Interview with an IT professional

SPEAKER1	00:04	OK, so I've also clicked on the transcription, but I think it will include your name on there, so I'm going to switch that off. OK. Anyway, the recording, so the recording started. So, to start, could you describe your role in your investment firm?
SPEAKER2	00:57	That's never easy, but generally, I look after all the trading access within the firm, so within the internal traders and clients across the boat. Most of our asset classes are looking after everything from equities and futures, options and FX and physical precious metals.
SPEAKER1	01:36	And how would you describe the main sectors or subsectors of the firm that you've worked for?
SPEAKER2	01:46	…the way I see it, we have base metals, precious metals, global currencies, FX PB, grains, softs and now equities and fixed income.
SPEAKER1	02:14	And what's your perception of what the firm's goals are?
SPEAKER2	02:22	My firm's goals are apart from making money for everybody, probably to try and give as wide a scope possible [to] its clients for coverage dates and looking after them in whatever fields they want to come to us with and or we are branching out so we can get new clients and new fields to offer our existing client base, more options and more ways of investing with us.
SPEAKER1	03:04	And how big a role does you think technology provision is in that…?
SPEAKER2	03:13	[It] is very technology driven, even if it's down to archaic customer databases or the new improved....we have to deal with base metals, which is still not very architecturally technology driven, but up to the new FX and all the exchanges generally are now very electronically driven, all the reporting, all the storage of data, so it would be a very highly technological market.
SPEAKER1	03:55	And in those technologies that are provided for on the trading side of things, what if any types of algorithms are deployed?
SPEAKER2	04:11	Well, I'd have to talk mainly on this one from the derivatives market, because that's where I come into contact with most of them. So even now, there's not many of the exchanges, or functions of the exchange take that. Oh, I'm touched or can't be touched with an algorithm, be it from something simple, like an order cancel in order to black box trigger in markets, on events and things like that.
SPEAKER1	04:57	And, I mean, you've got that distinction there between sort of maybe execution algorithms and those look more black boxy type algorithms. What types of strategies does….
SPEAKER2	05:13	Ours mostly is looking at the…I would have said the light touch. Not so much the deep black box guys algos were the ones that where our front end and ISV vendors that we use will support them. They are so that generally the

		light touch client based automated trading rather than like magic coins and things like that.

SPEAKER1   05:50   So, no machine learning or artificial intelligence type…?

SPEAKER2   05:55   Not that I'm not been made aware of.

SPEAKER1   06:02   OK, and for the algorithms that are deployed, how would you describe the sort of design, deployment and calibration processes for those before that sort of set loose….?

SPEAKER2   06:14   And I say that because all ours are client driven, so the client would implement them via either, so it has to be driven via a front-end ISP. So, it has to work within the realms of whatever tools they have or fix integration. And fit within the ICE, LME's architecture. So, I guess that's why they're generally very concerned, so very light touch algorithms.

SPEAKER1   06:59   OK. And what would you, I mean, what would your understanding of conduct risk be?

SPEAKER2   07:15   So generally speaking, conduct risk is in the risk around the actual use of algos. Because the risk is that the risks involved are generally, especially with modern day and age, is that we're going to make or break any messaging scenarios that the exchanges have in place because these guys are going to be talking multiple times a second rather than as traders point and click, hide and know the fluctuation in the market, that will trigger the wrong thing to encode it into the market risk side of limits, losses . And on that side to the company.

SPEAKER1   08:16   OK, great. And is your perception that the firm has a sort of risk management framework to sort of try and mitigate any of those types of risks?

SPEAKER2   08:28   To some extent, we have quite robust risk controls in place for clients with their accounts. Their risk breaches to markets... our risk department are monitoring everybody's P&Ls and that quite rigorously, the one that probably is not so much is the messaging side, where that's probably more down to the ISP to control that. Most clients have quite a strong risk... in place before they even learn how to go onto the market, with lot limits, volume, money and that is monitored quite rigorously.

SPEAKER1   09:33   And just in terms of your perception of where we are now to where we could be in the future, I mean, at the moment there's quite a well-known discussion paper out about the future of trading on the LME and how that might support that further electronification of markets and all that kind of stuff. What do you perceive as being the main conduct risks that could be posed by potential changes in, say, the base metals markets in the future from where we are today? I mean, could it be that electronification will help to reduce some of those risks? Or do you think it could increase some of them with the base metals?

SPEAKER2	10:19	I would have to start with…I think any change along those lines is going to cause a bigger risk…. The systems would need to be more robust to deal with everything they've got on day one. In theory, the volume could fluctuate quite a lot on the first few days that they are fully electric. So, they're monitoring, and their compliance and risk would have to be as cutting edge as whatever the exchange or whatever, the client or members are going to be thrown at it…
SPEAKER1	11:16	Do you think that those sort of members…are they are they ready for that?
SPEAKER2	11:23	I would have thought somehow, because some of the other CAT1 members of the LME are going to be quite large. I think they're already doing fast electronic trading with other venues and other exchanges that I would just want to start on day one onto the LME.
SPEAKER1	11:51	And in terms of likely levels of self-calibration, so you have an instance where it may well be that a designer creates an algorithm with a specific goal to start with, but then maybe it's a sort of reinforcement learning algorithm that could maybe develop and pursue a different goal on data that it receives. What's your perception of how far that this sector could progress in terms of using that type of functionality?
SPEAKER2	12:28	Well, I was going to say hopefully it's come a long life, because that's already been sort of used in place and gone wrong on other markets and exchanges, so buy one yourself, learn in the market, picks up on the market moves then that could generate a lot of messaging and a lot of movement on an exchange that may not be ready for it.
SPEAKER1	13:11	Do you think there's a big read across from, say, what's happening in the equities markets where maybe this is a little bit further forward than into, say, fixed income, currency and commodities markets, where maybe it's a more recent development?
SPEAKER2	13:27	Yeah, it's also going to be how the exchange or how the markets are geared up to deal with the messaging and the like sell at the moment out of most of the exchanges. The base metals have…they've tried to put the most controls on messaging, but he's quite low compared to the number of trades or other things that go through other markets. So that has to be robust and in place on day one to cope with this whole thing, otherwise members are going to be either disconnected or create bottlenecks in the market while messages are getting bounced or rejected.
SPEAKER1	14:17	And how would you rate the understanding of, say, senior management, front office and support staff in terms of their understanding of how algorithms work, maybe in general, so that they can maybe get to grips with what's happening and their understanding of conduct risk to be able to identify possible issues that may come from their use.

SPEAKER2	14:42	On the operations side…but believe we've got enough of an understanding across the firm. I think some of our front office might not be as prepared because a lot of them have come from yeah, they've been in their market and their world and dealing for a long time. So, the changes have happened quite slowly and a lot of them still use…Have what they've been doing since day one from electronic markets…And not even using some of the controls or the benefits that the systems have out there at the moment. So, whereas some other new ones come in, they are going to want to start implementing this broader range of trading facilities, which then the company might not be as prepared or as ready is because it hasn't come up before.
SPEAKER1	16:04	How do you think there could be changes in staffing levels as algorithms perhaps become more sophisticated?
SPEAKER2	16:16	Yeah, I was going to say yes in some departments. I think the training would need to be in place or people would need to be in place with an idea of how the actual algorithm is working our reach level. So, either they're not necessarily against these people…will not necessarily have to be traders or understand, but they would have to understand the code. Yeah, and all the technology system that is being implemented rather than the trading side and the knowledge of markets. OK, but I think algos the easiest way probably looking at them is the monitoring is purely for another box or another form of ... but some firms and people are implementing, you know, that will monitor the flow. And so, you've actually called bac, you've got black boxes watching black boxes, right?
SPEAKER1	17:31	Right. And do you think that I mean, in 10 years' time, how could a firm in our sector, how could it look like compared to this day? I mean today, a lot of firms in the sector…they've got a lot of human traders and all this kind of stuff. Do you think that that's likely to continue or…?
SPEAKER2	17:54	I would have thought so because the market still needs the people. That's a lot. That I don't know if it's going to take quite a while, I think, to change with removing the fleshy bit in the middle, because they're the ones that talk to each other. They're the ones that actually build the market and know what's going on, whereas so those will still be needed and functional, but the trading side, I think, will be more server driven. It will be less people clicking buttons and you'll have more developers, tech people and boxes more than likely running the actual depth of the market.
SPEAKER1	18:42	And with that in mind, how do the humans, how are they staying on top of developments in relation to sort of algorithms that might be coming online and how they operate at the moment?
SPEAKER2	18:59	They would change and they would have to move like everybody with some form of the times, because they still need to know their markets and be able to liaise that with the development team on what the black box should or shouldn't be doing. And again, along the lines with the people in risk and

compliance would need to also be on the ground, people again to be able to discuss with the development team and the traders on what's happening, where and how to be able to deal with the monitoring and the declaration and the reporting of everything that is going on, on their site .

SPEAKER1   19:48   OK, and are you aware of any conduct risk incidents involving algorithms that have occurred either in the works or at subsector in the last few years?

SPEAKER2   20:00   Well, not in the firm. I would like to underline that. But yeah, I mean, globally on the markets. Yes, because the whole MiFID things… came about because of the young lad in London that managed to crush the US stock market making a shedload of money on the back of it by instigating a rogue algorithm.

SPEAKER1   20:37   And that was in the equity markets, I mean, has there been anything in the commodities markets as an example you can think of?

SPEAKER2   20:47   No, not to that level or extent I can think of yet.

SPEAKER1   20:54   And I mean, you mentioned earlier about black box, the black box type activity. Do you think it's possible that you might see a similar thing with regulation, with machines regulating machines? Do you think that it is that too far off?

SPEAKER2   21:15   Well, I still think that's a little way off. You would still need, say the way I look at it, because you've got these black boxes that are going to be trading to some extent automatically and quickly, you're going to need some form of black magic eye watching, then that can react as quickly as light. But at the end of the day, you still need the people to be able to decipher that information and, you know, work out what the client's doing, what they need to be doing and all they do. That still needs some knowledge of your client base, rather than just knowledge of numbers, the people who still come in.

SPEAKER1   22:08   OK, and SMCR has been coming into a lot of firms in London recently, and there's been this focus on certifying certain members of staff that been involved in the algorithmic process. Is there any sort of move by designers of algorithms that you're aware of to try and embed ethical standards into the way the algorithms conduct themselves? So, if I give you an example, I think there was something that happened in the states involving a different sector. I think it was to do with the legal sector. And what they what they tried to do was they tried to get certain robots to hand out court judgments. And there was an argument that those court judgments may not be completely ethical because the robot was looking at zip codes and stuff and work out where they lived and was making a judgment about those people on some of that data. And so, they had to talk about maybe having to actually embed in those algorithms that made those programs themselves some sort of concept of ethical behaviour. Are you seeing anything like that in in the sort of stuff that you're looking at or not really on?

SPEAKER2	23:39	I am not. But it goes along the lines of everything now that is becoming automated, whereas, you know, I only see a very small world of algorithmic trading. Whereas it's moving along the lines with all that technology driven automated process is the ultimate automatic cars and cars being able to drive themselves, you still need to flesh a bit in the middle to make decisions and the overlay or the end of the day, the decision maker or somebody to hold accountable for what the what the automation is doing.
SPEAKER1	24:38	OK, and is it fair to say I mean, that our controls at the moment are very much detective so after the event, or would you say that preventative as well?
SPEAKER2	24:58	That's at the moment, I would say it's probably more know, detective, rather than preventative at the moment in our sector.
SPEAKER1	25:13	And what sort of surveillance tools are used by firms in the sector, you're aware of what they might use to identify those issues?
SPEAKER2	25:26	I know there are tools out there, they have surveillance tools that have been beefed up and the approach of algorithms so I can detect the number of messaging. And then again, you can build whatever monitoring you want around that is the number of messages or the number of how many ticks each side of the market and what they are looking to try and do.
SPEAKER1	26:06	And given that is a sort of phenomenal amount of data associated with all of these things, how would you rate the ability of humans to be able to identify using maybe this kind of system, improper sort of behaviour?
SPEAKER2	26:25	With the right one, the right people, then it should be doable because the monitoring system should be good enough that it will allow the white noise…. And so, you're actually just dealing with the main incidents and the reactive on the point you need to.
SPEAKER1	26:58	OK, and how about markets and regulators? Where do you think they sit; do you think? What's your position? Do you think they would be able to maybe further up the chain, identify issues themselves?
SPEAKER2	27:13	Further up the chain, the exchanges would need their own serious amount of monitoring and data collection. It's come a long way already from people shouting at each other on the floors to being able to pick and locate an individual or an individual trait that is doing something wrong, which they can or likely already do, still in a reactive manner. Most audits work in that sort of framework, the monitoring is I think a lot of the institutions will probably leave that again to the firms to try and deal with rather than sit in the middle. They will monitor the firms rather than the markets.
SPEAKER1	28:16	And those firms, when they're sort of looking to maybe implement a technological solution, do you think that they favour a build, partner or buy type approach? And what do you think about that in this kind of sector?

SPEAKER2	28:34	Most of it is going to be money driven…. Obviously, a personal viewpoint from what I've seen from many firms that it boils down to how much do people want to spend of their capital on the systems they want to put in place? So, if it's more reasonable and favourable, if they've got the internal staff levels and the technical, technological know-how, then they will build something in firm or with a business partner of their own or anywhere else would have to buy something in and use third party and as the best-case scenario.
SPEAKER1	29:30	Do you think there's any merit in this sort of thing in trying to incentivize machines to behave properly, so by way of example, in the analysis of human conduct risk involved with things like the senior managers and certification regime, there's quite a big focus on remuneration and using remuneration as a tool to try and encourage good behaviour with people that are involved in trading and other activities. Do you think there's any way that machines could be incentivized…?
SPEAKER2	30:13	…. I've been around technology for quite a while. I'm not quite sure. Yes, most computers don't even like working on a sticker chart. So, I wouldn't know how you could incentivise if you do a really good job. You came over at the end of the month. I don't know if that's, you know, how you can incentivise or develop good behaviour. I think a technological code, even if it's with an eye, built in to monitor what it does, how it does it, when it was still just try and work through the information it's been given and how it was the best way to deal with it. I can't see how that would be incentivised to machine…
SPEAKER1	31:10	What about deterring them, deterring maybe a machine learning type algorithm for maybe making a choice, if it's got a number, if it's identified a number of choices? …Is there any way to perhaps deter them from making the bad choice if they see potentially a shortcut from the data that they perceive to making more money, which is the goal that's been set? But that shortcut involves committing market abuse, something…
SPEAKER2	31:48	Well, that could or should be built in to be able to prevent, you know, they should be trained or programmed with any market abuse or any market regulations, which would then cut off anything they do. Even in principle, anything they can to do incorrectly would be cut off a source.
SPEAKER1	32:21	How about punishing machine? So again, that as humans we see our world, it's possible that, you know, we're subject to discipline and all the rest of it. What about the idea of if a machine has misbehaved and maybe it's the way it's behaved is not how it's designed, originally intended, because it's consumed data, it's decided to recalibrate itself and it's engaged in some behaviour which is perhaps not in line in keeping with what the regulations would expect. Do you see any merit in, say, a regulator coming in and ever in real time saying, OK, we're going to do that algorithm trading or potentially

even from sort of ordering that algorithm or that system be dismantled or even destroyed. What do you think of that?

SPEAKER2	33:22	Well, probably can be dealt with that way, yes but… there isn't anything that's really going to stop them from…redeveloping and maybe in a slightly different form but doing the same again. Just like with the modern-day world, you've got computers designing stuff. At the end of the day, they all try to design things to their best ability, which means every single cycle, or something is going to look the same because… if you leave computers to do everything, then they're going to end up with the same results at the end of the day. So, it's probably best that things are stopped and monitored and that's why you still need the fleshy person in between.
SPEAKER1	34:31	Are you aware of any sort of industrial sector wide initiatives to sort of look at this, these sort of types of potential challenges?
SPEAKER2	34:43	Not in my field at the moment.
SPEAKER1	34:50	Do you think firms in the sector would be willing to collaborate with each other on this particular thing, or do you think they would see it as an area of sort of potential competition and therefore something that they would want to sort of keep private to themselves?
SPEAKER2	35:04	More than likely, yeah and until you get a third-party firm or something that wants to go and sell it to the market.
SPEAKER1	35:26	Do you think that is quite heavily reliant on vendors and that could cause complications? Do you think firms do have that kind of expertise in-house where they could sort of try and find solutions to some of these types of issues?
SPEAKER2	35:55	It's going to be vendor driven, I would have thought, because they're going to have the foresight to be able to look at hopefully a wider picture than just any internal system. The company-built system is going to do what that company would want and would like it to do. The third party or the people that helped develop and talk to a lot of these things [would] be more focused on a wider picture.
SPEAKER1	36:44	What do you think of the sort of merits of industry led solutions versus legislative or regulatory legislation? I mean, do you think it's something that should be looked at from the top down? I mean…do you think that the firms themselves should lead that type of charge?
SPEAKER2	37:13	Well, you know, with the MIFID II, has been firmly placed, as far as I see, within the firms and the industry said, "you need to be doing this", "You need to go to monitor this". But any conversation back with, well, "how do you think we should do that" is kind of well, that's "we're just happy you should be doing it". How you do it and how you go about it is your own thing. So is going to be industry…. Preferably, we have vendors that deal with the same

industries and the same people, so you come from, you know, internally and probably until it's done wrong…

SPEAKER1 38:07 How would you view the UK's approach to maybe examining some of these issues versus maybe what happens in, say, the States or other third countries?

SPEAKER2 38:26 Well, I would have thought the UK is fairly buoyant and not too bad…but from what I see, I think Europe will probably do quite well within this sector. The US might be a little bit behind…Only because they're a been more technically driven all the way through since the 50s then, and that's where their skill set lies. Over and above Europe and the West, leave third world countries that far behind, I think.

SPEAKER1 39:29 And in terms of the sort of lessons that can be learned from instance that you such as the one that you mentioned earlier, they think it was the so-called "round of Hounslow", which you were referring to him sitting in his bedroom. What do you think? Do you think the industry's sort to learn from that type of incident, what the lessons learned from that or will be a case of business as usual?

SPEAKER2 39:57 Well, I think it's good. I think that one that scared a lot of the market and regulators, but even with the technology at that point and the not so in-depth monitoring, they were still able to find and pinpoint exactly where the trade was done, where, how within a relatively good timescale. Whereas now that's what sort of I think prompted more of the debate. Now, where is a transparent market as it's meant to be? At the end of the day, you need to know and point out exactly who's behind every click push button. That happens across many of the venues. And I think that's where it's more gone. That is the more knee jerk reaction is that we now need to go to prove and push that exactly who, how, where when and why.

SPEAKER1 41:07 And do you think there's anything that this sector could learn from? Other industries, so you have a really highly regulated industry, as you know, aviation, nuclear industry.

SPEAKER2 41:22 Yeah, I was going to say and again, below the ones I know out of that, especially the aviation. Is this down to the military and it is down to the…? What's in place to…? Gathering data and monitoring to make sure accidents and things don't happen more than once. And the root cause of anything that does happen…

SPEAKER1 41:57 Is sort of like an almost black box flight recorder type thing?

SPEAKER2 42:02 Yeah. Yes there is the black box flight recorder that records everything that happens. But more of a family member developed software on the back of that. That actually monitors absolutely everything that happens on an aircraft while it's in flight, right? So, they can actually, and they gather that data on every flight-by-flight basis. Take it away and generally so they can go back to

airlines and say, you know, every time this pilot comes into this airport, he does this, and that's actually a lot safer and you're actually saving a lot more fuel than this pilot. This pilots who do it this way so that they turn around and say… now have to do it the same way as him because he's found a better way of flying the aircraft into this place.

SPEAKER1   43:02   Interesting, interesting, that could be…

SPEAKER2   43:05   …and that would be very much know I would have thought I'm driven, and it would be done rather than to say you don't necessarily need to have an exit point or a mistake. But you can see where they're going to be coming from.

SPEAKER1   43:25   What would be your principal concerns for the future?

SPEAKER2   43:36   Some of it would probably the amount of hours or people that are needed to implement it to start with and make sure it's all monitoring and running. Start with in the smaller firms. And say the likes of some firms where if it's monetary to monetary driven, then it will be brushed aside, and, you know, get lost.

SPEAKER1   44:15   OK, well, that was the final question. So, thank you for your time and I will end the recording there.