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Episode title: From tokens to stablecoins & everything in-between: The complex ecosystem of digital assets

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Rabihah Butler: My name is Rabia Butler. I am an enterprise content manager with Thomson Reuters and I have with me today Gabriel Hidalgo and Teresa Anaya and what we're going to be talking about are digital assets are sometimes referred to as cryptocurrency, but really a whole lot more. As a previous attorney, I like to make sure I get all of the disclaimers out of the way at the beginning, and so what I want to make sure our audience knows, is that this isn't intended as financial advice. It really is a conversation with some experts letting you know what to look for what in the world of digital assets and cryptocurrency. I could not do a description of either of them justice. So, Gabe, if you don't mind, could you just allow let out listeners know exactly who you are?

Gabriel Hidalgo: Sure, hi everyone, my name is Gabriel Hidalgo. I'm a managing director at FTI Consulting located in New York. I have, I guess, over 24 years of a combined legal and compliance experience that includes being the chief compliance officer at 2 crypto native companies as well as being the chief compliance officer at retail at that normal what we would call traditional finance banks. My background is purely on the compliance side, although I am a technical enthusiast for crypto and I've been involved in the crypto space initially as an enthusiast beginning in 2011 and then professionally since 2015. My background on this is really from a BSA AML and sanctions perspective, but I understand how crypto works, how the blockchain works, and is it for our industry, how we surveil it. And so, I expect this to be a very engaging conversation. Teresa and I've had the opportunity to meet and discuss at ACAMS which is a specialty conference located well this year it was in Las Vegas. It tends to be every year either Vegas or Hollywood, Florida where we sat down and I think we spent over two hours just talking the in's and outs of crypto. So, Rabihah had seen us talking and then joined the conversation, and she thought this was a great idea. And I agreed. So here we are. Over to you, Teresa.

Teresa Anaya: Thanks, I'm super excited to be on here with you, Gabriel. I know that we both had enjoyed the conversation at ACAMS, I was very refreshed to find someone who had been in the same space of compliance in crypto longer than I had been, which was great. I'll go over my background. I've been in governance, risk and compliance for 15 years, sort of started my governance risk and compliance doing contract work for the FDIC during the financial crisis and working on investigations of failed financial institutions. Moved on to work on many remediation projects for failures in anti-money laundering or fraud detection for several different banks and then helped Bank of America build out their proprietary KYC system and help MoneyGram get out of the deferred prosecution agreement with the United States government. I moved onto to do work, working for Blockchain Intelligence Group, they were building software to track, trace and monitor cryptocurrency and worked with Robert Whittaker who's formerly with the Department of Homeland Security on how to build the software, so it was easy to track and easy for compliance analysts to be able to determine the illicit activity that might be going on for crypt currency exchanges or cryptocurrency native businesses. I am currently the BSA officer for Trust Token. Trust Token is known for developing TUSD, it's a U.S. dollar stable coin backed one to one with U.S. dollars or dollar equivalents. And then we also created additional currencies. They're not as widely used because they're not based on the US. dollar but Canadian, British pound,

Hong Kong dollar and Canadian, Australian dollar. And then we moved forward and created a platform called True Fi IO and that is an uncollateralized decentralized lending marketplace where we've initiated over \$1.5 billion in uncollateralized loans with less than .1% default rate, which is astounding in the environment that we're in. So, hopefully that's a quick enough background so that your audience understands our background.

Rabihah Butler: And to translate that very effectively they are both incredibly smart people who know a lot more about this than me, and I'm hoping that this conversation will help you guys understand it as much as I, so let's kind of start from the beginning. If someone were to come up to you and just ask what is a digital asset? What would your first answer to that be?

Teresa Anaya: It with regards to my background, my first answer would be a digital representation of currency. That's just one aspect. It can be a representation of a lot of different types of payment tokens NFT's and which are non-fungible tokens or in gameplay, it could be gaming tokens. It could be representation of like airline points, those are digital assets, but for the purpose of our conversation I would say it's a digital representation of the US dollar, which is what TUSD is.

Gabriel Hidalgo: And I think I think it's important to, I guess, start at the beginning when we're talking about crypto what Teresa and I and you Rabihah will be talking about is really there's several different types of tokens or coins, and they use that word is used interchangeably, but I think it's important for people to understand, for example, Bitcoin, which is probably referred to often as a granddaddy of the crypto's, is really a digital asset that is created online it's created through a process called mining where computers solve complex algorithms and the first ones to solve get awarded a block of these of these coins as a reward. And it's nothing more than solving, you know, complex mathematical equations over and over and over and over until someone is afforded or not afforded, but is awarded that prize of a certain amount of Bitcoins. Now, Bitcoin itself, the most common question that I get asked is how is the value of a Bitcoin established? It's really the marketplace, so the marketplace decides how much a Bitcoin is worth, and that's the price that you see on an exchange. That's not set by centralized authority of any kind. It's really whatever people, institutions, entities, whoever trading for it is willing to pay for it. There are order books out there that seek to match out buy prices versus the sell prices. And that's really how the price for Bitcoin is set. There are other different types of crypto's as Teresa had mentioned a stable coin. A stable coin is a crypto that's backed typically by some underlying fiat or some other asset that has a stable price, hence the name stable coin. And so, for example, a US-based stable coin, a U.S. dollar based stable coin the premise is that there is a basket of U.S. dollars for there's one U.S. dollar, sorry, there's one U.S. dollar for every U.S. dollar stable coin created, and so that's held in reserve so that, for example, if I wanted to trade in my U.S. dollar stable coins, I go to whoever the exchange partner is, where I'm able to exchange it, and I should be able to get the fiat, which is the physical currency deposited in my bank account by exchanging or trading those U.S. dollar stable coins for U.S. dollars. And so that's like a little bit of a nuance here because we want to make sure that when we talk about crypto, there's very there's a big difference between like a stable coin and a regular asset. The marketplace determines one rate, whereas with a stable coin it's really, it's typically pinned, it's pinned or pegged to a specific asset that gives it its price.

Rabihah Butler: So, when we're talking about digital assets, what would be, what are the roles of decentralized finance and central bank digital currency and native currency? Where do those things fit in?

Gabriel Hidalgo: Wow, that's a that's a big spread you got. So, the concept behind decentralized finance is that you don't have a centralized control point for the way that the decentralized finance system works. So, for example, you may set up an authority to issue a certain type of coin and you may set that up for the exchange, but there is no, for example, there is, there is no one person that controls that. It's typically set up by an organization and Teresa can speak more on this, but like for example, there's something called a DAO and can Teresa get into that that are typically set up for some of these DeFi organizations where they provide the guidance and the guidelines for how things are going to be, but typically you can join that and you can be part of that by owning coins or, you know, providing assets to the over overarching build. Whether you're a coder or whether you are someone who's going to take up the governance of how it's going to be. But the key is that there really is no one centralized point of contact. There is no one centralized authority, it's dispersed across the network, it's dispersed across the organization, and so DeFi relies a lot on smart contract logic for a lot of what goes on within that. So, for example, if I'm trying to make a trade on a DeFi exchange it's not like a coin base where you have one centralized organization and they set the rules and they're controlling a lot of what happens within that marketplace under their rules on the file you have certain smart contracts that run the exchange and those the rules within the smart contract are already agreed upon by the organization as a whole, but it's automated so that the system automatically does what it's supposed to, as opposed to having sometimes manual intervention some of these other centralized groups, but Teresa can you explain for everyone what a DAO is?

Teresa Anaya: So, I'm kind of back up back when I was just getting introduced to crypto. I actually ran across MakerDAO I and correct me if I'm wrong, but I think they're the oldest running and successful Dow.

Gabriel Hidalgo: I would say the oldest running. I think success is really in the eye of the beholder, but they have been around for a while.

Teresa Anaya: Well, they still exist, so I guess if that's the measure of success of just existing then then maybe that's it.

Gabriel Hidalgo: Yeah yeah, yes.

Teresa Anaya: So, I was introduced to it and DAO is a decentralized autonomous organization, D-A-O. And a lot of people have not heard of that, and the idea is that there is no central party, it's a group of people who come together to be part of an organization and they collectively make the decisions, typically democratically, that those group, the group of people can decide how it's going to be governed. So, they could do it, however they want to govern it. For my purposes of my company, Trust Token created TrueFi and we created the DAO is very much a learning process for me because although I was aware of MakerDao I had never been really part of it or participated in. And so, over the last two years we created TrueFi, a decentralized uncollateralized lending marketplace. And just in the last few months we have actually moved all of the infrastructure that we've built. Having been a company of trust token into a DAO, a decentralized autonomous organization and the idea is that you can now start to do finance in a decentralized way anyone can come to the DAO to set up a portfolio of lending and borrowing which allows people to participate in borrowing and lending that may not be available to other participants around the world. It just makes it so much easier. Hopefully that gives a little bit of a background about a DAO and my personal experience building out through TrueFi, I certainly don't mean this to be a commercial for TrueFi, but it's my personal experience of what we've done.

Gabriel Hidalgo: Now, just before we finish here, Rabihah, another thing that you mentioned were CBDCs which are central bank digital currencies and what that is attempting to do is to digitize whatever the representation on the fiat or traditional finance is, is created by whoever the central banking authority is so, for example, in the US there have been some there has been some work done by the Fed Reserve Bank. in Boston and New York and San Francisco to study what it would take to create a central banking digital currency, basically a US digital dollar that's issued by the Federal Reserve, you know to work hand in hand with physical representations of U.S. dollars, which is what everyone else is used to. You know, when you when you open your wallet and you take out a \$10.00 bill that's a physical representation. So, that is really what CBDC's are, and there's several countries that are currently working on that. China is probably the most prominent. They're creating a digital version of their yuan, the renminbi based out of China.

Teresa Anaya: I believe that's out Gabriel. Yeah, I think it's been out for a couple years now, right?

Gabriel Hidalgo: Well, it's in testing. I think. I don't know if it's fully out like, but they're what they're doing also, is they're trying to tie that in with their I believe the social what that that social monitoring thing that they do? Yeah, the social scoring that they do, so it'll be able to tie, for example, how much money you have in your wallet. They'll know exactly what you have as well as tie that to that social scoring so there's, you know, there's talk about all that going on within China, but..

Teresa Anaya: I think a lot of debate over CBDCs is because it can be really you can be monitored a lot more closely than currently with the current banking system they would be able to track and trace significantly so there there's privacy concerns there, and I'm personally not a big fan of that idea.

Rabihah Butler: Oh, so from what I'm understanding if I'm getting what both of you are saying correct is that if the economy or economic interactions were a mosaic, then crypto would just basically be like one glass pane in a larger picture and not everything that we're dealing with electronically, right?

Gabriel Hidalgo: That's true if you think about how electronic payments work currently, the vast majority is done like through certain credit card networks the ACH network, automated clearinghouse network that as well as through wires the SWIFT network, which we've seen with the Russian and Ukraine war. That's going on. There's been sanctioned entities on that SWIFT network, so they're not able to Russian some Russian institutions are not able to actually conduct wire transactions which is the lifeblood for a lot of the merchants and a lot of commercial activity that we see out there. If you take all of that, what we would call, what we would refer to or what we refer to in the crypto industry as traditional finance. That's what we're building and what's being built from a crypto perspective is really this alternative financial environment, whereby blockchains per, you know, are the rails on which these transactions move. They're tracked, you know, and a big difference, and I think one of the things that people need to realize is, you know, we always see these negative news headlines about how crypto is, you know, is hard, and it's evil and it's being used by criminal elements and it's untrackable, which is not true. You know, here's myth one. Myth one is crypto can't be tracked. That's not true. There are some coins that are purpose built to be harder to track, like privacy coins, however for the vast majority of crypto tokens and assets out there, you can track them and there are very good third party blockchain analytical tools that you know institutions and individuals if they want can get, you can even do it open source if you want it to, although I would highly not recommend it. It's very hard, but you can track. The difference is every time that a coin is created on a blockchain. For most blockchains you can track it from the minute of inception or what we'll call the genesis block all the way to where that coin is sitting now whoever is

wallet or whatever entity's wallet. Now an important thing to keep in mind is that the wallet itself, for the vast majority of crypto tokens and assets they don't carry KYC to know your customer information, so they're not going to say you know Teresa's wallet or Gabe's wallet when you're looking on a blockchain explorer on the open source one. Now, what the third party blockchain exploring companies do is they may have a priority set of information, so they're able to piece together who owns what from a wallet perspective and that way you can know you know who's whose wallet, it could be. Again, that's it's really.

Teresa Anaya: One thing that you just touched on the address basically being anonymous, you don't know who's behind it unless you can get to the KYC information which is typically on exchange or whatever. One thing that we weren't able to talk about accounts was my extreme interest in self sovereign identities and DIDs, and some of the things that are now being brought to market including from social is sort of an identity passport built upon this same technology, so while it's not a digital representation of Fiat currency, it is a use of blockchain technology to help facilitate what's trying to be built with crypto and blockchain. Very interested in that and how the identity can continue that passport ID or idea does not transmit the personally identifying information, but it is something that you can use to validate that that person is who they are and you can get back to the identity of the person. To me that's fascinating, and something that's very much new needed in the space and looking forward to see how it's going to transpire from here. Yeah.

Gabriel Hidalgo: Sorry, just to get back on that. It's really going to be, I think with the digital identity it's really going to be how it's implemented. And there's several different I think initiatives going on right now, for example, on Ethereum I think the smart contract features within that blockchain help to carry that information for certain, for certain aspects, whereas I think with the Bitcoin blockchain you would have to probably create a layer on top of it to transmit that information, just based on how it's built currently, but I do agree that's a fascinating turn of events if they're able.

Teresa Anaya: Yeah, you just brought up a point that there are different blockchains and there's differences between them, and so my world tends to be centered around Ethereum and you're quickly reminding me that Bitcoin. Is different and it is and it's complex. And it continues to get more complex.

Rabihah Butler: So, keeping us kind of on track, Gabe, what in your mind is the second biggest myth of when it comes to digital assets and things like that?

Gabriel Hidalgo: I think the second biggest myth is probably that dealing with crypto is difficult. I think there are so many guides online on how you can establish your own wallet. For example, there's an open source wallet product called MetaMask. That most people you know it would take them probably 15 to 20 minutes to set up. It's not too difficult, and at that point, guess what you would have a wallet address that you'd be able to use for Ethereum based coins as well as some other blockchains, you're getting a Bitcoin wallet. You can pretty much do by yourself for free setting up through, then there's several tools online that you can do this, so the ability to set up basically your own wallet is easy. I think that some of the other what I would call the centralized exchanges make it even easier for you to open up accounts to do trading so, you know, whether it's Coinbase or Kraken, whether it's some of the other exchanges that are out there internationally, they have made it very easy from a user experience to open up those accounts. Now you know neither Teresa nor I are going to tell you or advocate investment as that's a personal choice and we believe that that you know everyone has to make that choice for themselves, but the myth that somehow it's very hard for anyone to do this, I think is not

true. It's very easy, and nowadays they've made it even easier. Compare that to where we were in 2013 or 2012 when we had to follow some complex, you know, had to install complex software and be aware of some of the things to create a wallet. Nowadays it's very simple and opening up a centralized exchange account in order to trade or transfer funds I think is as simple as well, so I think those two moods that you know those two myths. Is that crypto somehow can't be tracked and then that crypto is hard and you can't open wallets with ease and you can't like set up accounts with ease. I think that those two things have kind of gone by the wayside. They both can be done.

Teresa Anaya: Yeah, it's been, it's become a lot easier and I'm a user of MetaMask and one of the things to that. I'd like to point out in the podcast here is that a MetaMask, wallet or Ledger, or a device where you control the funds they're not on a centralized location makes you have to be more responsible for making sure that you keep your funds safe. It's a different mindset. It gives you a lot more control, but it also means that you've got to be aware of where your assets are and make sure that you protect them and that's something that the public is going to need to get used to as we move forward. I don't think that's something that we can dismiss and we can't sugarcoat it. That's our responsibility, and that's one of the I think that one of the tenants of having Satoshi Nakamoto build Bitcoin was to give a person the ability to control their funds without an intermediary, and that's what a metal mask or ledger allows you to do or other device.

Gabriel Hidalgo: And just before we move off this topic, there's a big difference between the two devices that Teresa meant. MetaMask is a software based wallet, Ledgers, a hardware based wallet and typically the hardware based wallets are a little bit more secure because there's a lot more cryptography involved and also you know with MetaMask or other software based wallets, they're what are known as either warm or hot wallets, so you're connected to the internet typically, unless you completely disconnect your computer whatever the device is that you're using to access your funds, whereas with a digital wallet, you can basically create it so that you're not always connected to the internet and you can only use that hardware device to make transfers that actually protects a lot of the consumers out there. If they were to use like a MetaMask plus a hardware wallet like Ledger.

Rabihah Butler: You guys have actually come to a point that really interests me and I'm hoping that you guys are interested as well. What happens when I lose my password or I get scammed? Or like is there any way to get that money back? Because that's one of the biggest myths that I have heard and. Always kind of was concerned about.

Gabriel Hidalgo: So I, so I think I'll start and then I know Teresa has probably got her own anecdotes as well. I think there's a few things, so there's a secret passcode that all wallets have. It's anywhere between 12 to 15 to however many words. That passcode together is like the secret key. It's your private key. It's the one that you use to establish that wallet, whether it's on MetaMask or any other of the devices or hardware wallets or any other software wallets. If you were to share that passcode with anyone, then they now have the keys to any assets that were being held in that wallet they can move it at will and it would be very hard typically to get those funds back. Now, that doesn't mean it's impossible. You know, there have been hacks that have occurred with other, you know, exchanges whether they're centralized or decentralized, and the rest of the community has banded together to not only track those funds as they were being hacked, but also impose freezes at these gatekeeper institutions like centralized exchanges where they're able to basically hold onto those funds or those

assets before they get transferred away. That doesn't always happen, and it really depends on you know where these funds are being moved to, but Teresa, you can talk more about the movement.

Teresa Anaya: Yeah, I was, I'll give an example that when I was working with Robert he provided this example from law enforcement. I don't remember all the details now, but basically there is someone had been arrested and it was. It had to do with Bitcoin. Bitcoin was on MetaMask or Ledger and the criminal or the person that was accused had made the phone call the one phone call and the phone call was to the girlfriend and the instructions to the girlfriend were to take those 12 words and go get an exact replica. I believe it was a Ledger and so while law enforcement had seized the actual Ledger, it's a fund drive where you would have your crypto. They thought that it was safe to put in evidence bag and what happened was the girlfriend went out, got a new Ledger typed in the 12 word phrase and then now she was able to transfer those assets and so later law enforcement looks on the what was in the evidence bag and there's no balance on it. That's something that law enforcement's had to learn how to do is, as going through the seizure. That's one thing that we've included in our cryptocurrency investigator training program was a bit about how to take it in evidence and seize the assets and move them over to a law enforcement controlled wallet.

Gabriel Hidalgo: Yes, there's a saying in the crypto industry. If you're not holding your keys that you're not holding your coins and so the key is there for lack of a better term, the key is really making sure that that that private key is protected and typically whether it's a software wallet or hardware wallet you never share that with anyone, and there's a public key as well and you can share the public key, but the private key you will never share, because if you do it gives whoever holds it the ability to move those assets at will, and so unless you're lucky, and unless you have cooperation from centralized exchanges, unless you know are able to get help to issue hold orders at certain centralized exchanges where they may hold these coins, it'll be very hard for you to get those assets back.

Teresa Anaya: One thing you're asking if it was able to get the assets back and from my experience, my understanding is being able to retrieve those assets once they've been stolen is you have to get the private key and that can come from law enforcement leaning on the criminal to get the private key and leveraging them and getting them to cooperate to give the private key. I've not heard of anyone breaking the encryption yet. I would be surprised that if they did and they were successful that we would all know it, so they may have, but I doubt it. It'll leak at some point if that happens, but right now it's pretty much law enforcement being able to lean on the criminal or associates or find some way to get that private key. It is very difficult to retrieve them.

Rabihah Butler: So, what we're coming to the end, and so I'll do a couple of really quick round robin questions and hopefully this will, this will leave us with a little bit more information. So, what do you think is more transparent? Digital assets or traditional assets?

Gabriel Hidalgo: Digital assets, everything gets tracked on the blockchain and on Fiat they're tracking volume, not specific bills, so Fiat you know, for example, U.S. dollars have a serial number that's serial numbers never tracked, right? But you know if I give Teresa specific \$10.00 bill that specific \$10.00 bill no one would be able to tell me where that moves after I've given it to Teresa, whereas on blockchain every single coin is tracked from the inception all the way to where it's where it's currently sitting in whatever wallet.

Teresa Anaya: Yeah, so the investigation software that they've created you can just click and put the address in and click a button and it shows you from where it came from all the way the route that it's taken forward to within the last 10 minutes. I worked on one of the first criminal Bitcoin cases for Hong Kong police and it was a theft of \$6 million and we were able to track at 48 different directions and we were able to track it to its exit points all but I think \$1000, which was phenomenal. At the time, this was a few years ago. So yeah, absolutely transparent. You can see it. It's amazing, it's really kind of cool.

Rabhiah Butler: So, I'm looking at just kind of the things that I've reviewed and it looks like Japan definitely has regulations on the books which someone has regulations on the books. European Union, United Arab Emirates, United Kingdom and even the United States have regulation that is kind of under construction. If you were given a crystal ball, do you think that regulatory, that we will be able to regulate this very effectively?

Teresa Anaya: Well, I think we're closer than we've ever been. The European Union just passed I call it MICA, but I heard someone say today, "Micah". So, it's MICA is the acronym that they have for. We're very pleased to see that pass. I'm still trying to get through all the pages of it to get a better understanding, but it's good that it was passed. I think that our lawmakers are starting to become a lot more educated about it. We've got industry lobby groups that are really helping them with that member of the blockchain association and the Digital Chamber of Commerce where we work with the different subcommittees in Congress as they have questions to help them understand it better so that when they do start crafting regulation, it's not, you're not duplicating what's already there, but you are addressing the things that are native to crypto because there are problems that come up in terms of needing regulation for something related to crypto that doesn't really exist in the current regulatory environment and it's coming around and I for the most part I for the most part U.S. regulators are listening and they are not coming in with a heavy hammer. They may try, but then the industry comes in and says but wait, look at this and evaluate it this way and they seem to be listening to that and that's good, I think with the current environment we're in, hopefully there'll be a quicker response and we'll be able to get some of this legislation actually passed versus being stuck in in different committees in Congress.

Gabriel Hidalgo: I think I think what we're all looking for is a synchronization globally and not only globally, but here in the U.S. as well. And so, what would be great for us in the U.S. would be if we had a one country system versus a 50 state system and what I mean by that is if we had a federal framework regulation that covered crypto, the crypto industry and all the products and services that were that are being developed it would be a lot better than having every state with its own, you know, little with its own set of rules that bent now you have to see whether or not the other state wants that as well. But you know, again, one of the first states to regulate crypto effectively was New York State, with its Bitlicense regimen. But the problem is like if you were to take what, the bit license requires and you compare that to what's required in Wyoming or Nevada or Montana very different. In some states they don't. They don't even regulate it, they look at it as you know, similar to money transmission and so they treat it kind of like a MSB which is a money service business. So, they would treat, you know, a centralized exchange similar to like for example Western Union or MoneyGram which is very different. They're very different entities, so I think for the for the industry they would love to see the federal government step in and say we have this framework. It's going to applied nationwide. No more 50 state trying to figure out which state does what, but it's one federal governance framework and similarly globally we would love to see one unified approach, but you know, we'll see what happens. But I agree

100% with Teresa compared now versus where we were three years ago we are moving in the right direction. I think.

Rabihah Butler: Well, thank you guys. Both so much for your time and all your amazing insights and here's hoping that in three to six months, Gabe, you'll be right. Everyone will be on one system and we'll be back here doing this again.

Gabriel Hidalgo: That would be super optimistic.

Rabihah Butler: I'm an optimist, though.

Teresa Anaya: I am not putting my crypto down on that.

Rabihah Butler: I'm just being an optimist. Kind of got to do it.

Gabriel Hidalgo: No worries.

Rabihah Butler: So, again to our listeners, we are not offering any financial advice, any tax advice we are not promoting any particular products. We definitely recommend you go and look at your independent financial advisors for anything that you want to do in the future, and we appreciate you taking the time to listen to what we've got to say.

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