SPEAKER1	00:03	OK, so first off, what is your role?
SPEAKER2	00:16	I'm the CEO, I see.
SPEAKER1	00:19	And what's the sector subsector of that your firm is involved in?
SPEAKER2	00:25	Financial services.
SPEAKER1	00:28	And particular asset classes?
SPEAKER2	00:32	Multi-Asset class foreign exchange, commodities, securities, FX, payments. Within that, you've got futures, OTC, physical metals, you name it. That's quite a wide range of asset classes…
SPEAKER1	00:58	And how would you describe the firm's goals?
SPEAKER2	01:03	Firm's goals to continue to provide access to as many markets as we as feasible and make commercial sense to as broad a range of clients that we can on board. So, we want to be a one stop shop across multi assets where it's possible and where it makes sense.
SPEAKER1	01:27	At present, how much is the firm involved in sort of deploying algorithms in its business? So, it could be sort of proprietary trading algorithms and a sort of black box model sense where that algorithm makes investment decisions itself. Or it could be sort of execution algorithms where a client has a platform. And on that platform, there's a lot of functionality like stop loss orders and, you know, maybe auto spreader or something like this. What what's the firm's sort of involvement in that type of activity?
SPEAKER2	02:08	I'd say at this point, it's not really there. It's where we would clearly want to go down more of a technological and automated process. But we haven't quite got to the point where, you know, customers' orders and transactions are feeding into a black box where it's maybe like a dark pool of an algorithmic way, where it's trying to you replace either an exchange venue or market. But I would say that's you know, but in terms of, you know, automation, stop losses, I mean, those are clearly built into the existing systems. But we're not there in terms of customers facing us. And we are just an algo, OK…
SPEAKER1	03:00	And what about the firm's peers sort of in the market? What's your impression of how prepared they might be for that type of evolution?
SPEAKER2	03:19	I would say it's mixed. I mean, depending on the product, it's you know, there's different levels of sophistication and technological advances, basically. So, on the one hand, you probably have FX, which is probably the deepest, most liquid markets in the world. And, you know, very little is done that isn't automatically off a screen straight through to liquidity provider. And I'd say probably, you know, maybe three or four of the top liquidity providers are all probably just algo trading and, you know, whereby we will facilitate access

through to them, but we will not be doing that. So, I think in terms of some markets, it's already happening. It's normal. I think other markets, you know, you could point to the LME where you might be very surprised if there's any algorithmic trading going on the LME.

SPEAKER1   04:24   And to the extent that the firm uses any sort of vendor platforms, you know, things like CQG, PATS those types of things. Does the firm have a sort of dedicated design and deployment process for those types of platforms? Or is it sort of take it out of the box and then implement it?

SPEAKER2   04:48   Obviously, to be honest, it's irritatingly it's driven by the customer. OK, so we all we are somewhat agnostic to the platform and CQG versus PATS. We don't really have a preference. Personally, I would like to see us rolling out a proprietary system, but I think I'm not sure we're ready to do that yet. But that would be an ideal situation because these aren't these are expensive platforms and we have little or no control over the rollouts is use its practicality, its functionality and such and something where we're beholden to but not really wanting to.

SPEAKER1   05:34   OK, and what is your understanding of conduct risk and what does the firm sort of internal framework look like to sort of mitigate that?

SPEAKER2   05:46   With regards to what?

SPEAKER1   05:48   With regards to, principally, one looks at conduct risk. I think one is looked at traditionally in the context of human behaviour.

SPEAKER2   06:00   You ask that question immediately after talking about the platforms.

SPEAKER1   06:03   Yes, yes, exactly. Well, first off, the perception of conduct risk. I mean, what does it mean? And to the extent that the firm is deploying algorithms is that definition of conduct risk does not account for functionality which has been automated or is it?

SPEAKER2   06:27   Well, what it does do, it's as opposed to a company like us where, you know, we have individual desks, individual teams, individual people all transacting, dealing, talking with customers. If you had platforms rolled out that feed straight through into an algorithmic platform that which is proprietary to the firm, the firm is well and truly on the hook for its conduct because it is the company that's rolling out this platform. Not and therefore, in terms of how it's implemented, how it's priced, how it operates, how it behaves, you know, this is not this is not a specific department. This is not a specific product. This is the company and therefore I guess it just makes it more of a systemic issue rather than a potential rogue issue.

SPEAKER1   07:34   And if you I mean, if you look at SMCR, this new function, the algorithmic function where somebody, a human being has to be certified, if they oversee the sort of design and development of algorithms and investment firms. And there's been in some other sectors, some incidents involving algorithms

which have become more sophisticated, and the designer creates the algorithm and because the algorithms' learning, maybe using taking reinforcement learning techniques. So, it's taking in all the data and it's then gradually evolving itself. It's recalibrating itself to sort of adjust to how the market has changed even over the course of maybe half an hour or something. There might be an argument that be the designer then may not have envisaged the weight of that algorithm, may develop and then also behave. Do you think that something like SMCR has really accounted for that? Do you think it's still fair that in that circumstance that individual or the firm is responsible for what that algorithm does?

SPEAKER2	08:48	That is interesting, isn't it? So, the algorithm evolves and outgrows its master, its creator. Yeah. Now that is that is what it's intended to do. So, it's not like that's a surprise. And where we've seen, you know, bizarre flash crashes over the last few years, most have been pointed to an algo that's evolved and they've got things very wrong or just went in a different direction. And, you know, a company, the company has to sort of go into this with his eyes open and recognize that this is what an algo is intended to do. It will become more efficient. It will use AI to evolve, and therefore there's an expectation that it will outgrow its creator. And therefore, is that is that person the essential? Really the right role and does it go back to what I was saying before, but the entity then becomes responsible?
SPEAKER1	10:00	But even in that sense Is it if the entity has taken all reasonable steps and the answer to this algorithm has evolved in such a way in which it's been set a goal, but then it might recalibrate and choose a new goal because it thinks it's going to make the firm. You know, every turn or whatever, and it may well be that the market changes so fundamentally, the data is completely new to what the algorithms previously seen and what the design is previously saying, that it wasn't reasonably foreseeable, that there was going to be a particular problem, even though they've taken reasonable steps and the individual taking reasonable steps to try and stop any problems. Is it still equitable? Is it more of a case of actually trading algorithm has almost become an agent in itself and should be subject to discipline itself?
SPEAKER2	11:09	That's the point of how inanimate objects, how can it how can it be disciplined? It has to be it has to be the person who created it, who manages it, runs it. But if that if the algos outgrown them, then it just goes further up the food chain. And anyone who in my position who's aware of this should expect this level of evolution.
SPEAKER1	11:38	I'll give you a good example. I don't know if you remember in the early 90s, there was a case involving something called the Dangerous Dogs Act. And the result was a big sort of moral panic in the early 90s about dangerous dogs and the government. The government brought in an act of parliament which brought in certain punishments for the owners of those dangerous dogs. But at the same time, the act of parliament also gave the authorities the rights to

do things like put the dangerous dog down itself because it was seen as a sort of autonomous agent. So, do you see anything coming in the future where maybe the regulator could look at not just the individuals in the firm, but also the actual algorithm itself and say, well, actually, we are going to put you down, we're going to order that this algorithm is taken out of service and we're going to destroy it. Because it's behaving in ways which the creators did not intend, and it's almost taking on agency of its own.

SPEAKER2   12:45   OK, so in order to do that, because I think you're right, I think that should be the case. Whether it can be the case, I don't know, because it's easier if the regulator had a series of events that were market affecting events, which could be the sudden flash crash in any index or something that's there's some violent movies is triggered by an algo that is misinterpreting or doing something which then just keeps selling, keep selling, keep selling and keep buying whatever it might be, but that it'd be easier for a regulator to go in and say, OK, this is the second time you've done this. Well, the third time this has happened. What the fuck? You know, what are you doing as opposed to proactively monitoring these, I think will be difficult. And I think they should I just don't know whether they would have the wherewithal to do it.

SPEAKER1   13:42   Could you see a scenario where the regulator actually moves to sort of, we have machine to machine regulation? Because could it be the case that a human being just cannot analyse or understand what the algorithm is actually trying to do, and the only thing that could possibly have a reasonable chance of doing that is another algorithm. It's almost like a sort of Star Wars type thing where, you know, if you allow, I mean, at the moment, most monitoring is premised on a T plus one concept. So, it's all after the event. So, if this market abuse has happened, it's happened, and you then have to sort of try and find out who was responsible and what happened and try to piece it all together. But given how systemically linked everything is, could you see a scenario where it may well be that it becomes more real time and actually the human element is completely removed?

SPEAKER2   14:46   Most of those, I assume, are set off to do in a very quick way, identify a gap, identify liquidity. And but you're never going to get an algo that is out to manipulate. And that's, I guess, is what regulators should be concerned about, is anyone who's out to manipulate using an algo and it goes back to the you know, like you said, you need a unit, an algo to sort of identify a corrupt algo.

SPEAKER1   15:29   And I mean, what would you say from basis, what you may have seen? What do you think of the main sort of conduct, risks that are actually associated with algorithmic trading and in the sectors in which your firm operates?

SPEAKER2   15:45   Well, I think the obvious one is usually where they're trying to identify the states. So, most algorithms match the easy, the easy, easy ways for them to identify anyone who's putting a price out there that is not to date and therefore able to pick them off. I mean, that's so if you're sole intent is to

identify. The I guess the misfortune of others, if they just haven't refreshed their pricing and they get picked off, that's an easy one for algos to take full advantage of. And whether that's the right thing to do, it is up to the designer. But where did you stray from taking advantage of market prices that are perhaps not up to date versus straying into the realm of manipulation of market? And I think that's got to be a big concern for any regulator is that, you know, as they evolve and they evolve and they evolve, that they evolve badly.

SPEAKER1	17:02	And have you seen any sort of incidents in the last few years involving your own firm or maybe in the same firms that are active in the same sector? Where an algorithm has been at fault, always being at the root of the cause of an issue?
SPEAKER2	17:19	Well, I think there's been a few that have been in the public domain in terms of what triggered a big move in a market. You know, after the analysis it triggered goes back to the fact that some fund or some institutions algo just got it completely wrong.
SPEAKER1	17:39	Do your human brokers sometimes come to you and complain about the activities of algorithms in the market or they sort of accepted their presence where they do exist.
SPEAKER2	17:54	Um, I'm not aware of any complaints. I guess they are not I'd say, if anything, we are a taker of liquidity from them rather than the other way around. So, we would view in some markets as us that they're providing greater liquidity and we as a taker of liquidity want to access them. If we were a significant market maker in a lot of these activities.
SPEAKER1	18:32	If you look at what's happened recently, where they say the discussion paper and the way that that's trying to sort of potentially shape the future of that market, which may or may not induce more of these more sort of participants that are very heavy to come into the market. Given where the market, you know, that kind of market could go, how do you rate the sort of knowledge and understanding of your staff in terms of algorithms and the types of sorts of conduct risks they might pose?
SPEAKER2	19:11	If we were doing it?
SPEAKER1	19:15	Well, just sort of generally, because it's something which, you know, it could be the future. This is what's happening and I mean, all firms in your subsector, do you feel that they are responding to what the future can be in terms of building up their knowledge base, increasing their understanding of maybe and learning from events that have happened in the market, maybe that the software market, all this type of stuff? I mean, we do. I mean, how would you say your firm is in terms of tooling up for that or adjusting to that sort of change knowledge wise?

SPEAKER2	19:59	Well, as I said, I think as a group, as a broader group, we are sort of dabbling in in this area. But we would clearly see that market as external to us, but it could become increasingly part of what we offer our clients. And we've got to be incredibly cognizant to ensure that we're not exposing ourselves to something that we've read about in the paper or we're aware of has happened elsewhere in other markets with other firms who are purely feeding everything into an algo.
SPEAKER1	20:42	Could you see a situation where maybe firms in your sector that they might look to reduce overhead in the business as a result of maybe increasing their footprint in this area? And if so, what types of areas which someone in your position or would they look to reduce?
SPEAKER2	21:08	I don't think that applies to us, because if we were a fund or we were a prop shop taking proprietary positions in various markets, you can see the logic for replacing the head count with an algo who can do it all easily or easily and quickly. That doesn't apply to us now. We are market makers in a couple of areas, but we are not proprietary trading that we consider ourselves to be a prop trader. We take positions to provide that market making that minimal and certainly don't take any directional views. So, I don't see that as being a subject that we would or that being a benefit, headcount reduction, being a benefit of a rollout of such a platform would apply to us.
SPEAKER1	22:09	Do you think the presence of algorithms could actually improve and actually reduce risk, because human beings, obviously act on emotion, machines act on data, could you see an improvement potentially if they were more prevalent?
SPEAKER2	22:29	Hum. My gut feel is it probably would, but I just don't feel I have enough experience and knowledge to truly answer that one.
SPEAKER1	22:40	OK, and in terms of what about an idea, if there are algorithms obviously designed with code, things like Python are very popular and they're designed with specific goals in mind from the simplest, most complicated. What do you think about an idea where actually you say. To the algorithm, you actually programming and designing standards of good ethical conduct. Before, you know, actually with the actual trading code, so rather than sort of waiting for the trading code to so maybe engage in some, you know, do something which would actually contravene a requirement or cause problems in the market, that it's something which you code in, something which allows the algorithm to think, actually, before I do this, what could the implication be? So, there's been examples in again, in other technologies. If you take like self-driving cars, they are actually there's quite a few debates about the self-driving car. That might be a situation where its spots are moving objects in front of it, and it has to make a decision before it carries on proceeding to do what it's going to do next. It says, OK, do I swerved to avoid that moving object. And if I do swerve or hit somebody, I hit somebody else, potentially kill the other person. But the object I would otherwise have hit could be like a mother with a kid or

something. So, you have to make this sort of ethical choice and that's being programmed into those types of systems. If you could you see any merit in doing that, or do you think that's something which firms would be not inclined to do because it might slow the algo down and all this kind of stuff? And it's all about speed and things like this.

SPEAKER2   24:38   OK, I'm, I had a thought I mean, ethical behaviour is subjective, following the rules and regulations is subjective. So, I would imagine any algo is going to start by saying, OK, these are the rules. This is what you have. This is how you follow it. And this makes this is clearly following the letter of the law. Do not front run. Do not see a chance to do this, to make it make money, if it is outside of the rules, putting in an ethical aspect to saying, well, it's not just following the rules, it's looking beyond the rules. And that's difficult. I mean, I hope it's possible because you like that, but I don't know if it is possible.

SPEAKER1   25:27   And I at the moment, that would be something that would be quite preventative. In terms of detective controls at the moment, what type of detective controls does a firm like yours actually have to detect whether there have been any problems?

SPEAKER2   25:46   Well, most of it is straight, and I think that's probably the weakest part of the overall business. And that's just the sector and the way we are in that we're reviewing traits of the event. You'd like to think an outcome would have the ability to. Do everything quick to do everything instantaneously and be able to sort of self-evident that you that it has not abused. Systems has behaved properly and followed the rules. You'd like to think...

SPEAKER1   26:33   And what would you say in terms of the ability of regulators and markets, how do you feel that knowledge of this type of thing?

SPEAKER2   26:47   I think the regulators are always playing catch up. The problem is you've got, um, technology is moving so quickly that I don't think the regulators catch on quick enough. And therefore, a lot of institutions will see that any evolution of technology probably gives a window, a limited window of opportunity to take advantage of something perhaps people are unaware of or the regulators have the thought of, the example I would think would be the sort of flash boys equivalent where suddenly everyone was, you know, those that were able to get a faster connection to the exchange through mountains or putting their data centre literally 100 yards from the exchange. Would they immediately be given a commercial advantage, but doing it in a way that no one thought about? When they did think about it, those much hay was made during that sunshine period because there was a lot of money that was gained from those companies that did it. Eventually, the regulators caught up. Eventually, they put in place measures to level the playing field. But this is this is exactly what will continue to be the case. There'll be a there'll be a new opportunity, a new advantage. A new way of, well, they are not manipulating, but taking advantage of a loophole or taking advantage of something that no one's thought of, especially not the regulators, so not doing anything wrong,

but just doing something in the knowledge that it gives them an advantage over others. And then eventually the assumption would be the regulators would catch up with them and say, no, not good enough. And so, I think the point is regulators are always behind the curve on these things.

SPEAKER1   29:03   And when it comes to looking at the future, I mean, especially the firms in your sector, do you think that they are to their liking in terms of building capability to try and mitigate any risk or conduct risk that comes out of more automated forms of trading. They're likely to build their own solutions. Or do you think they're likely to more sort of partner or buy solutions from vendors?

SPEAKER2   29:38   Oh, well, it's probably going to be determined by the balance sheet of that company. I don't think, you know, if I look at some of my peers, what they probably won't have. The financial strength to invest in it, possibly because… And whether he said that, I can better actually I take that, but I don't know, I mean, my gut feeling is that it will be the big players will invest heavily in it and it will help solidify their positions in the market and possibly widen the gap between competitors. But that's because I'm thinking it's quite a lumpy investment.

SPEAKER1   30:48   Could that create additional risks if it's not particularly bespoke to a firm's particular environments? Again, if you're just buying something off the shelf or is it actually better that something is bought off the shelf? Because then you've got sort of a bit of consistency across the market?

SPEAKER2   31:02   Well, once again, consistency across the market is fine, but is the consistency across the market in terms of its adherence to rules, regulations and not open to manipulation or evolution, perhaps. Do you want a system that will not evolve, and it will literally just do the basics? Or do you want one that will evolve and improve, but then you run the risk of it outgrowing your company?

SPEAKER1   31:48   The FCA is made as the example was made quite a lot of using remuneration to try and improve conduct of people, and they look quite heavily at sort of incentives and how they may not be set properly and so may encourage people to take unnecessary risks and stuff. Can you see any possibility that firms might have incentivized machines to behave in a certain way, so rather than being brokers, but in another way.

SPEAKER2   32:25   OK, well, let's not look at it from a broker's perspective. What if you look at the situation in the US where the likes of Robin Hood. Where they their entire M.O. is based upon offering services for nothing on the knowledge that they will get rebated for their flow. That's at the moment in the U.K. that's illegal in the US, is it the correct model? Now, you'd like to think that all that flow is going to be fed through to a liquidity provider that is running an algo and the more flow it gets, the better it can operate and on very thin margin trading.

While still paying for that water flow from the likes of Robin Hood. That worries me.

SPEAKER1	33:44	Are you aware of any sort of industry or sector wide initiatives to sort of look at some of these issues? No, I mean, how would you. Right, that sort of level of collaboration between different while competitors or maybe firms are not directly in the same space but may be trading on the same market. Is there a lot of secrecy or do you think that firms would be willing to sort of cooperate on these issues to try and preserve market integrity and all this kind of stuff?
SPEAKER2	34:24	The only time I've seen competitors working together on a without revealing any proprietary information or working together to grapple with incoming regulations was one where we participated amongst our peers. And the various CEOs all got together to discuss the rollout of MiFID II and how it affected all of us in the same way. And that was one area of complete cooperation which made perfect sense. But I think that's because the sheer size of what was coming down the track more than justified is. I'm not aware of any conversations on the dangers or concerns or issues relating to the increased use of algos in the industry, and I would suspect that it's unlikely to be something that any of the financial institutions that are heavily involved in our trading would want.
SPEAKER1	35:41	Do you think there's a merit in industry led solutions as opposed to sort of top-down legislation? What do you think it be better for?
SPEAKER2	35:58	I think it's usually something in between or something involving both, because industry wide can often just be the sort of those that are the other side of the wall who aren't doing whatever it is, is being reviewed or upset and would probably like to be involved but can't. And therefore, was a bit of a whining exercise, and the regulator could be, you know, coming down from above but looking at it from a different perspective. So, I think you need, what you don't have, is there's not like this is an algo industry association that. Is either represents or is a sort of self, not self-regulating, but sort of. An industry body, that stimulus like the FIA or help set the rules, helps work with the regulators, help works with its members, tries to help navigate the markets and people through the market and navigate changes and be that sort of communication between all the participants, the regulator and the market. But I don't think that's ever been considered for algo trading. I think that the assumption is it just that it's trading is trading, so therefore, you know, it's just trading with it isn't…
SPEAKER1	37:39	Based on what you've seen, I mean, how would you rate the sort of UK's approach to these sorts of things versus maybe how other states of Europe would sort of approach it?
SPEAKER2	37:52	I don't have any first-hand experience in how the regulators have dealt with this. Lot of its regulated. So that's a difficult one.

SPEAKER1	38:04	All the any specific lessons learned that you think a firm like yours could take away from maybe other incidents that happened in the industry? Or so I said again, do you think there are any lessons learned from other incidents that may have happened sort of elsewhere within the broking industry or wider industry?
SPEAKER2	38:29	None really spring to mind. I hope so. I don't know, but I hope so. And so there has to be I mean, if it's like anything if you've done something wrong in your own company and the regulator comes and looks and says, right. Remediation is in order to sort this out, you know, there's an assumption that it does get sorted out. So, any of these algos that have gone berserk, I would imagine the scrutiny following the event saying, you know, what are you doing to make sure that never happens again? But that's an assumption.
SPEAKER1	39:04	What about learning from other sectors that are not financial sectors, but other highly regulated sectors like maybe the aviation sector or medical sector, where there are also algorithms are being heavily used. Now, for example, why pilot planes which go on autopilot and this type of stuff that you're aware of, anything from those types of sectors that you think the financial services industry could learn from?
SPEAKER2	39:33	Well, I'm not aware of any claims that are completely automated…. I think and I I'm not I'm certainly not expert, but taking off and landing is the most dangerous part of an airplane's journey and those are still handled by a pilot. So even if the autopilot is on during the course of flight, the pilot is in charge. He or she is still responsible for that plane. I don't think that's any different to an algo running a trading platform for a company, you know, the management are responsible for it, even if even if they don't manage it on a minute by minute, day by day basis.
SPEAKER1	40:25	Finally, what would your principal concerns for the future be in relation to this topic?
SPEAKER2	40:36	But they don't involve too much?
SPEAKER1	40:39	They don't involve too much.
SPEAKER2	40:41	Yeah, I mean, that's the fear, isn't it? The fear is that if it continues to evolve on the positive, though, maybe as it does continue to evolve, the ability to have subjective aspects….then that could be a positive, goes back to your question about, you know, how do you put in ethical behaviour into an outcome beyond just having them follow the rulebook ? Out of there, I'm just …. there's always this concern that everyone has where the machines take over. And we lose control of the machines.
SPEAKER1	41:26	OK, thank you for your time. Just stop the recording. That is the end of the interview.