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- Julia: Hello and welcome to this DerivSource podcast. I'm Julia Schieffer, the Founder and Editor of DerivSource.com
- Blockchain is often confused with Bitcoin. In this DerivSource podcast, Dave Birch, director of innovation at Hyperion Consulting, walks us through the differences between Bitcoin and Blockchain but also explains why the technology is fast entering the financial vernacular.
- Banks are not only exploring various different ways to use Blockchain to comply with the raft of regulation but they're also looking to use it to reduce growing technology costs.
- Here is DerivSource reporter Lynn Strongin Dodds speaking to Dave Birch.
- Lynn: **Hi, this is Lynn Strongin Dodds. We are here with Dave Birch, director of innovation from Consult Hyperion.**
- Thank you very much for taking the time to talk to us about Blockchain. To start, if you could just give us a brief introduction of yourself and company.
- Dave: Sure, and thanks for having me on Lynn, I really appreciate it.
- Consult Hyperion is a specialist niche consulting firm, based in the UK with an office in New York. Our clients are people involved in electronic transactions of various kinds, so the big payment schemes, banks, telcos and so on. Our interest is in secure electronic transactions of all forms.
- Lynn: **The first question we'd like to ask you is what is the main difference between Blockchain and Bitcoin?**
- Dave: That's a sort of complicated question to answer on a couple of different levels. So, I'll complicate the question first, and then hopefully I'll provide a simple answer.
- Bitcoin, the payment system and currency uses a form of shared ledger technology. In other words all of the participants in the network essentially have a copy of all of the transactions, and we call that a shared ledger, and if you have a shared ledger (which is a good thing from many interesting perspectives), because if you have bad actors in the network and they attempt to sneakily change some of the transactions, everybody else has a copy of the ledger, so basically if you want to cheat, you've got to sneak in and change all of their ledgers as well, that's quite hard to do, so that's why we like shared ledgers.
- Bitcoin uses a form of shared ledger, which is called a Blockchain. And there are some different kinds of block chains, but one kind of Blockchain is called a Proof of Work Blockchain, and that's the specific kind that Bitcoin uses, and I think this is why you have this confusion in the marketplace with people sort of talking past each other and arguing about different things.
- So, shared ledgers are a really interesting new category of technology that has a lot of promise for reasons we'll explore a bit later on.
- There are different ways of implementing those shared ledgers, which depend on how you find consensus about a view of the world when the ledgers have discrepancies. One way of doing that is Blockchains, and one way of doing Blockchains is by what they call the 'Proof of Work Blockchain', and that's what's used for Bitcoin.
- Dave: People talk, broadly speaking, about the Blockchain, but that Blockchain is one very specific case of this technology, which is almost certainly unsuited to anything in the world that your members, your readers, are interested in.
- Lynn: **That does clarify it.**
- The second question, then, is why has all of a sudden Blockchain become such a hot topic over the past year? Bitcoin has been quite a hot topic for the last few years, but why the interest now in Blockchain?**
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Dave: I have a business answer, but I have a sort of sociological theory about it as well, which I can't substantiate in any way! I have a feeling that this all traces back to the last financial crisis, because there had been a variety of experiments with different kinds of new forms of money, new forms of electronic cash and virtual currency, for many years, but I somehow think that the crash meant that people were more prepared to look at more radical alternatives which maybe they hadn't been in the past.

And so along comes Bitcoin and of course it has a fabulous creation-myth to go with it, you know, this mysterious guy who was sitting under a tree somewhere and thought it all up. I mean, that's just a great story. And somehow that got some traction and got going. And then when boring people like me had a look at it, they said: The currency thing is kind of stupid because first of all it's not really money. Whatever you want to call Bitcoin, whether you like it or not, it's not money, it's a form of digital commodity of some kind. And I think the regulators are, broadly speaking, agreeing about that. But the way that it maintains consensus between all of these different copies is really pretty interesting, so why don't we take a look at that? I remember going to the first European Bitcoin Conference, which if memory serves was around 2011. I came back and told our clients, "You know I wouldn't really put too much on Bitcoin, but the shared ledger is something that's time has come."

I should say, by the way, on Bitcoin... It's kind of a glib thing to say, but my clients are banks, and Bitcoin doesn't solve any actual problem that any bank actually has, because the crucial design requirement for Bitcoin was to provide for uncensorable value transfer between untrusted actors, and that's not the world banks live in. So, if you have a network of people that are trading derivatives, or stocks, or fish, or something, you have a network of people who are known and trusted. The design goals of Bitcoin have got nothing to do with that environment so that's why it doesn't really fit in.

But this idea of the shared ledger has a crucial driving narrative behind it, which is why I think even if it's not articulated in that way, which is why I think it's gaining traction, and this is all to do with transparency.

So one of the most critical problems, which I think most analyses of the last crisis highlighted, and actually this is particularly true in complex derivatives, is that no-one knew what on earth was going on. There was no transparency, and in particular from a regulatory point of view it was very hard to establish the state of the market.

So the idea of a shared and a replicated ledger, where all the market participants have essentially copies of the same ledger which they're updating, and then you have a clever consensus-forming protocol to work between them to make sure that the ledgers are updated and maintain a view of the real world, where access to that ledger can also be given to regulators, provides a very interesting new degree of transparency that we haven't had before, and I have a feeling that, technological reasons aside and issues of cost reduction and simplification particularly in post-trade taken into account, I have a feeling it's this narrative around transparency which is actually giving the whole thing traction.

Lynn: **What about cost reduction? So, in one way to your point it will help them comply with the regulations, but also reduce the technology. Are there any studies done on how much that can save the bank, and also is there any other regulation... You talked about transparency which is obviously very important; are there any other uses it will have, any other types of regulations?**

Dave: We have done studies for a variety of different clients. I'm slightly suspicious, I see such and such a bank say that this could save ten trillion Dollars a year, or whatever, I honestly don't pay any attention to any of that stuff. That's just management

consultant guff, because if you talk to them about, okay what actually is the blockchain, no one knows. It's still too early.

You have the consortium of some of the biggest banks in the world coming together now to explore shared ledger technology. But it's very, very early days, I'm not traducing them, because they have brilliant people on board that I know personally, but I doubt they could even show you PowerPoint now; it's still in super early days. So when I see a thing which says 'well the Blockchain could save a billion Dollars a week', or whatever, I ignore it. It's too soon to say any of that.

Even if it results in no cost saving whatsoever, I think there are probably three factors which will drive the marketplace in that direction. There are good reasons for thinking that it provides a more robust market infrastructure. So if everybody is working off copies of a shared ledger rather than a single centralised ledger, which could fall over or be cyber attacked or the cleaners could pull out the plug when they want to plug in the vacuum cleaner and the whole thing switches off, everybody having a copy provides for a kind of robustness which I think is interesting and very appropriate in certain markets.

I think there are reasons for thinking that it provides for a more open structure for innovation. We're moving into a world APIs and apps and all this sort of thing anyway, so the idea that you could have a ledger which was audited by app constantly, rather than once a year than some accountants, that's quite interesting, and I suspect that opens up the possibility of some new products and services sitting on top of the ledger there as well.

I shouldn't want your readers to think this means an end to privacy in the marketplaces. We've taken to calling these ledgers translucent because there are a variety of mathematical techniques which mean that you can store things on ledgers that can be shared, but the data can remain private. I can look at your ledger and see that you're solvent, or that you're not breaking laws, or whatever, without being able to read individual records. I don't want people to think there's no privacy in all of this, that's not true.

But I think there's plenty of room for innovation there. The idea that people will build new stuff on top of these ledgers is broadly true. And also, because the ledgers are replicated, different banks, different institutions can interface in different ways to their existing legacy infrastructure, I think that provides us some opportunities as well.

And then the third thing is the issue of transparency that I was talking about before.

If you read some of the stuff that says shared ledgers are going to lead to new kinds of financial services and new kinds of institutions, I think I would probably believe that. If I see something that says the blockchain is going to do that, I'm not entirely sure, in fact I think that's probably not going to happen. And if people say, well Bitcoin is going to cause this, I'm utterly skeptical.

Lynn: For what type of applications will Blockchain be first used? Will it be liquid or illiquid markets, and why?

Dave: The idea that you're going to use it for regulating high frequency trading seems a little unlikely, because the way the technology works at the moment, the way we expect it to work, this isn't something you're going to build to replace Visa or to replace some trading platforms that are doing a million trades a second, I don't think it's that to begin with. I think we need to look in other areas and we need to find areas where the technology can be proven; in an area where one of those factors I talked about is important, and again I'd be hard pressed to prove this to you with bar charts and spreadsheets, but I have a feeling it might be the transparency area.

I'm saying ledger, and you're probably picturing a dusty old book and somebody writing in it with a quill pen, but of course one of the interesting things that's going on at the moment is that people are storing essentially executable code in these things so... and this is where the concept of smart contracts comes from. I can put things on the ledger that are programs that run, as well as just data. And you can imagine an environment where the choices of operations that those programs can perform are defined by markets and regulators so that I actually can't write a bad contract, it just won't work, there isn't the code for it. So the regulators would regulate in a very different way. We've done some work on this in some other areas and I've stolen a term for this from architecture: we call this ambient accountability, the idea that you simply can't run software that executes something improper. This is a really interesting area to explore. So, I have a feeling that we might be looking for markets where we need some transparency, where the rules are simple enough that they can be written into programs without too much trouble, where we can experiment with the robustness and the innovation alongside that transparency. You know, and people have talked about certain kinds of... I'm not expert enough to say whether these are good enough or not, but people have spoken about certain kinds of OTC derivatives in that space, you know, certain corporate bonds and that sort of thing. It's certainly going to be worth the experiment, that's for sure.

Lynn: **Definitely. What, as with all new technology, what are the barriers to adopting it? Are the regulators responding well, are they accepting of this new technology?**

Dave: Well, with the obvious caveat that almost everybody involved doesn't really understand it or know what's going to happen yet, I'm no genius, I don't know what's going to happen either, it's a new area. With that obvious caveat, I have a suspicion that, because of the transparency aspects to it, I would have thought the regulators would be rather in favour of it, because that's the area where small improvements could make quite big changes in overall stability and security. I don't see this as a negative thing; if I was a regulator I would be very interested in exploring this, of course.

Lynn: **Which leads me to my last question: how do you see the solution developing? Will it be industry-led or will the technology be developed by individual banks or vendor providers, or a combination of all three?**

Dave: Speaking from a technological perspective, and I'm not by any means the first person to make this point, I've seen plenty of other people make this same point, that what we're likely to see is a number of shared ledger platforms emerging which are for different industry sectors and then, you know, particular markets or particular products will build shared ledgers on top of those platforms, so I expect to see a number of platforms arise.

If you look at what's actually happened in the market, in particular the bank consortium that's building and using R3 to start to look at what the standards and practices might be, I think if they can put together an initial platform that can be used for two or three different kinds of products, I think that's all we need to do at this stage. So, I do very much see it as a kind of industry sector and platform-oriented thing.

That's not to say that you couldn't see individual kinds of shared ledgers emerge to serve very specific niches, but I couldn't see an industry along the size of the securities industry messing around with those kinds of things, I think they're probably going to want to agree something on a much bigger scale, which of course means it isn't going to happen tomorrow.

So we can carry on experimenting with shared ledgers and learning and trying out some different things, but the market isn't going to change tomorrow.

- Lynn:** Thank you very much for your insight, it's been very helpful, especially the differentiation between the Bitcoin and the Blockchain because that can be very confusing.
- Dave:** Bitcoin has proved to be a very effective marketing campaign than Blockchain, but I think that the message in this sector is I wouldn't spend too much time thinking about Bitcoin.
- Lynn:** Thank you very much Dave, we really appreciate your insights.
- Dave:** You're welcome.
- Julia:** Thank you for listening to this DerivSource podcast. You can find more information on this topic and relevant links on our podcast notes page, available on DerivSource.com. Be sure to also subscribe to our podcast in iTunes so you can listen to it at any time and get automatic updates.
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