

***Interview with a senior manager #9***

- SPEAKER1 00:06 OK, so just to begin with, could you just describe your role and sort of background in the investment industry?
- SPEAKER2 00:17 Certainly, sir. My current role was as chief risk officer, [REDACTED] with a wealth management firm predominantly. But we also have broking arms both on the buy side and sell side. So, we did retail out parking on the south side and we have corporate broking and finance on the buy side. So as chief risk officer, it's my responsibility within the firm to essentially implement the risk management framework and advise the board on things like risk appetite and risk tolerance within the firm covering all areas of risk, both financial and non-financial. So, core operational and derivative risks, plus market counterparty and credit risk. So that's my current role. My background has been in risk my entire life. I started out as a broker and then moved on to managing market risk and counterparty credit risk as an equity and an equity derivatives trader and managed a portfolio business for a company based in London. So, I mean, it's this. Keep the names out, she said. So yeah, that was first of 10, 11 years of my life, the heavy focus on market credit and counterparty risk and then moving to a similar brokerage firm covering the non-financial side. So, the operational risk and that's kind of it all come together now.
- SPEAKER1 01:37 And what kind of products does your firm try to make, what sort of asset classes is it trading in, the types of actual products? Sure.
- SPEAKER2 01:47 So primarily a lot of these equities and equity funds and so exchange traded funds and notes and things of that nature. We also transact in bonds. We have a while. We execute also we offer some OTC derivatives in the form of CFDs or contracts. The differences via third party sites, equity funds, bonds or the primary ones. A lot of what we do on the buy side is going to be fund raising in terms of placing for shares and things of that nature as well. But to summarize, I guess shares and bonds are the big ones, OK?
- SPEAKER1 02:29 And in your deal, does your firm deploy any algorithms? I mean, that they make it to effectively summarize that there are three types of algorithms. There is starting from the sort of basic one, there's a sort of order router which is more lightly regulated, and then there's the execution enhancement. So that's where you know that tools for a broker or for clients, actually. So it could be that platforms offer to a client, or the client puts their own platform on and, you know, they can change things. I mean, the simplest stop loss and iceberg type functions would count as an algorithm. And then, of course, at the top end to the level where you've got this sort of more proprietary sort of investment decision algos, which may be what most people think of when straight Blackbox, that type of stuff. Do you guys or any of your clients, is that sort of big deployment in that or so?

- SPEAKER2 03:33 I was to say it not so much at the top end, the high end and the black box stuff, but absolutely we have a number of routes to market in terms of execution in both the use of smart order routing technology and in the wealth management teams as a wealth manager, managing portfolios, potentially executing large transactions for significant groups of clients, then you have to leverage certain types of algorithm to get the execution done without showing your hand to the market, as it were. So, yeah, even like you cited everything from basic icebergs and stops, also vibes to IPOs, all those basic tools are used by the team to execute. If you execute in size and try not to impact the market.
- SPEAKER1 04:17 Is that deployment more prevalent in the security in the equity side or is it also something which you would see on the bond side as well?
- SPEAKER2 04:28 More on the equity side, just because the equity side is more technologically mature. We had set sort of books and things like that for twenty-five, twenty, twenty-five years now. And bonds are behind the curve, shall we say, in terms of digitalization of the execution method. So, for us, it's very much heavily focused on the equity side of things.
- SPEAKER1 04:55 Why do you think the bonds sort of have lagged behind? Is that being it its ability to scale it? Is it the fact of, you know, obviously with equities, you have you know, a lot of them are listed there. They have to be listed on the method. Whereas with bonds, you know, there's a lot of OTC with bonds. I mean, they might be listed, but they're traded OTC. Say, what is it about the structure of the bond market, which perhaps makes it not as favourable?
- SPEAKER2 05:27 I guess it could be a legacy of things , as you say it shares have been listed for a long time and especially in London , LSE was an early adopter of a lot of technological advancements , both , you know , once we move toward a big trading from market maker trading and things of that nature . And I think that technological adoption has just been a natural progression from my side and trying to think, well, it's, well, easier to understand shares. I don't know, share trading wasn't prevalent amongst the masses and say up until the very late 90s with the tech boom. But they're also generally much easier to understand the moment you start talking about bonds and carried interest and things of that nature. And you still find for most people that you talk to, the average person on the street, they think they know something about shares, but most bonds, lots of bonds don't get it. So is that I mean, there are there is an obvious level of complexity with bonds vs. shares, but it's just that perception of it as well. There was a need to enhance technologically with regards to shares. I mean, we wouldn't be where we are today without the technology...long in back in the late 90s, with so many market makers competing for the business. But by plugging in the technology, allowing firms to connect directly to exchanges and orders and support that rollout of technology, it's just kind of been that natural progression. Whereas, as you say, with bonds, you solicited but without having any limited online trading options, it's just not been a push for it. And I guess

ultimately, it's the market that decides it. I mean, if the participants had wanted it to happen, you know, if there'd been a real need to digitize everything and centralize have central council parties allow for automated bruited and then it would have happened before now. So, it's definitely partly to do with the fact that participants are generally happy with that slower pace of digitalisation and evolution you think is a measure.

- SPEAKER1 07:38 Is there an element there of self-interest perhaps that, you know, I mean, I've worked in firms with bond traders. They tend to be, you know, from an older demographic, in my experience. And, you know, my personal perception is maybe, you know, that if there's a particular way, they've negotiated their trades and that it's quite lucrative for them or can be quite lucrative for them. Did you think there's a there's a sort of is there an element of that or is it purely because obviously, of course, back in the day we've runners and stuff on an equities exchange would have been the same thing, right? Many people would have had.
- SPEAKER2 08:23 So, they I can't see how there isn't an element of that. I mean, if you are watching what's happened in the equity markets for the good, it's done. One of the negatives that has been the human cost is that there's a fraction in front of staff relative to what was in place to get a transaction over the line back in the late 1990s and early 90s. And I was very interested in this myself. When I, you know, of my market risk management career and my team was 10 percent, five percent of what it was 10 years earlier because the technology meant you didn't need to stop. So, I think there's absolutely some self-interest as well. If it really is working again with the market there, if the participants are happy with how they're doing things, you know, it ain't broke, don't fix it. So, if it's working well, yeah. And then that is self-interest as well, then you absolutely can see it. I mean, that's one thing that you would definitely be wary of, is that once everything is digitalized, once it's online, once you have that transparency, then the ability it becomes very clear that our brokerages charging me some broker fees, charging me why, and I can easily see, you know, where I get the most efficient execution in terms of time and cost and things of that nature. And a lot of that that that came in on MiFID I for shares and was enhanced on the MiFID II share. This is as great for the consumer, but definitely makes it harder for your average financial services providing company. So, yeah, I think, yeah, that has to be an element of self interest in that.
- SPEAKER1 10:00 MIFID II, as you'll be aware, introduced quite a wide range of new provisions in relation to algo trading and direct electronic access and stuff in the systems and controls around that. And a lot of that was obviously relevant to it. People were in compliance departments, but also to risk departments as well. I mean, how involved are you, if at all, in this sort of deployment and calibration processes for the sort of vendor platforms that you use? And is that something

which you get involved in or is that very much sort of left it in front desk to sort of deal with?

- SPEAKER2 10:48 It's a combination, so you need to and the front end needs to determine what they need commercially, and so you pick the products that's going to solve the problem and you need IT to integrate it. Absolutely. Boards are expected to have an understanding of calibration since the system is just not acceptable to have these black boxes squirreled away in a basement with a couple of really, really smart genius guys. And even they have trouble understanding what goes in, what comes out. And, you know, if you take out things like small, older is and execution, the best execution rules are a great example of that. The thought for it's the compliance team in the second line who are monitoring best execution primarily on top of what the first line does. But we have to be constantly looking at what those algorithms are doing, those smart older routers. Why did it route these trends? You don't look at every transaction, obviously, but as an example, you would, you know, say on this given transaction, did we give the client best execution? Why did it route to venue rather than be widely delayed, the execution, etc., so you have to drill down at the granular level. And as that information gets aggregated, goes upwards, the board needs to have an understanding of the performance of those. And so that's mainly done by best execution, which is, you know, when have there been instances where we haven't provided best execution? Why did that occur? How can we engage with the order router provider if it's external work itself, how can we change it to make it more efficient? And this is constant feedback loop for the older routers and those sorts here to algorithms that you mentioned, icebergs and the like for improving and enhancing them to catch up with changes to trends in trading and transactions.
- SPEAKER1 12:43 Does conduct risk feature as a part of that collaboration process, is that a consideration or is it more sort of more traditional risk type things? You know, you the ability of maybe of an algorithm malfunctioning and spewing off a load of orders, which is not necessarily at risk? It could be, but not necessarily. Is that being that a feature instead of what you're seeing in terms of how firms are looking at calibration? Or is that really a sort of secondary thing?
- SPEAKER2 13:23 It's definitely not secondary, it's whether the two might be considered side by side works streams so for me as a risk officer conduct risk post SMCR, but even well into the lead up. I was a risk officer. I've been looking at conduct and how you elicit the right conduct and outcomes, and you don't encourage negative conduct, of course, for quite some time. And absolutely, we look at conduct across the board what is a regulatory requirement, but to its FCA in London has made it apparent underestimates the Auburn player on the scale that it is the financial firm's job to determine which of their staff who are fit and proper when there's been a conduct breach. So, it's prevalent everywhere. And absolutely there are. When you're designing small old routines and execution algorithms, there are definitely conduct risks there. All you're right, the

systems and controls risk as well. And but it's important to understand conduct risk, the negligence itself, being negligent is itself poor conduct. So whilst there might you could be intentional in terms of what you're trying to do with an algorithm to fox the market or do something on the hand of being negligent , not having the right levels of systems and controls in to ensure that you're overseeing an algorithmic process in the right way is itself a systems control failure but is itself a conduct failure?

SPEAKER1 14:50 I've spoken to a wide range of people so far with a lot of differing views on this, but is there a sense that the growth sort of algorithmic trading automation? You know and going further on from that sort of artificial intelligence type stuff, is there a sense that that is creating new conduct risks or is it more of a case that they all let all these things do is really amplify and maybe change conduct risk that already existed in the past?

SPEAKER2 15:30 It's definitely a constantly shifting landscape , so you're not touching what we discussed before , but I say if we go right to the far end of the scale where they are , it's very clear that once you start talking about your eye and singularities and new life forms , that the problem we've got to buy for us humans and even to the fairly rudimentary computers that we programmed on the back of it , just not going to be fit for purpose . So, knowing that in destination, you have to acknowledge that the regulations are going to have to evolve, continue to evolve as we become more and more sophisticated with these sorts of things. That's the biggest difficulty with eyes, is the corollary with black boxes is being able to have a system where, you know, you might see the inputs go in and the outputs come out, but that system can't really tell you why it reached the decision it reached. And it can't replicate it. And you almost getting to a point there is that true or is the computer lying to me about computers? Can't technically lie. But once you get to things like your eyes and the real the singularity stuff, what does that mean for the regulatory environment? Now, that's a long way off, arguably, as much as Elon Musk hopes it sooner. And it's very exciting developments. I think it's a long way off. But you're absolutely right that this the conduct of the people programming these things and what they're doing. The regulations, by their nature, generally, what we're always playing catch up, right? You bring out a new regulation and a few years later, like a few years later, it has to constantly be updated and amended to take account for the changes to markets and trends. So, they are going to continue to have to evolve when it's for me, is risk of there is it's a difficult thing because it's a very advanced discipline as well. Right. And you're talking about the program itself...is not very little bit of programming code. So once you get into understanding the levels of process and systems and controls around programming , some of these very powerful machines that do this very clever stuff , how do I as a risk officer and therefore when I'm advising the board , I try to interpret the things for the board , although I'm sure that the board is does understand , but they need to understand . It's how do you. Well, so,

yeah, it's about layers. It's about layers of information. And it's about ensuring that education on board members is critical. So, the amount of education a board member has to go through now vs. 20 years ago is unbelievable. Not just on a cybersecurity. You have to understand cyber and digital security casts. You know, client assets, segregation roles have to be given constant training. And so, it's about making sure they receive the right MI and more, empowering them with the right information to be able to interpret that advice. So that could be so it could be training the board. But it's also making sure that your second line has the expertise. It's about making sure your third line has the expertise. So, yeah, I need a really smart genius building the thing. I probably need another wanting to learn and probably one in the third line as well. It's allowing those second line and third line roles to go externally when necessary to get external input. But it's all about the oversight and being able to really be confident that when I receive a piece of information, it's telling me something. I understand what it's telling me. And I have put reliance in it in confidence that what it's telling me is correct.

SPEAKER1     19:12    Working for a wealth management business that you mentioned at the beginning. I mean....are you seeing a sort of change to the type of person that that type of business might have employed from, say, 20 years ago? I mean, have there been any sort of migrations in headcount focused from maybe one area to another area as a result of the structural changes? Or is it, you know, as say, not really changed much at all? Was it really just sort of the case, as you were? You know, we've got to learn some new stuff

SPEAKER2     19:46    As a first line... 10, 20 years...it's probably the same in the quants have been coming to the trading floor. I mean, I've been on the trading floor for 30, 40 years from the big booms, as we saw, I think it was the 90s and the early 90s. You still need those smart people in your teams and on your front office teams to be building and coding these machines. And so that's probably not changed too much. You salespeople and your traders, salespeople and traders will be these youngsters have grown up in an environment where a lot of these technologies is to hand and it's just an accepted part of their day to day lives. So, they're kind of doing the jobs that some of us are doing 20, 30 years ago. But they're used to do...how they're doing or the area in which they're doing it. But I think the obvious biggest growth has been the second line in the last 10 or 20 years. In the noughties, in the early teens, he was very much compliance. There were you know, there were weeks in London where tens and tens, if not hundreds, some weeks, the big banks which were brought up by the staff because of the global financial crisis. And I'm with me, there was a real realization or an acknowledgement that we can see what's happened here, the shift in the regulatory burden and the FCA. Has acknowledged when he became CEO and so before that , that they need to be more prescriptive and Hands-On at regulating firms and so firms because they needed to staff the staff who understood those regulations behind the scenes to address that risk

has been more in my mind in the last 10 years , especially on the operational risk . We've been looking at operational risks for longer than that, and we'd be looking at market credit and counterparty risk for thousands of years across, you know, going all the way back to Boston and things like that. But in terms of the discipline of operational risk and more generally, it's evolved quite significantly in the last 10 to 15 years. And to do so even more in the next 10 to 15 years, again, supported by things like technology, whilst technology can be scary. It definitely has its benefits again. So, we are using smart computers and big data to analyse vast a wealth of data about your business. Both the explicit risk data in terms of these are the risks and the eventuality. And also telling you about risks you didn't even have is potentially a good thing, but also brings with it its own, its own concerns and worries about systems and controls.

SPEAKER1      22:28 Is that being this sort of things from like calibration? You mentioned management information and, you know, the different inputs to the stuff. Does that feed through to the processes that you know? Is that really, I mean, do you find that obviously that's going to change that in six months with the new prudential rules that are going to come in and that it's going to amend things quite a bit. But some of the cosmetically, some of it more seriously, but do you think that it's really joined up and defined as a risk manager? Do you find that process useful in terms of looking at incidents that may have occurred involving some of this stuff? Or is it really do you think is your sense really that in most firms it may be sort of seen more as a sort of thing that you just got to get for and it doesn't really help them manage any of the risks that are associated with this type of activity?

SPEAKER2      23:26 Yes, it's a good question, the sophistication of the smuggling is of you can even in tiny firms, you could document millions of different risks if you get granular and sophisticated enough. So, it's a difficulty with risk assessments and finding that balance. So, to go back to the style of your question, I guess absolutely. The icecaps are going to be replaced by the Ikara under the new investment firm's Prudential regime, and there's definitely some enhancements to the process. Pillar two is still the requirement to perform a risk assessment on your business and determine how much regulatory capital you should hold as a result of the residual risk that exists within your firm. So, a high-level statement then, yes, how do you take those sorts of risks, those very complex risks related to algorithms and things of that nature? And when you're assessing them within your broad framework, is it fit for purpose? You need to have a holistic view of risk and an enterprise risk management framework, but it's becoming increasingly difficult to find. You don't really have a one size fits all risk framework. So, once you start differentiating things again, that brings in its own challenges. So, trying to really understand that. Sorry. And then lastly, my parents so, so sorry, what was I saying? Sorry, I just totally dropped off.

- SPEAKER1 24:59 So, I think you were talking about one trying to sort of gather sort of operate it, trying to sort of make sense.
- SPEAKER2 25:07 Yeah, sorry. Exactly that. So, I can go into this process and document risks related to algorithmic trading conduct, operational change management, all these different types of risks. But it's bound to how you assess that, determine that residual risk is fairly easy for me to write down a risk and say what? Inherently, I think it's this. I have some controls in place. I think my residual risk is low. I'll hold a little bit of capital. But have you really gone through the process in depth enough to be confident with that residual output because that residual risk output which is going to feed into your capital assessment process and determine how much capital you hold? So, there are processes in place to help that. So, you need the knowledge upfront to make that assessment. But we do feed in when there is a failure, an operational failure or a breach or something that information has to then feedback in and lead to a change in risk assessment. So if you're not, firms who aren't doing that, yeah, you can see that they might have assessed this risk it's green and they leave it on the shelf for two years and then next year will come in and say, yeah, but you had one, you left it on the shelf for two years, so you should definitely never do that. But also, yeah, you've had lots of operational filings in this area. Why did you not reassess the risk? Why are you not holding more capital against this risk? So, it's again, it's that level of knowledge and complexity of those issues and saying, did we understand enough to assess the risk in our current risk framework and therefore be confident we are holding the right amount of regulatory capital?
- SPEAKER1 26:41 How far would you say that that type of assessment and maybe taking your firm, you know, you mentioned that the deployment is in the lower end of the Algorithmics scale? How far those types of assessments, inward looking and how far they outward looking? So, by outward looking, I mean, I understand, or at least I've never used it myself, but in the banking sector, the British Bankers Association, they have sort of anonymized operational risk data reporting. Is that something you've used before?
- SPEAKER2 27:19 Yes, we use both internal and external operational event data in in what we do within charts. So, the internal is you have to start within certain key for every event. You want to link it back to its risk and relevant controls where they've failed. So, you can have that full feedback loop of your specific process. Absolutely not. Just to make sure you get the rest the compliance through the same. Whenever an event occurs at another firm, we will look at that event and say, could that, you know, does that apply to us even if it's if it's entirely different, a carbon credits trade? There are certain things that they'll do that could absolutely we could see correlations with what we do. And so, we would absolutely look at that and try and understand what occurred and determine if we think there's perhaps an unidentified risk within our own business that we need to consider. So, yeah, I find the external...especially the smaller firm. We



are a smallish youngish firm. So, we don't have the 30, 40, 50, many years of data, I guess not any more on the GDP side of the budget, but the experience of managing the amount of data that, say, a Barclays or JP Morgan do so whilst our own we only have a limited amount of internal data. So, turning towards external sources to understand challenges are being placed elsewhere is absolutely critical to helping to understand your own risks.

SPEAKER1 28:45 Have there been any sort of major conduct risk incidents that have occurred in relation to the deployment of algorithms in the sort of sector in the last few years that you're aware of, that you've sort of looked at and for actually, you know, we need to maybe consider how this might affect our own trading or something like this .

SPEAKER2 29:06 Not the lower end. I'm trying to think. I mean, the big conduct risks have been the biggest news stories have been the price fixing pieces. Right. Which have themselves leverage some elements of technology, albeit not algorithms, but at the lower end. Not that I'm aware of. I'm trying to think...there's nothing that I've picked up that's led us to that. Because when you think about small, older routers and things like icebergs and stuff, if they're mis calibrated, it's normally due to negligence rather than directly trying to achieve something. Whereas when you get into the bigger a through Blackbox kind of stuff and dealings in dark pools and things of that nature, I think that's more where it sits at the end. And because we don't really have anything with that level of sophistication at the moment, there's nothing that really jumps out at me.

SPEAKER1 30:02 I mean, one of the things which I mean, I certainly had discussions with our risk managers within places that I've worked previously with around the sort of scope of responsibility for surveillance in ASX and particularly around real time monitoring. And they sort of have a system which produces alerts within five seconds of this kind of stuff, is that something which you've sort of had any involvement in in that kind of type of surveillance and or is that not something that you guys have been using on?

SPEAKER2 30:43 It depends on the area, so, yes, automated surveillance is dependent on the scale of your business, so we don't do props. So, if you want to prop up what you need to have real time position, keep in and understand your capital position on a real time basis. Because if you've got a proposition, you need to know the market moves against you. Do you need to know exactly how much cash you have a viable floor take advantage of opportunities. So, I guess it's more on those sorts of firms than for us. I mean, we do have automated monitoring and we do have the temporal granularity of the time frame who's very dependent on the output. So, for market abuse is a good example. So, there are algorithms looking at transactions and saying, is this transaction suspicious? Now the transaction happens now even if the news breaks immediately afterwards, do you say that's flagged as suspicious immediately? Sometimes you have to wait a period of time before a system. Can I identify a

particular type of abuse or suspicious behaviour? So, yes, we do use automated monitoring for abuse. Okay. Have you taken as the position size gone too big or if so, a good example of wealth management to execute a trade for a client or a portfolio of trades for that client? Doing an assessment would have been full on that client and what investments are suitable for them, what their investment goals are, et cetera, et cetera. And if they tried to execute transactions that were not suitable for that client or try and buy more stock than they had money... that they're actually automated controls and reporting that would kick out to that would stop traders doing things they shouldn't do. That would send advice to compliance when limits were nearing and things of that nature. It's compliance and risk, I should say. The second line defines that you send...advices those times when they are sent compliance and risk to the won't proceed until a compliance officer or risk officer is given approval for a transaction to go ahead. So, there are processes where there is real time monitoring. But so, for us, it's not so much the second piece at a high level because we're not running any propositions. But yeah, we have we have systems that are running constantly in the background to looking at certain types of information and providing more and alerts to relevant staff as needed.

SPEAKER1 33:17 I mean, a lot of those are sort of T+1 type solutions, I mean, is it more like that or is there more of a move to real time now?

SPEAKER2 33:31 You're right to say that a lot of T+1 by that very nature, just because something happens right now, even if I say if I put a stop now on a second later jumped through the roof, most banks I'm not going to immediately say "right, start investigation. We've got 20 minutes to get this done." And report and lock things in, as you say. Still generally accepted that you're going to wait. You need to see how certain things play out is different on the algorithmic side. Even so, we're not on the deep side. Right. But absolutely. You can understand why it's necessary on the algorithmic side, because the amount of the amount and the level of sophistication of transactions that can happen in a second algorithmically, you know, it would take you days and days to lay out manually if you were sitting there putting tickets in. So being able to identify things happening from microseconds algorithmically is more important. But again, because we're not using those sorts of algorithms, it's not something we're exposed to.

SPEAKER1 34:30 Do you guys have a concept of a kill switch or is that because you're not dealing on our account? Is that something you've sort of concluded you don't need to worry about?

SPEAKER2 34:42 I don't need to worry about this. We're not dealing on our own account, but I guess we do. Well, sorry, we're not taking proper positions, but we do it on my own account sometimes or we charged as principle with parties. So, there are capital implications for some of those transactions. And absolutely, we need to be aware of what is the regulatory capital implications of that transaction and

being able to say, no, this cannot go ahead because we don't have the capital support if that was to be the case. So, but and we don't have a kill switch per say, as in an automated system that would look at this algorithm is starting to misbehave and therefore, you know, stop it from trading. I have seen filings in that in my earlier career as an expert. We had some automated systems that didn't have a right kill switch in. And I think, again, I won't say any names, but the developer made a change that meant that when the system executed a trade, it books that trade only one percent of its value. So, it bought 100000 pounds worth of stock. It books a thousand in the system. And therefore, the algorithm looked at itself again and said, I probably need another nine hundred nine hundred ninety-nine thousand shares. I went and bought those, but I booked a fraction of the value I did when it went off the rails for an hour. So as soon as we started noticing the positions floating through, we absolutely pulled the plug on it. But by that point, there was a significant amount of stock that had to be unwound. So, the need to have that level of sophisticated automated monitoring to be this, I think there's a problem. You need to look at this urgently or the most extreme level to be able to say, no, I've stopped this thing from performing because it's absolutely acting. Its behaviour is outside of expecting norms that you have to have those in place. It might be.

- SPEAKER1 36:40 Is most of the access that you type of firm would give, I mean, you mentioned about the sort of I think like a white label platform, is that the only type of platform that you would give to clients? And, you know, is most of the sort of trading that you do still sort of traditional where some do leave in order and then the broker would work out or they, the wealth manager, work out how to...?
- SPEAKER2 37:04 Process that we do have some automated flows and we do have APIs, we're not as sophisticated as a number of market participants in terms we don't have deep fixed APIs that you can come and just plug simply into it and start hitting the exchange 10 minutes later than never that quick, obviously. But, you know, I mean, it's not the real bread and butter. So, we do have a little bit of it. But, yes, a lot of what we're doing is because we're although we doing equities, a lot of our specialization is in the small cap space. We do a lot of blue chips, but we're well known for our expertise in the small cap market. And so, the nature of those we talked about how the bond market hasn't changed much equity market has. And although the bottom end is probably still a bit more bond like and much like it was 20 years ago, and you have to you need a network of market makers and participants if you want to transact any sort of size in smaller at night. So, yeah.
- SPEAKER1 38:06 So, coming towards the sort of conclusion of it, I mean, in terms of sort of industry and sector wide collaboration to sort of maybe share information and maybe address issues. I mean, so far what I've seen speaking to others is that there's this really wide variation. I mean, for example, the London Metal Exchange, there are actual trading groups, groups which are run by the LME for

the traders. So, they would discuss issues which are common to each of the members and stuff like this foreign exchange, obviously, given its structure is a lot more, how can I say it's there's a lot more variation, but I mean, in your sort of space and maybe, I don't know with bonds, I mean, I think there is something called ICMA You may have come across them, or ICMA, they sort of seem to do quite a bit of stuff in this will be like an association of forefoot or bond traders and stuff. Is there much collaboration in your sense, to sort of address issues which are common to the market, or is it very much like, you know, people sort of work independently and they just sort of come across news that sort of published in the public domain?

SPEAKER2 39:28 I think it's a bit of both. I'm a little bit sceptical of associations because the whole point of them is serving the interests of their members. And again, if you end up with a bunch of members who decide that the status quo is quite comfortable for them and that they are making a lot of money out of it, then it's not what's in the best interest of the wider market. But in terms of for me as a risk officer and I think when dealing with my peers at forums, I'm a member of the Institute of Operational Risk and the Industry Risk Management. There are a lot of forums that they put on under Chatham House rules. And I you know; I've learned to become comfortable dealing in those situations to discuss challenges I'm facing and listening to challenges my peers are facing so that we can discuss. And again, you take that information away. You look at it and consider where you're going to face some challenges. But also, if you take someone's face, the challenge you've overcome, I'm fairly open again. You don't give away like..., but try them in the right direction, because ultimately, as a risk manager, as a senior manager who's accountable for risk management and accountable to the FCA, I understand that this is the conduct in the market is about all of us put in the right direction. So, I absolutely I'm involved in those sorts of forums through all the third parties with regards to risk management, I reach. What I mean is we discuss these challenges of high levels and understand or try and, you know, get to a response of what might be the way to manage them as touched on earlier, the discipline so young. So, there are there's quite a wide variation in how certain things is done. And we're still trying to understand fundamental stuff like classical classification of how you classify risk is something that's still changing all the time. And there's a few different ways of doing it. Still no real consensus about what's the best way to classify your risk so that you can break them down and understand the risks outwardly. So, we've got more to do. Well, I think risk and I'd say the same when I goes to certain compliance forums as well, it's fairly open in terms of the Chatham House that people will say is a high level scenario that we faced on a theoretical or we will discuss something that was in the news and that we are we are trying to be better as a whole. I'm sure there are people who have no interest in doing those things. But for me, I find it really useful.

SPEAKER1 42:01 In your view, I mean, what are the merits of sort of that type of approach versus some more top-down legislative approach? I mean, do you think that the balance is about right at the moment or does that need to be more stick from above or perhaps even more carrot? I mean, because, again, I'm speaking to different participants say really are some mixed views on this. I mean, some are quite ambivalent about you know, the involvement of regulation and regulators and seem to believe that they don't necessarily have to always have the expertise, but then others are, you know, they think that it's necessary to have that involvement because otherwise people may not take it seriously and they don't fear any consequences. I mean. You know, do you think that it's something? Do you think there's more work that needs to come from the regulator? Do you think they've got it right or do you think it's something that the firms need to sort of take the lead on?

SPEAKER2 42:59 So, it's definitely both. So, I agree with you that the regulator especially is a civil government body, which certainly doesn't have the all the resources it needs to do everything it needs to do. So that is definitely one challenge. But the reason the stick has got so much bigger over the last 10, 15, 20 years is unfortunately, if everyone everyone's honest with themselves, it needed to get bigger. We are a financial services industry is all at self-regulating in general. You know, if everything was hunky dory and clients had good customer outcomes were evident everywhere and firms didn't fail, and we all held the right amount of capital, and it was it was perfect. I absolutely think the regulatory burden would be reduced. The reason it is not because firms keep finding that it's still possible for every now and again the criminal to slip in and do something they shouldn't do, which we are bad at self-regulating in general. And that's why the regulatory burden continues to increase. You know, the global financial crisis put us to our knees for a period of time. So, you can't have you know, I'm a capitalist. I'm all for free markets in the light. But we you can't have firms setting up a Ponzi schemes or just losing, you know, retirees' pensions. It's just not acceptable. So that's why I'm very open. And I like to engage with others who are open to do on board with saying, look, yes, we've got to make money. Absolutely. We're trying to build a business here, make some money, but we have to do it in the right way. And that's why the language of good customer outcomes, of monitoring risks to customers, to the market, to the firm, the language tells you what the FCA said. They're very clear about what they want us to do and the ways of doing these things. And I think as well with regulation is becoming clearer because it was principles based initially. It could be a bit difficult to nail down specifics, but it's very clear now I think what's expected and the better we get at managing those things, stopping the negative events and ensuring that we can demonstrate that customers are receiving a value for money service. So, is helping them build for the future then? Maybe one day. We don't need the regulations, but yeah, we've been this place for so many years. We're still on a long journey.

- SPEAKER1 45:22 Do you think the UK regulatory approach I mean; how would you rate that compared to say what happens in the States? You'll see quite a number. I mean, there's so much I mean, I used to see a lot of fines given out by the CME, almost like parking tickets, you know, filtering and spoofing and other some sort of automation or algorithmic related issues. You don't see so many from the FCA. I mean, there's only a couple that spring to mind where I can see that they've taken disciplinary action in the last 10 years. And then in Europe, you know, it's very different. I mean, don't seem to see any very, very few notices published at all. I mean, how do you think we've got the balance right or do we need to change our approach? I mean, obviously, just Brexit in the background as well.
- SPEAKER2 46:11 Oh, yeah, I mean, the whole point of fighting someone is to well, hopefully you hit them hard enough that they don't commit the crime and cannot make that mistake again, but not so hard that you put them out of business. So, it's fine that balance. Yes, fighting people no. But no one percent of the you know, is like, sure, I'll take a hundred of those every day. And there is that broad attitude in a lot of areas, especially in the states where the risk you know, if you look at it this way, I'll be clear from a purist management perspective, if it's like, well, the risk is if we get caught, it's going to cost us this, well, OK, I will accept that risk. But you're right. There's that side of the coin. And then I'll be identifying enough in London. I don't know when it does do its investigations is good, but they've obviously had some findings themselves. I won't mention any names but there's been in a couple in the last years where he'd been FCA has subsequently had to have an independent review of how it oversaw a business and found that it was lacking. So, I think that you would see more out of FCA if they had the resources. It's just, again, as a government body, as a civil body that's relying on civil taxpayers' dollars to fund it. It's probably not got the full number of resources it needs to do its job.
- SPEAKER1 47:33 Do you think the financial services sector could learn from any of the highly regulated sectors about how to sort of mitigate manage risk associated with sort of deployment of algorithms and possibly, you know, going feral, not AI and machine learning? And obviously they started to be a bigger growth in deployment in the NHS and stuff if doctors and also, you know, driverless cars. And there's still some concerns about the ethics around those. Does anything spring to mind that, so, you think, oh, maybe we could learn something from that?
- SPEAKER2 48:10 Absolutely. I so I like looking outside of the sector various times to see what you can learn. Absolutely. In those areas right now. Two great examples, health care and driverless cars. The impact of a risk of one of those to go wrong is a person dies potentially. Right. So, the impact is there's no higher impact than that. But for financial services, some firms still view conduct risk as a nebulous concept. It's not the thing that really comes home. So absolutely. When you're your own worst-case impacts is that someone dies, then you can absolutely

understand why medical automation in health care and things like driverless cars is going through such a robust process. Because, you know, like if I'm a driverless car company, I'm one of three of my cars drive off the road and plough in schools, write you down and you set the whole industry back. So that industry's got to be good at not only self-regulating by working together, which is why it's great whether you like Elon Musk or not, the fact that he's open in some areas about saying, here's my plans, here's the detailed plans of how we're going to do X, Y or Z. You have to work together in the same with health care. You cannot afford to have the health care sector undermined by a perception that I can't go and talk to this robot because I can't be confident that it's going to give me the right outcome. So, there are definitely things to learn. You're going to get pushback from finance because that is more layers of governance, which brings with it more cost and more delays in time to market. It's absolutely right to do it in health care and I'd like to see more of it in financial services. But is the cost burden of going that aggressive in terms of how much time you spend checking and overseeing and monitoring before you deploy? Is it too much to make the business viable? And then what does that say ultimately? Does that mean we should stop doing it? The which is the ultimate thing you should be. And the risk manager, if you call me, if you're not willing to accept the risk and if you can't mitigate to within an acceptable level, you should be saying we shouldn't be offering a product or service fund.

SPEAKER1 50:26 What would you say? What would your principal concerns for the future be in relation to this type of activity?

SPEAKER2 50:35 Yeah, it's just the level of knowledge and the transparency. I think we touched on those earlier. So, have I got the right people to in oversight roles to understand what is being built in the first line and to be able to articulate what those risks are? And not just today, but in two years, its technology continues to move forward at such a pace that we even if you spend lots of time and money being comfortable today, you need to be constantly looking at yourself and evolving yourself as well to keep up with the algorithms because they are going to constantly change. And when we do reach not the singularity, but when you do reach one of those real paradigms shifts like quantum computing, the next one wants to start deploying the true quantum computer. It's those changes that are going to be very interesting. So, yeah, it's all just about knowledge, knowledge and oversight.

SPEAKER1 51:31 Excellent. That concludes the interview, so I'm now going to end the recording.