Hello and welcome to a DerivSource podcast. I am Emily Fraser Voigt, acting editor of DerivSource.com**. There's a great deal of hype about FinTech and RegTech, but Michael Cooper, CTO of BT Radianz Services looks behind the headlines at the innovations that are making a difference to the post-trade space.**

In this podcast, he not only looks at the potential of blockchain, but also how existing solutions in data management and cloud-based services are evolving.

Here is DerivSource reporter Lynn Strongin Dodds.

Lynn: Hello Michael. Thank you very much for taking part in the podcast today. As you know, we are talking about technology, and my first question is: there is a lot of talk about the RegTech and FinTech. What do you think are the main differences?

Michael: Thanks Lynn, and thanks for having me. Very pleased to be here.

There are a lot of definitions of RegTech and FinTech and even FX tech. I think we think of FinTech as a superset under which there are specific orientations to sub-developments, so RegTech then is an example of FinTech being live in a regulatory context around clients monitoring, reporting, etc. I guess when we think about FinTech, and particularly given that we have got a long history of technology application in financial services and financial markets, we are really thinking about something which is characterized by a technology, potentially innovative in its own right, but a technology being applied in an innovative manner to some use case or business problem in a financial services and financial markets context. RegTech is a specific instance, technology for monitoring markets; in terms of reporting it has been around for some time. So we are really talking here about things that are enabling new ways of working, more accurate working, enabling you to comply with regulatory obligations in a manner of this time. That's probably a very long definition!

Lynn: Well, as you well know, there are so many initiatives being slotted under the FinTech banner. Which are the ones do you think are truly disruptive and innovative?

Michael: You are absolutely right. There is in awful lot under the FinTech banner and I think actually that is interesting in and of itself. There is a lot of interesting reasons why that might be, and why that might be now.

I think that the first obvious point is that FinTech covers a very long, wide landscape and that includes everything from personal finance (b2c, as it were), through to b2b. There are many different aspects of financial services, including retail banking, insurance, reinsurance, and certainly also the ones covering capital markets, so almost by definition you have a very large number of areas in which some form of FinTech can be applied.

I think the other way we would characterize FinTech is think of it as a series: we've seen FinTech 1.0, 2.0, 3.0. These different 'editions' of FinTech also characterize the manner in which people's expectation of FinTech and the way that it's been applied has changed as well.

I think it was Mark Carney in one of his speeches on the subject who classified FinTech as potentially being three things, one of which was effectively your disruption which is the revolution type of state. Another one which was around restoration, which is kind of, where I kind of put a FinTech 2.0 slant on things, where you kind of move away from the idea that there is a revolution and actually you've got current incumbents using FinTech innovation to restore their fortunes, you know, meeting the demands of clients now as an example.

But his third one was a renaissance, which I think is FinTech being a means to augment, extend, make better and improve what we are doing today in financial services and financial markets. And I think ultimately, this is actually the real possibility of FinTech, is that it enables extensions.

So where is it most disruptive and innovative? Very clearly there has been quite a lot of emphasis on the personal retail type services, with payments being another area where there has been some incredible disruption. Certainly what you can do in terms of access and insight into your bank account, the ability to make payments, financial inclusion is definitely a positive output from a FinTech world.

But ultimately I guess probably where partly you're going with this question is that you can also see and conceive of FinTech initiatives or innovations that of themselves offer something new, so a new or more accurate way of doing something. This ultimately can affect market structure or financial services in a more fundamental structural way – I hope this would be disruptive in a positive manner

Lynn: Thank you. In general across technology, the industry is collaborating more than it had in the past on developing solutions. What do you see, again, as the drivers behind this and what would you say are some of the best examples?

Michael: Industry collaboration is something that has been a constant for some time, particularly in the technology space. DTCC, Turquoise, EuroClear, Fixed Protocol, FISD, and other entities were created as a result of this collaboration and are all good examples.

So I don't see that as something that's new, but what I think you can see is perhaps more impetus, more drivers towards collaboration and the generation or creation of utilities. Due to some of those drivers, and once again growing maturity, there is no commercial advantage in each and everyone defining, building and developing a unique solution. So there's a recognition that I am not going to get any commercial advantage from this, therefore why would I not collaborate? And part of that is that whereas you may have built

something, done it yourself, as it were, previously, the kind of development agenda, which certainly most market participants have got, and indeed I think outside of markets and financial services generally, the development agenda is such that you are choosing what you are able to process and do, so you are not looking for more work. In fact you are looking to rationalise, prioritise those activities, so collaboration in a utility context makes a lot of sense there.

And I think that one of the reasons to why cloud entities are successful is because they can expose scale, they can ultimately remove some of the cost elements. So I think organisations in terms of priorities have got budgets that are allocated in a particular way. They don't want to be spending money where it doesn't make sense to do it, so I think there is a number of incentives which drive more collaboration, although as I said, collaboration has always been a strong theme, certainly in financial markets.

What are the best examples? I think there are different examples in different contexts. The obvious one I guess to some degree in terms of new technology, in terms of financial markets is around blockchain, distributive ledger tech, and you have got a number of collaborative solution development capabilities. R3 is probably the most obvious answer and example. But certainly the Hyperledger project under the Linux Foundation is another example enabling people to share in an open source context: code, ideas; it's administered by a board made up of different entities and different participants. That is a good example I think of where the industry has come together to try and explore what is the appropriate, what you can and can't do in that context.

There are other good examples of industry collaboration, such as Plato Project. These projects appear where the financial markets have seen value in collaborating acting as an enabler, where there is no competitive situation, and probably means you can do some things you may not have been able to afford, prioritise, resource otherwise.

Lynn: Keeping with the blockchain theme in general, there has been a lot of hype about blockchain and which areas do you believe the technology can be applied to have the most value?

Michael: Yes, there certainly has been a considerate amount of hype about blockchain and I don't think all of that hype has evaporated as yet. I think it is being rationalised and I think in 2017 people are taking a more sober view of blockchain and it's probably worth characterising that a little bit.

I think certainly there was a lot excitement around the possibilities that blockchain enabled, and I do think it does enable an awful lot of possibilities in a number of areas, in a number of industries, in a number of roles.

But because of the manner in which it was first instantiated was relatedto Bitcoin and bypassed some of the development stages, the rationalisation, the academic scrutiny and it was built in the first instance in a fairly niche environment. Not all of the elements that were developed for that environment

are necessarily applicable in other contexts (and I am thinking financial markets here), so the particular consensus mechanism used in bitcoin might not make sense in a financial markets context.

Similarly some of the elements that a financial markets context requires were not considered in the first instance.

So I think that there has been some rationalisation and thinking around what is really required here, where DLT is meaningful, what do we need to do to develop it further. That's sort of basis for the Hyperledger project, R3 and many other activities as well.

Just in a kind of timeline context, I have a strong sense there is a set of different smaller projects, pilots, more than proof of concepts, that are being developed for the use of blockchain in anger, so in a production context rather than theoretical or proof of concept context, albeit not necessarily at this point seeking to disrupt the technology foundations of markets. And by that I mean, I can see certain entities who are developing a blockchain-based capability that will sit alongside of or will augment or extend their current systems, but in the event that is problematic or even if it fails will not disrupt the core business there. That to me is the maturing of the application of that technology.

So where do I believe the technology can be applied to have the most value? I think there is actually quite a lot. I am still a pretty strong advocate for blockchain, and I think there are a number of areas that it can be used for. I think as a ledger it has got numerous use cases, and that might also include things like identity, which probably pulls you towards something in a sort of KYC type space.

We can see some trade financing examples, where blockchain has managed to enable additional capability; so it's about using that technology and developing a capability for a space where it actually didn't really make much sense, it was too costly, it was too hard, too difficult to do it otherwise, so it's meant that people have been able to expose business in that sort of trade finance space, the low-end STP space they couldn't before.

I do think there is a definite use case around post-trade clearing and settlement for lots of reasons, and don’t mean the T0 type ones either. I just think certainty, clarity, not necessarily transparency, but because I think you need to have to be able to expose records in appropriate fashion, so I do think there is and will be use cases around post-trade.

Interestingly enough, I am also of the belief that while Bitcoin is an example of digital currency, I don't think it will be THE example of a digital currency but potentially in that digital currency, payments and in digitisation space there I think blockchain has got a part to play there as well and that's really just in the financial services, financial markets space. So I think there is lots of use cases, I mean we have looked at it in a security context—how do you secure logs and things of that ilk. There is lots of use cases, not all of them make sense

immediately and I think what's needed perhaps very immediately is demonstrable instances where blockchain is being used in order to develop the technology, to develop the processes and all the other attributes that are needed for it to be meaningful.

Ultimately I think this is an agent for quite a lot of structural change as well but it has got a wee way to go before it gets there.

Lynn: My last question is on data management, which again is always causing a big stir. There are many more established solutions for these challenges. Which ones do you think again have the most value?

Michael: It seems that data has been a constant throughout my IT working life: particularly obtaining good quality data and the whole data standardization piece.

And, in the context of FinTech, data is probably the real basis for much innovation and in data developments and data exploitation are promises for all sorts exciting outcomes.

Data certainly holds the promise of the provision of more intelligence, more insight, and I think it does that in many ways. Even just the ability of technology now to collect, collate, to store data over very long durations is phenomenal and just that capacity alone enables the generation of new insight.

For example: it should enable you to be much more accurate about what you do, enabling personalization and other attributes, so these – data based – solutions are really quite exciting of themselves. But you add augmentation – and this is back to the use of new, probably unstructured data like satellite imagery and things like that … and all of a sudden you know far more, more immediately than you ever could before – so there is that real time dimension also.

And then looking at two other dimensions to this which I think are really interesting - certainly in what we do around financial markets and facilitating capabilities and solutions to market participants, and these are Machine-Learning and Artificial Intelligence (AI).

I think these have got a lot of scope and opportunity, but these will be slow to emerge completely because there is actually quite a lot that has to be done to really enable that across all of the possible jurisdictions, asset classes etc. That's going to be a pretty constant exposure of opportunity I think.

And then there is the application of behavioral algorithms and things to data to anticipate. I think that's a very rich vein to be mindful of as well, whether that be in a trading context, or even in anticipating algorithms, how markets will evolve, forecasting, looking at and improving, and optimising behaviours on a

personal basis.

And then there is the development and application of behavioral algorithms – and the use of data to optimize and anticipate. This is a very rich vein of opportunity to be aware of, whether the application is (i) a trading context, (ii) algorithms that anticipate your behavior, (iii) anticipating the manner markets will evolve – forecasting, (iv) understanding, changing, improving and optimizing behavior at a personal level.

There is an enormous range of opportunity here. If I look around London, there is plenty of companies who are developing data-oriented solutions, which really do move us forward and I think it's really impressive and the other thing about it I think is that: there is almost no end to it!

Lynn: It definitely seems like will be talking about this world of FinTech in general for a very long time. Thank you very much for your time and your insights, it is much appreciated.

Emily: Thanks Lynn, and thank you Michael for your insights.

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