 2017, where things were getting so overheated, how were you convincing people to buy your particular token? Well, how did Pets.com get people to buy their product in 1999? They bought an ad in the Super Bowl. So you promote it heavily. You tout it. You may engage in trades in an overseas unregulated market where they don't really look at whether it's a bot that is doing the trading versus a person actually doing trading. Then you raise the value of the currency. The perceived value is whatever value someone attributes to it. Somebody on Coin Desk, or some other one of the many websites or podcasts or technologies dedicated to this, talks about you. Then you get people to participate in these so-called "pump and dump schemes" where you raise the profile of it, and once the investors' money is in there, you sell the tokens. If you are engaging in that behavior, you are hitting the fourth element of the *Howey* test right on, which is expecting profits primarily through the actions of the managers and the promoters.

With regard to the CFTC, I think they have been very clear that cryptocurrencies are covered and are commodities, and if there are derivative products tied to cryptocurrencies, these futures contracts are also covered. The gray area is exactly what Tom was just talking about—the spot markets. And the CFTC has been pretty clear that wit doesn't have authority over those. The question is, who does? And they have said, "we don't know." I think what we are going to see in the next period of months and years is an attempt of continued cooperation among the federal regulatory authorities to create a regulatory web, such that everything is covered to ensure investor protection and some reliability of the markets. But also, there is a desire not to over-regulate and apply one type of formula to all of these various offerings.

Then, of course, you've got self-regulation that has only just started to go on with FINRA, and the states with the proposed uniform virtual currency act, and then various states have adopted legislation or established regulatory sandboxes. If you think Congress and the SEC have trouble keeping up with blockchain, try explaining to a state legislator what the blockchain is and what laws they should be passing regulating virtual currencies or ICOs. Nothing against state legislators, if there are any in the room, and I know you all get your funding from them. But it's very complicated and it's changing all the time.

Gary Pulsinelli: Anybody else care to weigh in on the regulatory stuff that you've seen?

Josh Ehrenfeld: The only thing I would add is that, it's unintentional, unintended consequences, but hen they changed the tax code at the beginning of this year, they lowered the corporate rate so that

made a lot of my clients' heads explode because we've done a lot of structuring to get money and businesses offshore to take advantage of far lower rates over in Asia or Europe and other places. And when they lowered the tax rates, a lot of those companies, that model went out the window and we started bringing those assets back to the U.S. By virtue of doing that, all of a sudden all of these regulations that hit crypto and blockchain technology opportunities are now suddenly in the U.S. regime. Whereas in 2017 and beforehand, you were already incentivized to be in Singapore or Hong Kong or somewhere where you would have a much more simple time with your ICO and your token activity. Now you are back in the U.S. for tax reasons and. lo and behold. you are also under the CFTC and SEC and everyone else.

Ryan Gallagher: The ol' bait and switch.

Josh Ehrenfeld: They didn't do it on purpose, I assure you, but it was one of the unintended consequences.

Tom Potter: I would add that, in this game of catch up, the regulators are concerned principally about how to protect investors, the integrity of markets, the functioning of markets, disclosures. They don't want to get in the way of the technology, but what they are struggling with is how to fit entirely new circumstances and entirely new technologies into existing boxes that were built for other technologies. There will continue to be a window of time where there is regulatory uncertainty where the application of existing regulations is shifting. It may shift this way and then shift back that way. Whatever stability comes in the near term with that will get entirely disrupted when Congress takes it up.

Josh Rosenblatt: One thing I'll add to that is the enforcement actions they've done a very good job of setting the goal post, so to speak: this clearly is out of bounds if you do it this way and then, on the other side, if you are fraudulent that's clearly out of bounds. I feel like they are slowly working their way in to clear up the gray area. I forget which enforcement action I read about this week, but one of the folks, on their website, claimed they had a video of President Obama hyping their coin. They didn't. That was taken out of context, obviously. That will get you in trouble, right?

Audience: *How soon should we be worried that this new asset, to the extent that you're legitimizing it as something that's big enough to be something that would be of interest to a larger pool, so that it might eventually end up in our assets, where it matters to me. That is, that it's an investment, it's a part of something? I don't even know it's a part of something. Somebody is buying it and selling it and it's comingled in such a way that I have some potential for loss. That loss could be on a limited basis, because if I've got one or two events, that's not that big of a deal. But it seems to me,*

not so long ago, that there were things comingled that we thought were not so big, that became big enough for us to have to bail out people. Is there any sense of how long that might take?

Josh Ehrenfeld: To the gentleman in the back's point, Wall Street is very good at what we call financial origami, which is creating something out of nothing. You are very correct in that there are funds out there that are trying to find ways to aggregate coins and other things. I'll say though, they are still isolated from the general, I wouldn't call it the general economy, but they are not as ubiquitous as, pick a random asset—mortgages. That asset is obviously a lot more prevalent and that's where you have a lot of problems, because those were utilized for syndication. It would take a lot more coin and tokens in the economy that are then syndicated and created, to create something along those lines. We are a long way from that.

Tom Potter: A couple of the recent SEC enforcement actions were directed to your point: to your concern, where a money manager, or somebody functioning as a money manager, is selling an interest in what appears to be a regular type of fund, where the fund itself has particularly outsized holdings in cryptocurrencies. There are disclosure issues there, but the main thing was that that person was not properly registered and regulated as an investment fund, so they shut that down. Currently pending before the commission are several applications to launch exchange traded funds that will consist largely of cryptocurrencies. The commission has been slow-walking those and refusing to register them until they can really get their arms around what sorts of disclosures are adequate with that. How will you inform the investors who buy a share in the "best ever fund", that they really understand that the "best ever fund" is managed by Fred who has these different cryptocurrencies and different wallets around the world? How does that work?

Audience: *To your point, there are several ETF funds out there that invest in blockchain. There's quite a number of them, but I don't see mutual funds. At least I don't know of any. Why do you have ETFs but you really don't have a lot of mutual funds to choose from? Are they regulated differently?*

Josh Ehrenfeld: I don't think they're regulated [differently], I think it's the risk profile of the mutual funds themselves that doesn't substantiate them going into that market yet. Which is what I think keeps people who are nervous about crypto, keeps them safe.

Josh Rosenblatt: I'm not particularly knowledgable on this topic at all, but from what little I know, the ETFs that claim they invest in blockchain are really not even investing in blockchain that heavily. There

just aren't that many public companies with that much blockchain exposure right now. I think more of that is marketing and hype.

Audience: *There is actually about five or six of them that are very heavily involved in it, and the technologies that are doing it.*

Ryan Gallagher: But they are investing in graphics card companies.

Audience: *Some of them are, yes.*

Tom Potter: In the infrastructure, really.

Josh Ehrenfeld: The internet of things concepts that are being confused as blockchain.

Tom Potter: Look for greater concentration of investment activity in that space by private funds first. And then as the private funds, which typically have a higher risk profile anyway, as they winnow through that and we start to see some real winners and losers, then the appeal will broaden.

Audience: *But there is no regulatory differences as far as ETFs and mutual funds?*

Tom Potter: Not really.

Audience: *On the regulatory front, and forgive me this may be more of a political question. You said that what the government agencies are trying to do is put this new thing in one of the old boxes or multiple old boxes. Is that, in your view, the way to go or does blockchain need to be in its own box and its own set of rules? Are we trying to put a square peg in a round hole? Or are we just trying to fit a peg made out of a lot of different pieces, and break it up into smaller pegs that fit?*

Tom Potter: First, we are trying to figure out what shape and what composition is the peg. And while they are trying to figure that out, the only hole that they have to put it in is the preexisting hole. You can't go through notice and comment rule-making without learning about what it is you are trying to deal with. You've got no statutes that deal with it, other than the preexisting stuff. So that's how they have to go. If there is a change to that, it's the rush to do all these sandboxes. The states are doing it, the federal regulators are doing it, a lot of the foreign jurisdictions are doing it. You are seeing with this technology and these assets, I think, a greater willingness to say, "you know we are not quite sure what this is or how it works or how we want to regulate it, so we are willing to put it in a more elastic safe space while we learn about it and try to figure out how best to do that."

Matt Lyon: The political environment is such right now that it would not support the establishment of a new regulatory agency—the Blockchain and Cryptocurrency Regulatory Commission, or something like that. I think the efforts are going to be to regulate it using the old boxes piecemeal until you get to the point where it's clear that you can't. An analogy would be when the Cold War ended and we started having non-state-sponsored terrorism. Our enemy was no longer the Soviet Union, it was these terrorist organizations that weren't affiliated with a state, but could be harbored by the state. All these different agencies — the FBI, the CIA, the Department of Defense — tried to come up with efforts to combat it until it became clear that that wasn't successful. We had a successful terrorist attack on the United States, so we created a whole new federal agency—the Department of Homeland Security—to put them all in one place. This is obviously not an issue of that scale, national security, but it is one that I think the effort is going to be to deal with it in a piecemeal fashion until it becomes clear that is not enough; or, you get another group of politicians in place who are more likely to think that creating a federal agency is the answer to fixing problems.

Tom Potter: Or until you get a really sizable financial disaster that dominates headlines for a month, which motivates calls for regulation and legislation, and political pressure for some sort of brand new regulatory structure and that keeps all of us in business for a long time.

Matt Lyon: That's where Dodd-Frank came from; that's where the '33 and '34 Acts came from.

Josh Ehrenfeld: If you think about it, there is really not a lot of true regulation that was focused on the World Wide Web or the internet. It was sort of allowed to be free and it's thrived from a lack of regulation. Regulation is a great way to kill a burgeoning set of technologies. Ideally, if it's a specific financial product that we are creating viA blockchain, then it makes sense for that to be regulated through channels to the extent that it hits investors, etc. But if you are talking about the underlying technology, it may not make sense for any pure true regulation to focus on that. Let it do what it's going to do, and when it hits an end product that is in an existing bucket of regulation, then it will get picked up at that point.

Audience: *This looks a lot like stocks. Has anybody tried a cryptocurrency equivalent of a bond issue? Would that be possible?*

Josh Rosenblatt: I know one sentence on this, which is yes. It's difficult. From what I was told, the marketing was there but the product wasn't quite there. But there is a real need. Quick story: I had an investor and we were out in the market looking for a loan. We had an investor that

wanted to, instead of cash, loan us cryptocurrency. The principle would be in cryptocurrency, the interest would be in cryptocurrency, the repayment would be in cryptocurrency. The unique problem with this particular cryptocurrency was, if you hold it, you get these "air drops" of free tokens that come out of nowhere and you don't know what they are and you don't know when they are coming. It's just like "surprise here are these free tokens," which makes it really hard to do a loan in. So we were trying to find a call option in case the value went up. We were trying to find a call to protect our risk. So we were looking for unique financial products and the market is, at least to a start up company, just not there yet.

Gary Pulsinelli: We've made a lot of allusions to smart contracts. Ryan, do you want to expand a little bit?

Ryan Gallagher: We've brushed through a lot of this already. The Ethereum blockchain and smart contracts. I'm going to be really short and simple so if you guys want to jump in at any point, if you want to dig in a little deeper feel free. Ethereum is a global scale computer. Think of it that way. It's a platform on which anybody can build a program or an application. It can be shared by anybody in the world and used by anybody in the world. The Ethereum blockchain is supported and managed by all of its participants.

I like to make the comparison between, you might have heard that bitcoin is the digital gold; well, on the Ethereum blockchain, its native token is ETHER, and I like to think if that as digital oil because it powers the Ethereum blockhain, and it powers all the transactions that take place in this environment. It also goes to pay what is called gas for the miners. That is their fee for sending these transactions and making these exchanges over this technology.

Smart contracts are just an example of one of these programs that can be built on the Ethereum blockchain. Like we said they are simple "if-then" statements. They are very simple but they can be built out to be very complex. Smart contracts define the rules and penalties like traditional contracts do but, you may have picked up through our discussion, that they also enforce the repercussions of these agreements that you code in to these smart contracts. A classic example of this is a vending machine where you deposit your money and you make your selection and delivery is irrevocably triggered. You can't put it back in and we don't need a guy in the vending machine passing out your snacks, it's there.

But like a vending machine, smart contracts have to be maintained. They have to be audited and cared for because code is risky. Code is

something that has to be kept up with. So we audit smart contracts and treat them as intellectual property. I'm giving you some more detail on smart contracts on your handout there. Just always keep in mind that this technology is only as good as the people that write them. As a lawyer, know that if code is exploited, there is no efficient way to stop the exploitation, short of going back and getting all of the operators of this community that you are in to agree to scale back what's happened. Depending on the size of the organization or community that is involved in what you are doing, that can be an impossible process. Those are my simple points and I've got some more detail for you.

Gary Pulsinelli: Just to wrap up, most of you have be talking optimistically about the future and all the possibilities of these things. We should also keep in mind the dangers this presents. We talked about it a little along the way. But what are some of the risks that we should be watching out for?

Josh Ehrenfeld: Security. That is the obvious one. Once you buy a prize, it's yours to keep. It's there. If it gets hacked, it's hacked. Security, that has prevented some mover activity in certain spaces, healthcare being one of them. That's a problem that has got to be dealt with. Obviously there is levels of insurance and things you can utilize to handle that, but I don't think there is enough catastrophic insurance for certain industries to be comfortable yet.

Tom Potter: I think the fraud risk rises exponentially with popular enthusiasm for anything new and not understood.

Matt Lyon: Especially when there is this concept of: "I have to do it now because it's growing quickly and I have to sell before it deflates."

Ryan Gallagher: There are a lot of people working on it. My opinion is, this is not a fad. Major institutions are making their play in this and there are billions of dollars going into the development of it. I would expect it to grow.

Tom Potter: To that point, we've got to distinguish, as you pointed out, the technology from some of the more faddish uses of it just now. Because all of the big players on Wall Street are looking really, really seriously at this as a way to speed up, and provide greater integrity to, and far less transaction costs, for the whole clearing and settlement process. If that can come down with a high degree of security to instants, instead of a T + 1 settlement cycle, then that is going to increase transparency in markets and efficiency, and yada yada.

Josh Ehrenfeld: A better example is the auto industry. If you could create a more efficient process, whether it's supply chain, whether

it's in the manufacturing facility, you are going to bring the cost of cars down. There is an immediate consumer benefit to that, and that's where the technology has the capability. The financial sector is frowned on sometimes by folks. Creating efficiencies in Wall Street is great, but that's not something that people who aren't on Wall Street care about. But people do care about lower car prices, they care about better healthcare and more efficient interactions with their physician.

Tom Potter: Let's take the same technology and define the use case as one of logistics in responding to Hurricane Florence—supply chain. The anecdotal version of that is Walmart tracking the sales of strawberry pop tarts, which zoomed in advance of storms in coastal areas. They know that once that trigger happens, that is going to trigger a cascade of home supplies, cleaning supplies, building products, pallets of water. All of that kind of thing.

Gary Pulsinelli: Well, we've answered a lot of questions as we went along, so should we wrap this up?