Interview with a senior FX trader

SPEAKER1	00:02	So right. So, could you start, please, by telling me what your role is in the investment firm that you work for?
SPEAKER2	00:20	So, I head up the OTC derivatives business, which is a mix of market making and client facilitation for the firm.
SPEAKER1	00:31	And what type of firm is it?
SPEAKER2	00:37	It's a broker dealer. So, are you talking about the risk categorisation?
SPEAKER1	00:43	No, I mean, what kind of services does it offer, what kind of space is it?
SPEAKER2	00:48	And so, it does cross OTC and clearing of listed derivatives, so the products I would specifically work on are within foreign exchange and now soft commodities.
SPEAKER1	01:07	OK, how you would describe the investment firms' goals?
SPEAKER2	01:16	The goal of the firm is to generate a markup between our clients trading and the hedge rate that we hedge their trading risk against, whether that's one for one against a liquidity provider or through a synthetic hedge or another position in our book or through, you know, a similar correlated product.
SPEAKER1	01:43	And does the firm employ any out, deploy any algorithms in its activities?
SPEAKER2	01:53	Yes, we do some in a market making capacity. And in fact, all algorithms, I believe, are in a market making capacity. We don't anything that's client driven and is not part of the market making mandate would be passed straight through.
SPEAKER1	02:11	And that one that that applies does it to both. Does that apply to all the asset classes you're trading? Always that.
SPEAKER2	02:18	Yes, I believe it's across all asset classes. So, there's no algorithms used in hedging of client flow. Everything is DMA, but if a client faces a principal price that's driven by one of our market makers, then there will be algorithms used for kind of generating that price and risk management of the risk that ends up in the trader's book.
SPEAKER1	02:44	Do any of the clients today, you know, you mentioned DMA. Did any of the clients themselves deploy any algorithms that you're aware of in trading with you or not?
SPEAKER2	02:56	With my business particular, but I believe there are clients who trade listed derivatives and clear them to us. We deploy algorithms
SPEAKER1	03:09	And specifically, to the stuff that you're doing. What type of algorithms are you actually deploying?
SPEAKER2	03:19	So, we will use a variety of market making models. So, either they're based on relative value, or they will be what we call ghost algorithms, where we will be

walking working levels on composite traits that are driven by two different underlying prices. And we will have a target level in mind that's not openly quoted, and we will put that out, will deploy the algorithm to trade at those levels when the two composite prices reach a certain level.

SPEAKER1	03:55	So do you have a specific strategy in mind behind them?

SPEAKER2	04:00	Yes, there's this, too. So that one is just it would that what we call the ghost algo is generating a composite price from the underlying and will have a target level in mind and literally it will quote in one of those markets and hedge the second one. Once the first leg is filled, for example, it can be more than two legs. It can be three legs of a trade, for example. That doesn't really have a lot of logic to it other than once the trade level is there, and you know, it will execute the trade and the one that adds a little bit more logic to it. Behind it is the RV model where we will quote, we will provide liquidity into a market based on kind of our skews or interest. And those will be driven by values on relative value, calculations on the underlying assets. So standard stalactite models.

SPEAKER1	04:59	Are any sort of machine learning or artificial intelligence algorithms used?

SPEAKER2	05:09	Not yet internally, and it's obviously part of the conversation, I have used an algorithm, that liquidity provider is provided to hedge a trade as well. So, where they their interface has an AI bot in it, rather than putting in the economics of the trade into a traditional user interface, I'm able to communicate using and what they use MLP behind it to basically work out what I've said. So, say, for example, if I put in Eurodollar 10 M three M, it would work out that I want to trade three months Eurodollar n 10 million users.

SPEAKER1	05:55	Are you aware of any of your sort of counterparts in the market using those types of algorithms? Yes. What do you think is the motivation behind it?

SPEAKER2	06:09	And sometimes I think it's time to deploy technology and perhaps, you know, show that they're kind of leading the arms race that say or the technology stack that they have is somehow more sophisticated and therefore their investors should deploy funds or them or they genuinely have found a way to optimize that workflow through using those technologies . Obviously, people are a little bit guarded about exactly what they do. Sometimes you hear, you know, we offer clients this or we trade using this and you don't know 100 percent the truth behind it.

SPEAKER1	06:46	What in your firm, what is the is there a sort of design deployment, recalibration process? If so, what does that look like?

SPEAKER2	06:57	So yeah, I guess the is it's less structured than maybe a HFT or somebody like that who has a quite consistent is generally managed test by test. It's not a

centralized structure to this. So, we would review any strategy that we have periodically and optimize accordingly.

SPEAKER1	07:17	OK, and does your firm have sort of a risk framework?
SPEAKER2	07:24	Yes, it does. Yeah.
SPEAKER1	07:25	And what is your understanding of what conduct risk is
SPEAKER1	07:30	and what is the general principle
SPEAKER1	07:32	what does it mean? What is it?
SPEAKER2	07:38	Well, I mean, one of the six pillars of risk that we follow as a firm as an approved person , there is an undertaking by myself to behave in a certain manner when providing quotes in the market , and there's a variety of things that impacts , you know , we're all aware of the kind of expectations on us not to do certain things or to behave in a certain way when generating , quote , bit by voice or electronically .
SPEAKER1	08:12	And what, if any, perception is there of conduct risks that may be associated with algorithmic trading specifically or by trading in within the company?
SPEAKER2	08:28	So, what do you mind rephrasing that slightly?
SPEAKER1	08:33	Yes. So, you know, you may have read in the press and stuff. You know, there's things you hear tales, for example, from the equities markets of maybe not the sound of Hounslow, which he was using a sort of algorithmic techniques which helped to cause the flash crash, allegedly because, you know, he was seeking to
SPEAKER3	08:59	layer and
SPEAKER1	09:00	spoof and things like this are the. Is that, you know, obviously that's a different asset class, but is there is there any sort of solid notion of what conduct risk might look like in the context of algorithmic trading, where we businessmen receive training, around spoofing and, you know, the behaviours that we're expected to adhere to?
SPEAKER2	09:17	The spoofing being one, I guess. And it's quite common. And so there was a conduct framework for stuff like that and an expectation by the firm not to have a zero-tolerance policy around stuff like this. So, I believe they had monitoring tools in the background that also independently verify or pick up trades happened. Same outside of the normal behaviour.
SPEAKER1	10:00	What do you think the likely levels are self-calibration in the sort of near, medium and long term? You know, so at the moment. You know, what I've seen in some other firms is that maybe an algorithm still relies a lot on the designer, but self-calibration obviously is a step forward to that. Maybe there's this reinforcement learning and stuff where it becomes a bit more

removed from the designer. What are your thoughts about the levels of that that you might say, you know, in your asset class and maybe within your firm?

SPEAKER2   10:35   I think within my asset class, I definitely think there will be more self-calibration. But within my firm, I think we don't have the kind of technology stack like you, you're referring to AI here, right, where would improve itself? Yeah, we think we already have the I guess the talent that has worked in in this before. So, I think we're quite a few steps away from that. But I can see that there are firms, leading firms in our industry who are doing this actively now because, for example, one of the most developed asset classes out there. So, I know from conversations that there's a lot of ego driven models being employed, deployed in the market.

SPEAKER1   11:32   Given, you know, the idea that maybe that development that's happening in the market, what would be….?Well, how would you rate how would you rate the sort of knowledge and level of understanding of algorithms and the conduct risk they might pose within your firm? Has senior management provided training to the front office and support staff. Do you think it's improving? Is it declining? I mean, where do you see it?

SPEAKER2   11:58   I think it's improving. I think still, if you took firm wide, you know, a lot of our I guess is still proportionately for the size of financial firm that we are, it would probably be more electronic trading as a proportion to voice. You would expect there to be, but there still is a large portion of trading the other way around. That's partly driven because we still have a physical floor trading team on the London Metal Exchange. And if you aggregate the volume of the trading, and that probably still makes a large proportion. So, I think we're developing, but the firm has invested in multiple business areas, in the last year that have grown to electronically and so I think it's a growing and improving understanding amongst all different levels.

SPEAKER1   12:51   And how do people in the firm sort of keep abreast of developments, algorithmic developments and the behaviour of the algorithms, how do they stay on top of that?

SPEAKER2   13:03   In terms of what the kind of events that have happened or just new technology and stuff like that?

SPEAKER1   13:13   Yeah, I'm across the spectrum, I would say. So, you know, maybe big risk events, technology that could change the playing field a bit. Maybe methodologies in terms of control, that type stuff.

SPEAKER2   13:28   I think a lot of the kind of understanding of new technologies from the desks themselves going out and, you know, kind of being aware of what's happening in the market and I guess in terms of events that have happened, we get regular bulletins from our compliance department on anything that's, I guess, in the market has been flagged as an incident, some kind of disciplinary action

or some investigation into a certain issue, etc., to just highlight those to us so that we're aware in case there's something that we see on our side.

SPEAKER1   14:09   Are you aware of any sort of conduct risk incidents that have happened that have involved algorithms in your firm or again, in in the sector in which you operate within the last few years?

SPEAKER2   14:22   Not enough of them. I've seen a lot of issues. For example, on last look, incidents in FX, in FX spot. So, yeah, those I guess, you know, there's been a quite fair few of those. I guess the level of issue is probably, you know, it's something that continually comes up in every single conference and everything like that, so.

SPEAKER1   14:49   And how has your firm responded to those when it became aware of them?

SPEAKER2   14:54   We I guess we monitor the firms that have been flagged, but generally we haven't seen an action such that we've had to remove a liquidity provider from a stack or anything like that. I think it's more a continued debate around the benefit of something like Last Look, which impacts liquidity in the electronic process distributed to the market. So, we've yet to have a provider pulled for it. But we do monitor, for example, the behaviours of all liquidity providers ourselves. And so if we find that , you know , we're finding a lot of partials and kind of behaviour changing , then we will monitor that liquidity before and make sure that , you know , if an LP is perhaps they've deployed a model and it's a little bit more sensitive than what they've typically done in terms of response times or rejection rates , then we'll pull them from the pool while we investigate

SPEAKER1   16:01   what, if any, plans are there within the firm, maybe to reduce overhead as a result of the deployment of our workers in the business?

SPEAKER2   16:14   None that I'm aware of officially, but I believe they would it would make sense that there are certain business areas I can see where there's a high and. A large head count of deaths handling small volume or value traits, but, you know, I'm sure there are plans to report in people with experience from an electronic trading background to senior positions on those tests or see it as part of an obvious transition. But nothing official.

SPEAKER1   16:47   Can you see are there any do you think there is going to be any trends in the market towards, uh, changes in headcount and, you know, which areas of the business do you think would be most affected by that?

SPEAKER2   17:00   So, I guess I work on the most complex products….OTC derivatives. So, there hasn't been the development of electronic trading in this area. It's been quite as a low uptake given the complexity of the products. But in Dota one product of call it like a futures or cash effects market or forward market, which are very simple and easy to quote and manage flow electronically. I just don't

believe there'll be a strong voice presence in those business areas within the next five years. I could see big headcount cuts if I had to make a prediction.

SPEAKER1   17:46   And how do you think that would play out in terms of the management of conduct risk? Because obviously when you've got human beings there. They've got emotions and all this kind of stuff, and maybe they are privy to doing certain things for whatever reason, motivations they have. But when you put when you replace those people with machines. They have different you know, they're working towards specific goals and this kind of stuff, and then maybe, maybe that's their design has goals, maybe it comes from the data. How do you see that playing out in terms of maybe increasing or decreasing combat risk or, you know, having that kind of replacement of human beings with maybe machines in the future?

SPEAKER2   18:35   I think it will be easier to quantify when there's an arms race issue than a discussion over human judgment, you know, on doing something because it's very transparent. Or it's very easy to kind of audit the thought process of most models that go and deploy and behave in a certain way. It's fairly easy to see what drove that change of behaviour or certain trading pattern, whereas the human element is obviously harder to make a judgment on what drove a certain decision or action. So, I think it almost makes it a little bit easier because. You can kind of locate very easily.

SPEAKER1   19:20   And what would you say mean in terms of, you know, those sort of more artificial type algorithms, what sort of approaches do you think firms are taking to mitigate conduct risk that,

SPEAKER1   19:43   you know, may have arisen?

SPEAKER1   19:44   Are other firms doing anything different, differently to what they were doing before? Are any new tools being deployed and anything like that

SPEAKER2   19:55   with regard to monitoring conduct risk?

SPEAKER1   19:58   Yeah, in you know, in more machine led environments, you know, our firm starting to change that controls to try and mitigate those risks as a result of that change in the human to the more machine.

SPEAKER2   20:11   Yeah, I think, I honestly, I don't know what tools exactly we've deployed, but I know that we've reviewed it in recent years and updated providers accordingly. But I don't I don't know anything else that we've done beyond that. I think that will naturally be an assessment of whether we have the right controls and tools in place to do that.

SPEAKER1   20:38   And I haven't seen it. Are you aware of any movement, you know, even within the firm, within the wider market to maybe look to embed certain ethical standards in the actual design and coding of algorithms? So, it's not just programmed towards a sort of specific financial goal, but they're also

programmed towards a specific ethical goal or, you know, to try and mitigate conduct risk.

SPEAKER2   21:13   Not sure I quite understand the question, if I'm honest.

SPEAKER1   21:16   So as an example, if

SPEAKER1   21:19   I have a

SPEAKER1   21:19   driverless car. Yeah, and the driverless car traveling down the road, they have these sorts of sensors built in and it's taking in data from all around it,

SPEAKER1   21:35   and then

SPEAKER1   21:37   what happens is it sees a man walk across the road with a pram and a baby in it. You know, it's got then got a decision to make because it's going too fast, so you've got to carry on and hit the mom or it's got to swerve to one side and there's a guy walking on the pavement who's maybe eight years old. So, he's seen the best days of his life or whatever. But it's going to hit one of them has got a decision to make. And so, the designers of those cars, you know, they might be thinking about, OK, well, in that situation. What exactly what am I going to do? It's not just about me, you know, the obvious goal of the car is to get from A to B. And that's the goal in a similar way that the goal of the trading algorithm is to maybe to increase profit for the company or whatever or execute a client's order in a particular way. And then equally, if it's taking data and it's saying, OK, well, I could take in this data here and it and I could actually get an advantage over that other algorithm over there, the other firm over there if I took the shortcut. But that shortcut in our world could be something like frontrunning. So are you aware of any sort of initiatives or are you seeing anything where, you know, it's not just the designers aren't just looking to programme that goal to make more money or break up this client order and, you know, these tranches or whatever. But it's also sort of saying do it in this particular way. So, make them try and make the money. But at the same time, don't. You know, if you're going to take in data, which gives you an opportunity to front run, don't do that. Are you saying are you aware of anything like that or.

SPEAKER2   23:23   I'm sure there is in more sophisticated terms, but I'm not aware of it and we haven't come across it this.

SPEAKER1   23:37   What sort of detective type tools are you aware of your firm using that may help identify potential conduct risks that are associated with some of the algorithmic execution?

SPEAKER2   23:56   I know that there are tools deployed, I don't actually know the names of them, but I know there are monitoring tools deployed.

SPEAKER1   24:04   Now, they might flag something like maybe wash trades, right?

SPEAKER2	24:07	Something like that, I mean, I might be a poor example of wash trades and that that doesn't make sense because it would look like a party I try to report to AM, but it could be because you're quoting on multiple markets at the same time and the price for a particular market. And it's part of one model and another part, another quote was another model, and they haven't, you know, tried to each other, they might flag something like that. So, it wouldn't appear to be a genuine transaction.
SPEAKER1	24:54	Are those flags reviewed by human reviewers?
SPEAKER2	25:01	They go to your compliance department, who will contact us to ask for an explanation of why a trade has occurred.
SPEAKER1	25:12	How would you rate the ability of those reviewers to detect a possible real issue from, you know, those alerts that are being generated?
SPEAKER2	25:26	I think they would struggle without the alerts. So, I think they depend fairly heavily on those levels.
SPEAKER1	25:37	Do you think they have a good understanding of what the algorithms that you might deploy to? Do you think they've got a good understanding of what they're trying to achieve?
SPEAKER2	25:49	I believe so, yes, because whenever you set up a new business or new business, activity goes under quite thorough review from a law departments compliance being one of them. And at that point, they will carry out a fair amount of diligence on what you're doing, the rationale the technology might use and et cetera. So, I think they understand it from that point of view, but.
SPEAKER1	26:19	And if they if they managed to challenge you in any way on,
SPEAKER1	26:23	you know, in relation to any of
SPEAKER1	26:26	the activity that you're engaged in, if they come to you…
SPEAKER2	26:29	They come to us with your query, it's definitely not a regular basis, but, you know, a periodic basis for if you receive a query on something.
SPEAKER1	26:43	And going a step removed from that, how would you rate what would your perception of the ability of regulators to be able to take and analyse this data in this activity and understand what was happening?
SPEAKER2	27:02	I think they would probably go to our compliance department and ask to see incidents flagged and how we dealt with them, but otherwise, I guess they can't monitor it very…., but they would require some investigation. I've never had anything to do with them in this respect. So, I wouldn't really know.
SPEAKER1	27:25	And in terms of how a firm may evolve its control structure, you know, it could be at a desk level, would be, you know, in in the research department or in the compliance department to try and accommodate some of these developments that, you know, we're seeing in the wider market. Do you think

		is the firm like yours more likely to build solutions in House or s it more likely to sort of look outside and maybe partner and buy from somebody else?
SPEAKER2	28:04	So, say that again. Sorry.
SPEAKER1	28:06	So, in terms of so if I've you know, I'm looking to deploy some new. As these algorithms are evolving and they are, you know, becoming a lot more sophisticated, do you think of firms like your firm are more likely when it comes to controlling those activities, the activities of those algorithms? Are they being it something which firm is likely to the extent that any development is required to build out controls, to apply risk controls or to apply compliance controls or maybe front desk controls? Is that something which is likely to be developed in-house, do you think? Or is it liking a hybrid approach where there's a bit of development in-house and is a bit from outside? Or is it like, oh, we just go out and buy something and try and calibrate it out?
SPEAKER2	29:00	I think for a firm of all size, they would probably have something between a hybrid and buying off the shelf. So, a low integration, but some integration because there's different business areas for different, you know, that have different behaviours and interactions with the market. So, I think we'd be closer to the joint, buy as much off the shelf as we can.
SPEAKER1	29:25	And why is the. But why is that why would you?
SPEAKER2	29:32	I just think resource wise; we don't have you know; I think in an ideal world, you could have somebody on desk independently who had the ability to build bespoke monitoring tools, very specific to each business area. But the practicality is probably the business doesn't have the resource to do something like that. And maybe there is good technology available because this is something that the market is doing, not necessarily just to us, so that there are obviously tools available that can do this off the shelf. And so, for somebody like us vs. a large maybe three tier one bank who has obviously huge resource and many deaths within it that this can be deployed against. So maybe they build something more bespoke that we wouldn't have the resources and someone like us would always. We'd probably be looking to buy something
SPEAKER1	30:32	with one of the big things, I mean, you would, of course, be aware of SMCR, which has just finally gone. The final part of its just gone live, the end of March 30 about the certification and all the rest of it. Obviously, a big part of SMCR as it respects to human beings, is, you know, about incentivizing people to behave in a certain way or deterring them from behaving poorly, maybe through punishment or, you know, a reduction or something like this. When it comes to maybe more machine led trading. How do you see the value in SMCR. In shaping that, because obviously machines are not, they're not subject to the same urges and desires as people and, you know, they're working towards specific goals, which either they set themselves free

recalibration or which have been set by a designer. I mean, is there any do you see any sort of way of incentivizing or deterring machines? I mean. That that could be viable, or do you think actually, you know, it's just it's always going to be something which is, you know, still going to ultimately be driven by human beings? How do you see it playing out?

SPEAKER2   32:05   Good question, but I mean, in my in my view, the person in charge, there's always a responsible person in charge of

SPEAKER2   32:14   a

SPEAKER2   32:15   machine ultimately, even if it's, you know, largely autonomous, still a responsible person within the operating of that model, or to say, I think SMCR probably strengthens the messaging around that makes it, you know, more important for the person who's in charge of a business area or whatever, to fully understand what's happening with the models at that firm deploys.

SPEAKER1   32:48   I mean , as somebody who's on the sort of front line yourself , I mean , how would you feel if , you know , you created a program , an algorithm to do a particular thing , and then you maybe with the help of some other people you made it into a more sophisticated model , was able to sort of learn from data in real time . And then it went off and did something that was really not what you intended at all, but then also not reasonably foreseeable, you know, with respect to the testing that you performed. Do you feel that that's something that you should be responsible for if something went wrong or I mean, or should that algorithm can you see a sort of situation where the algorithm might actually itself be ascribed to degree of agency? You know, I give you an example about what happened in the early 90s. I don't know if you remember something called the Dangerous Dogs Act

SPEAKER2   33:50   and what happened. I know what it is, but

SPEAKER1   33:53   there was a lot of controversy about it because what they said was, is there was a big moral panic in the early 90s about the dogs and the dangerous breeds. And what happened was, is there was like some of the dog owners maybe of not brought up that they trained their dog to behave in the best manner. And there was a sort of

SPEAKER2   34:17   potentially or unintentionally.

SPEAKER1   34:19   Well, you know, this is the thing is at what stage does the dog take on the agency? So, the state was saying, OK, well, we're going to find the owner because the owner maybe reared the dog the wrong way. So that was overly aggressive or something like this. Yeah, the owner is going to take responsibility for that. But then at the same time, we're going to put the dog down because the dog is dangerous. So, the dog has agency itself. It's got a mind of its own. You know, we're going to put the dog down, sort of a similar type thing to that where, you know, in an algorithm is not dissimilar really, because, you know, some there is no dog. There are arguments out there

which say, OK, well, an algorithm should be ascribed to agency itself and be treated almost as an agent, which can be disciplined, fined, destroyed, or this type of stuff in the same way as maybe a human actor would have been when they were sitting on the trading desk in the 1980s or something. Yeah, I mean, what are your thoughts on that type of thing? I mean, do you see any merit in that? Or is your view that actually it's just always ultimately somebody else got it right? You know, it's the human that should always be responsible.

| SPEAKER2 | 35:38 | I guess it's you're going to have to look at….[is]…. was a reasonable effort made to understand what the model was doing? If you made a reasonable attempt to analyse the data and deploy a model and a behaviour happened once and you pull back on it. And perhaps had an escalation of , you know , why a certain behaviour occurred , you know , today it's not you know , you flag it in the way that you might do to , you know , human might make a mistake , you know , if you were a voice , if you are seeking a voice trade and you did something , you did something wrong , you would there's a procedure for reporting that behaviour . And , you know , you can make a mistake as long as you don't try and hide it and keep deploying it and doing it and spoofing the market and then pretending you didn't , you know , if you can't unintentionally spoof , but , you know , if your model did something that was not what you wanted it to and followed the procedure for kind of escalating that , then fine . But if you made no reasonable attempt. So, I guess there's going to be some way of quantifying, you know, saw the model perform and clearly made an active discussion or decision. Perhaps there's a log of, you know, you are talking with your team on it and, you know, you're kind of like, well, no, this is performing how we want it to. It's making good money rather than actually take into consideration what it's doing. And maybe there's some accountability here. |

| SPEAKER1 | 37:26 | Do you think what your perception of maybe some sector wide initiatives in collaboration to sort of maybe address some of the issues, conduct issues associated with algorithmic trading? Is there much discussion between firms or is it quite secretive? What is it? |

| SPEAKER2 | 37:46 | Yeah, I mean, I think some things I see. I see, you know, there's stuff like the effects global code, and there are parts of it that covers algorithmic trading and so this and given that the I guess the people contributing to that are the market participants, really. And so, there is some dialogue around it. But whether there's a. You know, maybe that I haven't seen huge amounts, but there is some industry dialogue, even if you go to conferences, people are debating, you know, laws look like a practice will be on every single conference, for example. So, you know, behaviour, conduct, everything is being discussed and I guess to get an industry view on it, on what's good practice and not bad, but I think there's still some work to do, I guess. |

| SPEAKER1 | 38:46 | And what in terms of sort of vendors that are out there? |

SPEAKER2	38:53	I mean, obviously on
SPEAKER2	38:54	things like LME, you have things like CQG and PATS impacts and stuff like this where they are very popular and the vendors do that, you create this sort of inbuilt algorithmic functionality.
SPEAKER1	39:06	I mean,
SPEAKER1	39:07	is that something like that in the market? And if so, do you believe that? What is your perception in terms of how firms relate to those? I mean, is there are firms sort of taking them out of the box and then. Calibrating themselves and not really relying on the vendors or firms. You know, in your opinion, could firms be placing a lot of reliance on the vendors, maybe too much reliance, or have you seen anything in that respect?
SPEAKER2	39:41	The only ones I've seen are ones where you it's very similar. It's different. Sorry to what you'd get in your pants or a in my experience, where with those you have the ability to modify algorithms quite easily in an intuitive way, I'd say. But in the household, for example, there are algorithms deployed by market participants, but they heavily rely on the vendors design because it's aside from adding in, you know, maybe sly inputs into how you want an order to be executed. And there's not a lot of discretion. It's spacy using a predefined algorithm that's available on the vendors platform. So, you do put a lot of reliance on the vendor.
SPEAKER1	40:30	And how much understanding do you think a vendor has of things like conduct risk, consider these types of issues?
SPEAKER2	40:39	The only vendors I work with or that have this are Tier one banks, and I would assume they have a strong understanding.
SPEAKER1	40:53	And um in terms of sort of mitigating potential issues, what are your thoughts on the merits of, um,
SPEAKER3	41:03	you know, industry
SPEAKER1	41:04	like solutions versus legislative solutions?
SPEAKER3	41:08	So, you know, is it
SPEAKER1	41:11	Do you think it should be led by the market or would you prefer the legislators to take a lead on it?
SPEAKER2	41:22	I feel like the market led approach is more effective in terms of coming up with practical, more practical steps and maybe the regulator one gets followed more closely and.
SPEAKER1	41:47	What's your perception of the effectiveness of maybe how the UK deals with some of these things? The approach that the U.K. regulatory environment has taken to managing the risk associated with algorithmic deployment in terms

of, you know, behaviour, conduct maybe versus, you know, some foreign regulators maybe in the U.S. or Singapore or China, places like this ?

SPEAKER2   42:13   Honestly, I wouldn't know the material differences from those from a US regulators position. I know that perception wise, what they might be. I don't actually know what the real difference is.

SPEAKER1   42:30   How is your perception of how well the current regulatory environment works in the UK because obviously UK implemented MiFID II on 3rd January 18? That made it big with a lot of noise in there about trying to sort of respond to some of the perceived challenges posed by algorithms, particularly in response to the flash crash in 2010. Do you think those measures really affected the space? And if so, do you think they made they made a notable difference anyway, in your opinion, or is it sort of just you haven't really noticed much change?

SPEAKER2   43:15   I think it has brought about some change, but I don't know what quantum that is, to be honest with you, whether it would be bad to give you a. It yeah, if we hadn't made those changes, would that have made our attorney know what it would have looked like? I feel like something would have happened either way to bring us to where we are now, I think that put a big onus on firms to think about these things. But maybe you feel like something would have if it wasn't driven by that, it would have driven by something else, pressures from other markets moving, etc.

SPEAKER1   43:56   So, you're sort of spillover from other sort of asset classes and in terms of any instance that may have happened in the industry, are there any sort of particular lessons learned that you think your firm could learn from in the future or from, you know, incidents that may have happened in this sort of space or…?

SPEAKER2   44:29   Well, not really. Not off the top of my head, I can't think of any.

SPEAKER1   44:36   And is there anything, you know, from other sectors which are deploying a lot of sorts of I mean, I made reference to car driving earlier, autonomous car driving, but there are obviously many others. Is there anything from any of those other sectors that you're sort of more generally aware of that you think could be beneficial, to be brought into our sector in terms of making, you know, reducing the risks associated with this sort of algorithmic deployment in a behavioural sense?

SPEAKER2   45:27   Good question. I mean, there may not be an answer, but yeah, I'm not sure how to

SPEAKER2   45:29   answer that. I did. I had some interesting answers on that particular question. Right. In other words, it's actually some people makes some interesting ones, but it may not be anything.

SPEAKER2   45:41   So, I'm not sure. But I mean, it's an interesting point to make.

SPEAKER1	45:46	And finally, final question. What would your principal concerns be for the future prospects of how things could play out in this sector, in your industry relating to algorithmic deployment?
SPEAKER2	46:08	I think that if this base, my primary, my primary focus is on the derivatives side and I believe that the behaviour of the derivatives side of the market is very different from a Delta one market, such as a spot forward or cash future or whatever happens to be. So as this base grows, I'm not sure if the technology behind it will have been sophisticated enough to deal with a major incident such as we saw last year when the world hit , you know , kind of shock event , you know , White Swan or whatever you want to call it , the shock event that that basically disrupted the microstructure of every single market , but in particular derivatives , one which is fairly illiquid and , you know , the best of times had to go through a period. Now, if there were a lot of. Sophisticated electronic participants in this and an incident happened, I'm not sure how they can manage through those periods, if the space develops very quickly over the next two, three, four, five years, as technology develops in a in a kind of panic moment and the quantum of what that might cause and, you know, you've seen in the last week a very much more vanilla, but still derivatives market where a fund in the US has put unrelated derivatives and the market has chosen to liquidate those positions and cause disproportionate moves in the underlying asset as they're their prime brokers liquidate those positions. If the derivatives market in this space develops in the same way, you could get a disruption like that where you know it's over to risk managers to get out of positions because it is much more difficult to liquidate those kinds of positions and manage the risk associated to them in the tail risk scenario. So, I guess that's my biggest concern.
SPEAKER1	48:26	OK, that concludes the interview, so thank you for your time. I'm just going to stop the recording.