

FUTURE SHOCKS

OUR PANEL OF TECHNOLOGY EXPERTS WERE ASKED TO RANK THE LIKELIHOOD AND IMPACT OF A NUMBER OF POTENTIAL SCENARIOS. CHAIRED BY NICHOLAS PRATT.

PANEL

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Photographs: Paul Cochrane



Funds Europe – When might we see an AI-powered fund selected by an AI-powered fund selector?

Paul Roberts, Milestone Group – My first thought is ‘who’s creating the AI and how is it being evolved?’ Are we going to let the machine learn and focus on just general data, or are we going to give it some form of bias in terms of giving it data based on human historical decisions? If it is driven by real data based on human decisions, you probably won’t get a markedly different outcome from a human because of the bias that is inherited. Where you get a different outcome is if you let the machine learn for itself.

Campbell Brierley, Calastone – Who is the AI-powered fund selector and who

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Paul Roberts, Milestone Group

is providing all the data? If you look at the evolution of Amazon, it took them a long time before they started making recommendations based on customers’ purchasing history. With that use of AI, you need to know who has the data and

the customer connections before you ask about the algorithms.

Roberts – Robo-advice as we know it today is built on historical data from real scenarios where humans are interacting, so we actually have built bias into that process. But who is going to be brave enough to come up with robo-advice where you just give the machine the data and let it go?

Jonathan Hammond, Catalyst – There are two challenges to AI in funds. If you're going to train a neural network to invest in the market, you need years of historical data to cover all bases, which is a huge quantity. If you go down the other route, like a system such as AlphaZero, where you train the system using a win/lose scenario rather than historical data, you need a well-defined problem. In chess or Go, there is an enormous number of permutations but at least it's a well-defined space. In asset management, there are so many market and economic factors involved in defining the problem space.

Janusz Lorenc, Metrosoft – An AI-powered fund means that there is AI that makes investment decisions based on a vast amount of data. I have an AI-powered fund selector who makes decisions which fund to select based on fund data or based on general data? Because the right approach would be to use general data, the same way as the AI-powered fund makes investment decisions.

Trevor Hunt, MUFG – We cannot comprehend what AI is really doing and what it needs to do in the future. There is no need to go too far backwards because most of the data has been generated in the last couple of years. A lot of managers are now looking at those alternative data sources to help inform their decisions and you need AI



“GDPR WAS CREATED BECAUSE OF GOOGLE AND FACEBOOK, NOT THE FUND INDUSTRY, AND WE’RE PAYING THE PRICE. BUT YOU CANNOT DISREGARD REGULATION.”

Janusz Lorenc, Metrosoft

to process the vast amount of data that's there. That's not a manual thing.

Lorenc – For the AI-powered fund selector to make the right decisions, it needs to understand the market conditions anyway, so why would an AI fund selector not make its own investments? You don't select on past performance, you need to understand the market, so why do you need an AI fund? If you power AI fund selector properly then you don't need an AI-powered fund.

Hunt – I disagree. I think hedge funds

are making more use of big data at the moment. Roughly 30% of hedge funds say they're using AI in their investment decisions and they're investing in it as a technology, thus data sources are becoming available that can inform some of the big decisions you're going to make. For example, there are drones above mines providing data on their productivity and output that may affect commodity prices. These are brand new data sources being used to make investment decisions ahead of others. There will always be AI-powered funds because there's always going to be new data available and you need something like AI to process it, and similarly, as we become more and more automated and simplified in our investment decisions, you're going to get an AI-powered fund selector. The two go hand-in-hand.

Richard Clarkson, Oracle – There's a lot of fear with AI that all the machines will learn the same thing and then, inevitably, when something happens, everything will crash at the same time.

Roberts – I agree with Janusz that if you

create an AI fund selector that starts to gather data and does its own transaction costs analysis, it will decide there's no need for an intermediary and it will go direct. It won't buy funds, it will buy the underlying assets.

Funds Europe – What is the biggest implication of this?

Lorenc – In the distant future, it will be investors using AI to make selections directly from some kind of superfunds. Today asset managers are selling their knowledge and their past performance and investment strategies. But with AI, that would most likely disappear and that is not good for the industry.

Hammond – We are at the very early stages in this. We're talking about it as if it's all happened and it's easy to just turn it on, but very few people are doing this at the moment. We're all trying to scabble around to see if there's an easy way into it. Actually, it's a little more difficult than we make out.

Roberts – I think it's about the trust. What generation will be the generation to trust AI decision-making?

Hunt – I completely agree, that's the key point. The latest generation care most about their social networks rather than the historic fund data.

Brierley – If we look at the retail world, who's got the trust? It's Amazon. Who's got the flow and the distribution process and the ability to fulfil those orders? It's Amazon. Those big players don't need a warehouse for a fund. They've solved all these problems, and they've got the infrastructure sitting there ready to roll.

Clarkson – I'd even argue you wouldn't need a fund. The idea of funds was to build an easier and cheaper way to invest



in stocks. But you don't need funds if you have all of this data and this AI capability. Funds may give you the safety of diversification, but your costs will be reduced to the degree where you don't need the wrapper of a fund.

Funds Europe – Will we see a single global utility for a specific market function? If so, what market function would be most suitable?

Richard Clarkson – It's a great idea. You've just got one small problem – regulation.

Brierley – You are not allowed to be both the trustee and the fund accountant, for example, so that does create issues. You would also have to take a very basic function on either the market or distribution side that does not give you any competitive advantage. If I was a custodian on the distribution side, I'd still want to make things easier for myself. I'd still have to provide liquidity, but I would not want the hassle of all the regulations and settlement that do not give me or my distributor any advantage. You have

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Campbell Brierley, Calastone

to find the common thing that everyone is happy to give to utility to share and look after for some small price.

Hunt – Who's going to pay for it? The users, or a not-for-profit organisation? When the sell-side has been involved in utilities, it has paid for it. For example, a lot of the work on central clearing for OTC derivatives was funded by the sell-side because they typically have bigger budgets to fund such activities.

Brierley – The banks did it with Swift in the 60s and 70s when they got together

ROUNDTABLE

and agreed that the process for cross-border payments was painful, expensive and slowing everyone down. But who are you going to trust to do that?

Hunt – Conversely, asset managers don't always like to work with each other, so consensus is the challenge.

Roberts – Creating a utility means people have to cooperate. We're not really an industry that likes cooperating, because everybody thinks their idea is their intellectual property (IP), even if everyone else has had that idea too.

Hammond – The know-your-customer (KYC) and anti-money laundering (AML) process may be an option. Money laundering is still considered to be an issue for our industry, despite the efforts of firms over the past decade or more. I can see the regulator supporting a KYC utility, but I don't know how you would go about making that happen.

Clarkson – That's the blockchain scenario, isn't it.

Brierley – There would be two issues – the KYC and AML work and the distribution of that work. The blockchain could distribute it but somebody still has to do the hard graft and someone will have to pay for it.

Hammond – To the blockchain point, you need the KYC to follow the money and not just track it as point of entry if it is to stay up to date.

Hunt – You will need to have someone responsible for the KYC process because the regulators will want to know someone is accountable. But if everything is on a decentralised ledger, it becomes very difficult to achieve that.

Hunt – I'm worried about the idea of



a global utility. We keep mentioning the word 'global' but in the last five or ten years as a result of MiFID II, Dodd-Frank, General Data Protection Regulation (GDPR) and the gold plating of regulation, the ability to be truly global is disappearing. And the ability to have a global utility that operates across all different jurisdictions is incredibly hard to pull off. Regulation is moving in the opposite direction to the concept of a single, global operating model. You now have to know where your data resides. And a lot of client agreements may stipulate that your data has to reside in one domicile and not another.

Clarkson – The whole point of cloud computing was that you could move your data to be anywhere within this virtual storage world. But now regulators are saying that they need to see a physical data stack so that they know the exact location of the data and can carry out an audit.

Lorenc – GDPR was created because of Google and Facebook, not because of the fund industry, and we're paying the price. But you cannot disregard

“THE BIG CHALLENGE IS LEGACY TECHNOLOGY... BEHIND IT ALL IS A HOUSE OF CARDS THAT COULD FALL OVER AT ANY TIME.”

Richard Clarkson, Oracle

regulation. Regulators want the right to audit cloud systems. A utility may be a good thing, but if a utility is commercial, someone has to make money so it is not only about lowering the cost. And when you look closely at these processes, like KYC, there are many operational issues involved. And that is why utilities have not been successful, despite the fact that the initiatives have been around for so long.

Funds Europe – Will fund managers choose to outsource 100% of their operations?

Hunt – I think it's possible for mid-tier asset managers to do it, and there are plenty of cases where that has happened.

But when you get above a certain scale, such as €200 billion of assets under management and operations in three regions, then it becomes more and more difficult to outsource. It's an issue of customisation. When you get to that scale, you are dealing with clients like sovereign wealth funds that want things done in a certain way on a certain day and you need individuals that know how to do that.

Roberts – It depends where you draw the line. I go and see many firms and talk to them about oversight and outsourcing. A lot of them will say they are fully outsourced but when you start asking questions, you find there are little pockets of in-house activity. The measure should be whether that function supports the IP of the firm. If yes, then you keep it in-house, if no, then it's a commodity and you outsource it.

Clarkson – Would a regulator even allow 100% outsourcing? Under Esma [European Securities and Markets Authority] rules, you need to have a COO however small you are.

Lorenc – I would question what 100%

outsourcing means because a fund manager still needs to have operational oversight – of their distribution or their service providers.

Hunt – Outsourcing is back on the agenda for many mid-tier firms because of their own fee pressures. Ten years ago, the focus was on these big back-office lift-out deals but the market has matured since then and some of the providers have good platforms, so there are good opportunities for the mid-sized firms out there. There is also more scale available, particularly in the hedge fund space where the managers just don't have the ability to invest. There's a technology spend threshold that they can afford and above that, they need an outsourcing

“THERE COULD BE A LOT OF TRACTION FOR BLOCKCHAIN IN THE ALTERNATIVES SPACE SUCH AS PRIVATE EQUITY AND INFRASTRUCTURE.”

Jonathan Hammond, Catalyst



provider to help them.

Brierley – For 30 years we've been watching everybody outsource, and then new technology like the blockchain comes along and everyone says they want to know what they are going to do with it. Will they put it inside their firewall? No, they will outsource it to someone else. It is a market infrastructure and are you really going to get your IP from a market infrastructure? The penny is beginning to drop for a number of firms when it comes to technology. Your payroll and your HR systems are not going to give you an edge over your competitors, so you should think about outsourcing. With the emergence of the blockchain, there are a number of companies wanting to develop the technology in-house but many of them will wake up and decide it would be better to outsource it and let someone else pick up all that development work.

Hammond – I would argue that operations are not as much a commodity service as some people think it is. Data management, client reporting and risk management are all differentiators for a business. Also, the age of digital suggests that clients want full transparency from their providers and outsourcing transfer agency or operations is actually a hindrance to that process. If you have everything in-house, you can join up all those processes on a single, digital platform.

Clarkson – The big challenge is legacy technology. Lots of firms have adopted a best-of-breed approach to technology and are still running systems they bought in 2008. In the last ten years, they have added more and more patches and fixes and then added a digital front end. Yes, it looks fantastic from the front end but behind it all is a house of cards that could fall over at any time.

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When it comes to functions like the TA or fund accounting, asset managers just see them as costly processes that they no longer know how to do because they have outsourced it for the last 10-15 years. Meanwhile the TAs and fund accountants don't want to spend money because they can't afford it. End investors want to look through all of their fund data, but the TA cannot really provide it because they have got systems that are old and clunky and that they do not want anyone to touch because they might fall over.

Funds Europe – Will the post-trade process become standardised on the blockchain?

Brierley – Calastone is migrating its funds transaction network to the blockchain in May 2019. That is symptomatic of a real shift in the post-trade process. For more than 30 years, automation and straight-through-processing has been based around financial messages and transactions based around information. If I make a trade, I send some information to one counterparty and then it comes back with a price on it. The number of times you move a bit of information around in the trade life-cycle is huge before you even get to your reconciliation or settlement.

What the blockchain is doing for post-trade services is moving from a message-based process to a state-of-the-market-based process: if you take the whole market as a series of relationships and if you move from messages to a system that tells you the state of the market at any one time and where any trade will ripple through.

Once you move to a 'state of the market' process where you can see the whole chain of a trade life-cycle, provided you have the necessary permissions, and if you add an application programming interface (API), then there is an amazing



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amount of functionality that is possible. You will no longer need to do endless reconciliations and settlement will do what it is meant to do.

It's a complete mindshift, but for us it's a case of just getting to base camp to make sure we can do what we can now and just jump to the end. For example, the distribution-side custodian model is a process that looks well suited to the blockchain. Their big, daily operational task is to look through the whole chain of sub-custodians to help the fund accountant strike a NAV [net asset value].

Hammond – There could be a lot

of traction for the blockchain in the alternatives space such as private equity and infrastructure. The length of settlement, sophisticated contracts and trade volumes all lend themselves to DLT because none of those issues have been solved yet. Conversely, there is less of a business case for converting the post-trade process for equities. We are already in the high 90% in terms of messaging and matching.

Hunt – I'm with you, Jonathan. I think blockchain is going to appear and you won't necessarily know that it's there. MUFG is participating in a project called KomGo, which is for commodities trade finance on a blockchain platform. Letters of credit and other associated manual processes are perfect for a blockchain implementation. There are 15 banks associated with it and its first transactions are due to be launched in the first quarter of 2019. Then we hear about organisations like Calastone and its work with the blockchain or the Depository Trust and Clearing Corporation (DTCC) that is developing a blockchain platform delivered via AWS and has processed 100 million trades a day on the blockchain

in the last few weeks.

Brierley – Right now, there are two blockchains that run 24/7 every day of the year, do not fall over, have no helpdesk, charge no fee, generate their own money and are open source. Why do we need data centres and IT helpdesks if these guys can move vast sums of money around? Now, the financial services industry is a different animal that needs a central operator. You can outsource that central operation once you build the actual tools, but once you've got that blockchain in place, you can start flowing your applications and distribute it without any server discussion at all. If you have a website, your execution management system (EMS) can run on a few servers and be virtualised, but if you stick the EMS on a blockchain, the chances of that application failing just go to zero. That's the way the world is going, but we have to get to base camp number one and make sure we understand what's going on with that process before we try and race to the end.

Funds Europe – Has everyone's perception of the blockchain changed in the last 12 months?

Roberts – I see it as a great development environment at this stage of its current life-cycle. We see people like Calastone taking it forward and we are preparing ourselves to be connected with it if our clients demand and want it. We do see some limitations in terms of accessibility, governance and regulatory frameworks that mean it's not yet that core infrastructure in the market, but it is an infrastructure for providers in the market. It's out there and people will find a use for it.

Lorenc – We are observing what's going on and we still struggle with a few aspects. Firstly, it's just a technology.

There are other ways to have distributed data and multiple nodes. Secondly, much of the initial benefit of the blockchain was that it could be used for anonymous transactions, which gives great commercial value. We see clients engaging, but if you have someone with proper volume in terms of connections and users, it could be a game-changer. We really don't know where the technology will go. It may really become a technology of the future, it may not. It is not the technology, though, that creates the benefit, it is the cooperation and ability to work together that blockchain facilitates and which will be so important.

Hunt – Blockchain will come in by osmosis. We won't know that we're using it, it will just appear, much like we saw with cloud computing. Firms were making all these preparations in terms of data centres and security. Meanwhile, the sales team was using Salesforce. I think exactly the same is going to happen with blockchain.

Hammond – The key word for me is 'collaboration.' Bitcoin, the poster child for blockchain, has seen fragmentation two or three times over its lifespan because the collaboration between the teams that are running it has broken down and everyone is going in different directions. If that happens with any other DLT that we have in the financial services industry, then we're going to get that fragmentation. It's about making sure we can find a single platform that everybody buys into, and that the technology is forward-thinking enough that it doesn't run out of space or whatever the limiting factor might be, which is what bitcoin fell down on.

Clarkson – My view hasn't changed, I'm still not a fan of blockchain because everyone says it's going to destroy TA and other sectors, but the more I see the

smaller, focused use cases, the more I begin to see the benefits. We originally saw grand statements about blockchain projects that were made in-house without the consideration of external parties. But there are also a number of more focused PoCs [proofs of concept] with clients that address specific business needs. Oracle is involved with one that has a number of market participants interested.

Blockchain will have an impact on the transfer agency function but no one can predict that impact because there are a number of unresolved issues. Firstly, the regulator still wants to know who the investor is. Secondly, there is no consensus in the industry and a blockchain needs consensus. And thirdly, although it hasn't gone wrong yet, I'm sure there are plenty of Chinese and Russians sitting in rooms trying to make it go wrong. If you have a bigger blockchain looking after the whole process, when it goes wrong, the regulators are going to want to point the finger at somebody, and if it's decentralised, it can't do that. However, if you've taken bits of the process and have the likes of Calastone running it, Calastone are going to have that responsibility. Swift could be challenged.

Brierley – Companies like Calastone and Digital Assets and other players will make life a lot easier for all areas of the industry. That's the idea. All we're doing is trying to make it a mutualised system so that we don't keep replicating what we all do in the back office, which is actually just sitting right in the middle. It's as easy as that. The problem with this fashionable blockchain buzzword is that it causes confusion. If I changed my database, I wouldn't be sitting here talking to you about the fact I've changed my database, but the fact I've moved to a distributed model of data and away from my messaging is different. **fe**