

Citi Digital Dispatch, E1: Regulated Liability Network

00:02 Ryan Rugg

Welcome to Citi's Digital Asset podcast series, a show about all things digital asset from the team here at Citi. I am your host, Ryan Rugg, Head of Digital Assets for Treasury and Trade Solutions at Citi. This podcast is for everyone: entrepreneurs, corporate treasurers, strategists, and policymakers. We explore digital assets in the financial sector from tokenization, digital money, evolving regulatory market, insights from experts and much, much more.

In today's episode, we are discussing the Regulated Liability Network. Our expert guest today is Tony Mclaughlin who runs Emerging Payments and is Citi's lead advisor on RLN. Very excited to have you here. We talk about what's going on in digital asset space, what's happening with regulators, what's happening with adoption. We're excited to hear your perspective. Why don't you start by telling a little bit about you and what you've been working on recently?

00:57 Tony Mclaughlin

Yeah, sure. I've been working in the payment space for the past 30 years, more or less, in different institutions, and I tend to focus on new things happening in payments, so instant payments, digital identity, open banking, and laterally in digital assets.

01:15 Ryan Rugg

So, kind of double clicking into digital assets, you know, you said you've been in payments 30 years, over the last ten years, what do you think about adoption and in the next five to ten years, how do you see that changing?

01:30 Tony Mclaughlin

Yeah, in that time frame, I guess, one of the big stories has been this, you know, the publication of the Bitcoin white paper in 2008. Really introducing a new paradigm for how payment systems might work. Giving a different idea about what money is because Bitcoin is very different from the type of money that you and I, we traditionally consider to be money, which is a deposit on a bank. A deposit on a bank account is a liability of a bank, you know, they owe you the money back, whereas in Bitcoin, nobody owes you anything. It's really a kind of commodity form of money. So, I think what we've got is this kind of situation where physical money is coming to an end. But there's a debate about what kind of digital money we're going to have in the future. That's a very interesting debate.

02:27 Ryan Rugg

Yeah, I agree. I was just on a panel with the general counsel of Circle and talking about stablecoins and kind of what's the future of stablecoins, and, you know, it's interesting to see the differences. So, I guess let's start for the audience describing the different types of digital assets out there from tokenized deposits, stablecoins, central bank digital currency, CBDC because there are several different flavors of it, and I think that kind of having a little understanding of that helps the audience.

02:55 Tony Mclaughlin

Yeah, absolutely. I mean, there are to my main five broad, different kinds of digital money possible. One of them is CBDC, which is a liability of a central bank. You know, the

banknote that's in your wallet is a liability of the nation state itself, you know, the full faith and credit of the sovereign. So, we could have that kind of money in digital form, and that would be one way of running the economic system, very much focused on the central bank, central bank building up deposits, and we then have to decide what to do with those deposits and what's the other side of the balance sheet. And the second alternative is really the incumbent system, which is the commercial bank money, the deposit that you have with your bank account, I have with my bank account. That's really the biggest form of digital money on the planet today. The third form of money, you might think of it as being FinTech money. So, PayPal and these e-money providers, they are typically regulated non-banks. Some of them do have banking licenses, like PayPal has got a banking license. But many of them don't have banking licenses, but they're otherwise regulated by the nation state. And those e-money wallets have hundreds of millions of customers around the world. So those are three alternatives: central bank money, commercial bank money and e-money. The next one is the typical public cryptocurrency like Bitcoin. Again, not a liability of anyone, a commodity form of money, and the final one are the stablecoins. And the stablecoins to some people, if you're a Bitcoin maximalist, the stablecoin is a kind of Frankenstein's monster. Because it's taking the crypto technology, but applying that to really an instrument, which is mirroring fiat currency, the whole ideology of Bitcoin is the antithesis of fiat currency. So, bringing these two things together, again, if you're a bitcoin maximalist is a bit of a Frankenstein's monster. But those are the five runners and riders. Those are the five alternatives. It's the biggest form war we'll see in our generation. So very interesting race.

05:20 Ryan Rugg

Really interesting. And I think it's important for regulators to understand the differences in them and the different risks in each one, sort of they've been bucketed together. But, like, tokenized, you know, liabilities are very different deposits are very different than a Bitcoin. You know, it's very different than a stablecoin. It's very different than a CBDC. They all have, you know, different risks, different, you know, applicability, you know, securities law versus, you know, cash. So, it's really interesting. And I think that, you know, to start really understanding and see adoption, we have to start regulating them differently. Like, right now, it's one bucket. I think this is just not going to be able to be scalable.

06:02 Tony McLaughlin

Yeah, those distinctions are super important. And one way of categorizing them is that three of those options are really at this moment, clearly authorized and issued by entities that are licensed by the nation state. So, a central bank operates under law. The banking providers operate under banking regulation, the regulated non-banks operate under e-money licenses. That's the sovereign currency system. And if you think about it, whether you've got a deposit at the central bank or a commercial bank or with an e-money institution, it's the same kind of instrument, which is, you give your money to an institution and they've got to pay you the money back, whether it's the central bank, the commercial bank, or the e-money institution, that's not the case for the other two alternatives, which is the Bitcoin public cryptocurrencies plus the stablecoins, because they are not licensed by the nation state, and they're not liabilities in the same way. As the first three that we discussed. And the thing about it is that if this really is a format war, you know, in the digital economy, the format wars tend to be winner takes all. You know, you're either super successful or you're not, or you're nothing. So, think about the players on the field. You've got the central bankers, the commercial bankers, the FinTech, the crypto maximalists and

the stablecoin adherents and the Big Tech, and they're all in this competition for who's going to capture the transaction. And that's extraordinarily consequential because there's nothing more foundational in an economy than money.

07:55 Ryan Rugg

Absolutely. It'll be an interesting race. So, recently, you've been working on a project called the Regulated Liability Network. What's the inside scoop on that? I know that you just finished kind of Phase 1, releasing a paper. What was found? What was interesting? Is, you know, are we going to see a tokenized deposit come out of the US banks in the future?

08:16 Tony Mclaughlin

Yeah, the Regulated Liability Network is essentially trying to address this question. Can you take the shared ledger technology, which was developed to overthrow the traditional system and apply it to the traditional system? Again, I'm very aware that if you're a Bitcoin maximalist listening to this podcast, you think here comes another Frankenstein's monster. But there's an interesting question here, which is really about what you might think of as being the database of money. So, the way that traditional money works, that bank money works at the moment, is every bank has its own database. So, your deposit with your bank is recorded on your bank's data center. They've got a database in that data center, and it's a little island of data protected by your own bank. Now, then if you zoom out, there are 25,000 banks, let's say in the world. So, 25,000 data centers, 25,000 databases, separate islands of data. And shared ledger and blockchain, you've got a common database essentially. So, the question is, is there the possibility to migrate the traditional banking system? So, take the same kind of institutions, take the central banks, the commercial banks, and the FinTech and migrate them onto a shared ledger. And that's what RLN essentially is, is the idea of moving away from every institution having its own database to having a shared database. And there's certainly something intriguing about that possibility.

10:04 Ryan Rugg

Yeah, it's interesting from my days at IBM, when I was advising several of the banks, as well as clients, enterprise users. Like, that shared kind of source of truth is definitely needed. Because as you mentioned, it's islands of data. It's islands of accounts. So, you know, a large multinational account will have, you know, accounts in multiple jurisdictions, as well as multiple banks, and you know, to manage money across those jurisdictions is timely, as well as, you know, you have to keep buffer, so it's not an efficient use of cash. So, I can definitely see, you know, the applicability for it. And how has it been with kind of the recent news in regards to the failures within kind of the, you know, space within crypto, even though RLN has nothing to do with crypto. Is it tokenized deposit, liability of the bank, right? Is not crypto? Has it, you know, you've been working hand in hand with the regulators kind of on this? Has it changed their opinion, accelerated it? What do you think kind of we'll see in the future on that?

10:59 Tony Mclaughlin

Yeah, I think it's useful to zoom out a little bit and think about how the narrative has changed over time. So, first of all, we had Bitcoin and the Bitcoin white paper, and the idea was that Bitcoin would be a method of payment. That's what it says on the first page of the Bitcoin white paper. It's a peer-to-peer method of payment, and that's not happened. Bitcoin has become this kind of speculative investment, a very volatile, speculative investment, not being used as a method of payment. And then along came this next wave,

which was people who said, well, it's not about Bitcoin. It's about the blockchain technology. And so, the blockchain was the revolutionary thing and not the Bitcoin.

11:45 Ryan Rugg

Oh, my gosh. We just had 500 POCs in my prior role, and it was like, I mean, blockchain was going to solve real poverty. I mean, we tried to put everything on it, which, you know, definitely been a learning evolution.

11:55 Tony Mclaughlin

Exactly. If you got the hammer, everything looks like a nail.

11:58 Ryan Rugg

Yes.

11:59 Tony Mclaughlin

And then the next major event. I mean, this is like, there are many major events. You know, blockchain did have a significant move forward with Vitalic Buterin's innovation around the smart contracting and turning it into a general computer, essentially. So that pushed forward the narrative there. But one decisive point when it comes to money was the publication of the Libra white paper. Because before Libra, central banks didn't take Bitcoin seriously as an alternative to sovereign money, and post Libra, they took novel forms of money very seriously. Because Libra essentially was the idea of creating a non-sovereign central bank. And what that means is an instrument of sovereign power, which is creating currency could fall into the hands of a non-state actor. On a social media network with 3.5 billion people using it. And so, if you're a central banker and you see that happening, then all of a sudden, the national currency does become under threat, does face a credible threat. And that's what created the CBDC wave. So, dozens and dozens of central banks out there saying to themselves novel forms of money may well challenge national money, and therefore, we've got to do something about it. So, hey, why don't we take that technology and apply it to central bank money? And that's been going for a while, and some countries have implemented CBDC. Now, unfortunately, in many of those countries or in the countries that have implemented CBDC so far, consumers haven't been that interested.

13:44 Ryan Rugg

Why do you think that is? Like why is adoption still slow? You know, you know, you mentioned Libra kind of being a tipping point. I definitely agree. You know, you've seen more central banks kind of get involved in this space, albeit not who are designed the same. But why is adoption so slow in this space?

14:00 Tony Mclaughlin

I think there is a massive mismatch between the expectations of the policymakers and the real experience of the user. So, from a policymaker perspective, you know, CBDC is almost like this Rorschach test, where whatever you look at it, you see what you want to see, and you can see the answer to financial inclusion. You can see answers to geopolitical questions. You can see answers to the transmission of a monetary policy. And some policymakers think that it's a cash substitute, a crypto substitute. But when you're a user, you see an app on a phone with a balance. You're not thinking about all of these other objectives that the policymaker has in mind, you're just seeing an app with a balance on a phone. And you're comparing that with the other apps with balances on your phone. And

frankly, so far, the CBDCs are not compelling in that comparison. So, I think we're going through this, you know, evolution. It's, you know, thesis, antithesis, synthesis. It's kind of dialectic process where we're moving on and hopefully getting to better answers over time. And that's where you know this RLN concept, the Regulated Liability Network concept is perhaps moving the ball forward. And it's saying that maybe indeed there is something interesting about the shared ledger technology. But if so, why would we only put central bank money on that platform? You know, one of the interesting things about Ethereum is that it's multi-asset. And, you know, you worked at R3, and I'm sure you've had this experience, which is, if all we're doing is taking existing constructs and putting them on DLT, what have we achieved?

16:04 Ryan Rugg

Exactly. Nothing.

16:07 Tony Mclaughlin

So, we need to explore the delta benefits of the technology, right? Those delta benefits, I think, are there because there are deficiencies of the traditional financial system that might be overcome through DLT. The traditional financial system is not always-on, Ethereum is. The traditional financial system is not programmable, Ethereum is. The traditional system is not multi-asset. In fact, it's made up of all of these silos. Ethereum is multi-asset.

16:40 Ryan Rugg

You bring up a really good point, about, you know, we're not just here to modernize current systems. We're building a whole new technology infrastructure. And I think that's what people have to really recognize that the attributes of this technology from the programmability, multi-asset, all the facts you talked about is really compelling.

16:57 Tony Mclaughlin

Yeah, look, I think there is, I don't know how it happened, but there's this tendency that I call the cult of the use case. And the cult of the use case.

17:12 Ryan Rugg

Are you part of the cult or not part of the cult?

17:14 Tony Mclaughlin

I reject the cult of the use case. So, the cult of use case is this. The new technology comes along. And there's a degree of FOMO, of fear of missing out, fear of being disrupted. And therefore, you say to yourself, well, let's try this technology. And the first question that people then ask is: what use case can we put on the technology? And so, they find a use case and they put it on the technology. So, application, they put it on the technology, and guess what? They find out it works. But it doesn't do anything different to what it was doing on the previous technology. And that's not surprising because the DLT is just a database. And so, if you've got something that's working nicely on an Oracle database, and you say, let's make it work on a DLT, it's going to work in exactly the same way as it did on the Oracle database. So, the question, we shouldn't be doing more use case testing because, you know, the DLT is Turing-complete. It's the same, it's got the same, you know, attributes as a computer system, as any other computer system. It's really, you can consider it as being, the answer is yes. Does your use case work on DLT? The answer is yes. But that's not a good question.

18:40 Ryan Rugg

No. I agree. As mentioned, I've done more POCs in my career that I like to admit. I'm not doing POCs. If it's not going live, then why? To what, to what avail?

18:51 Tony Mclaughlin

Absolutely. And I think that adoption is the whole of the law. You know, because the answer is if you're looking at the technical feasibility of a use case on a DLT, the answer is yes. That's not the question. The question is about adoption. You know, in my career, and I'm sure you've seen this yourself. I've seen many pitches from FinTech and technology vendors that say: hey, if only the whole world used my technology, how efficient the world would be.

19:24 Ryan Rugg

Yeah. Yeah. I get it. But that's not how the world works, right?

19:30 Tony Mclaughlin

Exactly. So, adoption is the central thing to address in one of these projects. And adoption is where many of these things fall over. They don't fall over at technical feasibility. They fall over at adoption. And that's why in the Regulated Liability Network project, we say that RLN is technologically neutral, we're asking people to engage with the concept. The technology is there. The technology can support this kind of a network. But we need to hone in on whether there are real delta benefits that will gather together the regulators, the commercial bank participants, and others to come together to agree to actually build something.

20:24 Ryan Rugg

So that kind of intersection. Do you think that's what's going to be needed to drive the adoption of the Regulated Liability Network? Those parties coming together. Like, you know, you talked about the use case, clearly has applicability, right? You know, multi-bank, multi-token from a client perspective. What's going to take to get to the next level to drive it to production and get the adoption of it and kind of, you know? And how long is that going to take?

20:47 Tony Mclaughlin

Well, the community we have together working on this is taking as much as we can, a scientific approach and coming up with hypotheses to test. The projects are typically looking at the business applicability or the business benefits, number one, the legal viability, number two, and the technical feasibility, number three, in that order. And finding that intersection between the business applicability, the legal admissibility, and the technical feasibility, finding that sweet spot is the exploration. And either we find it, or we don't. But what we have done so far is identify, again, attributes that we would like to have in the traditional financial system. The ones that I just mentioned, always-on, programmable, multi-asset. We'd like to find ways of incorporating those into the traditional financial system. And the other key thing, I think is about RLN, is it brings together the central bank and the commercial banks and the regulated sector on the same side of the table addressing a common question. And that question is: how can we jointly upgrade the sovereign currency system to meet the demands of this rapidly globalizing 21st century economy and digitizing economy? Because if we don't adapt the sovereign currency system to meet those needs, then the users will migrate to the unofficial sector. The users will migrate to the unregulated crypto and the unregulated stablecoins. And over time, if the

sovereign currency system doesn't meet the needs of 21st century digital commerce, then the instrument of power, that instrument of national self-determination, which is a sovereign currency will diminish. So that, to my mind, is an urgent pressing question and not something that the central bank should try to solve on its own, not something that an individual bank can solve on its own, not something that can be really addressed unless you bring together the right group of stakeholders. And that really is what RLN is. It's that journey, rather than being hung up on the destination.

23:23 Ryan Rugg

So, to kind of, like, bring it back. So, RLN to drive adoption, you have to have the right people at the table, which, you know, from commercial banks to regulators to different entities to actually help to drive, you know, a digital first economy, you know, there's a lot of hype around metaverse right now. But, you know, one of the technologies that can enable it, right, is digital assets. Is that kind of, like, always-on, programmability, no pauses, you know, to be able to function, and, like, who's going to win that space, right? As you said, kind of the format ways. Who's going to win in it. But I think it's exciting to see all the parties kind of come together and, you know, push forward this initiative. It's like, one of the first ones I've really seen, you know, to kind of take scale within the US, and I think it's important that what we're doing, and I think that it could drive to adoption in the future.

24:12 Tony Mclaughlin

Yeah, indeed. And we've actually focused on one of the largest use cases on the planet for payments, which is.

24:20 Ryan Rugg

She started small.

24:22 Tony Mclaughlin

Well, you've got to identify a delta benefit that's very compelling. And one of the largest, you know, payments applications out there is the global role of the dollar. You know, the dollar has many global users, you know, that benefit from the convenience of a stable currency with a good legal system and stability. And that's really the reason why the dollar is so prevalent outside of the United States as a settlement currency for trade and for security settlements and for other purposes. And the dollar outside of the US. Those payments have gotten better recently. So, there's an initiative called Swift GPI, which is introduced tracking and tracing into cross-border payments. You know, many people in the past have said things like: well, Swift is slow. I mean, ridiculous. Swift messages move at the speed of light. I don't think that blockchain messages move any faster than the speed of light. But Swift is kind of used as emblematic of the correspondent banking business model. But even so, since the introduction of Swift GPI, cross-border payments and dollars reach the beneficiaries much faster than they did previously. So about 50% of all cross-border US dollar payments reached the beneficiary in 1 hour. I mean, think about that example. That's an importer in Malaysia. Let's say a factory in Malaysia buying a robot from a Japanese company and paying 20 million bucks for the robot. That payment is arriving in the Japanese robot manufacturer's account within 1 hour. Now, that's okay. That's decent, but in many domestic markets, we've now got instant payment schemes. So, the expectation is that it happens in near real-time. So why can't we have a global dollar payment system where the money arrives in near real-time? In today's world, those dollar payments don't get made on the weekends. They don't get made on the Malaysian bank holiday, the Japanese

bank holiday, the US bank holiday, and there are other slices of times where you can't make those payments. Why can't we make those payments in US dollars 24/7, near real-time? And I believe we can through a scheme like RLN. But it goes beyond that because dollars globally is great, but what about multi-currency? And then what about multi-asset? And so, what that leads to is actually a vision that was articulated by a guy called Charles Sanford in 1994. He was famous banker from Bankers Trust, and in 1994, he was writing about what the financial system would be like in 2020. And he imagined that by 2020, we would have built this global system where settlements could be made in multiple assets and multiple currencies on a 24/7 real-time basis. Now, we didn't build that by 2020. But we could. And maybe shared ledger technology is part of getting to that vision.

28:08 Ryan Rugg

Couldn't agree more. Tony, this has been super interesting conversation. You talked about Regulated Liability Network, the need for kind of a global payment system for dollar as well as other currencies and assets, you know, predictions that it would happen by 20, it didn't. But you know, in a quick 10 seconds, when do you expect this to happen? What's your prediction for years? I know it's kind of waving a finger in the air type situation.

28:30 Tony Mclaughlin

Well, I think, I like the phrase, which is: the future is already here, it's just unevenly distributed. You can see parts of it already. You know, within Citibank, we've got 24/7 clearing for financial institutions. We've got 24/7 sweeps within Citibank for multinational corporates. So, you see glimmers of this functionality, you know, coming into the real world already. But I think in the next, in the medium term, five years or so, we potentially will see much more powerful global multi-asset, multi-currency settlement systems, and that will be a major upgrade to the sovereign currency system.

29:09 Ryan Rugg

Wonderful. Thank you so much for insight. We really appreciate it.

29:12 Tony Mclaughlin

Thank you very much.