

Interview with a senior manager at client offering sub-delegation to indirect clients

- SPEAKER1 00:08 OK, so it started, so could you start just by give me some background as to what your you know, what your company does, what's generally speaking, what sort of business does it do?
- SPEAKER2 00:23 Oh, the company is a general brokerage business, which is called in client money. The company is not involved in any proprietary trading. So, we are maintaining sort of arm's length from that. So, trying to make sure that there is no conflict of interest from what we're offering to clients and what we could be doing ourselves. So, the company is offering customers access to exchange traded derivatives, ASX equities, CFD fixed income and trying to look at crypto assets. So, we offer technology, we offer and clearing and settlements. So, yeah, I think so. At the moment, the company is servicing about 120, 130 clients, about 170 million worth of client funds, probably 70 percent of the business is concentrated in exchange traded derivatives.
- SPEAKER1 01:38 And those exchange traded derivatives, they're on quite a wide range of exchanges.
- SPEAKER2 01:45 Well, there is a concentration for the mortgage market, so it would seem to me you would see eyes, you would see a lot of businesses on SGX. And did you see there are some peripheral exchanges. We see the growth of business flows going to China now for the markets that are allowed to trade that. But, yeah, I think the majority of the business is a sort of standard vanilla ETDs.
- SPEAKER1 02:16 And what is your role in the...?
- SPEAKER2 02:21 UK equivalent of chief executive officer. But as a sort of person who sort of set up the business so often from the beginning, running currently and...
- SPEAKER1 02:38 What would you say are the main goals of the of the firm or what is it trying to achieve for its customers?
- SPEAKER2 02:47 Well, the customers we're trying to be the single point of entry for a lot of people, I think in my opinion, I think we are and we're not trying to get on board it sort of big banks or hedge funds or commercial entities in Europe or us sort of out of our league. But I think for the medium to small hedge funds and prop firms or some commercial entities in the region or in Asia, we would like to be single sort of venue where they can sort of satisfy their financial needs. So, I think. Well, the way how I see it, I think if they go to us, US firms would give them a very good service for US markets. If they go to Europe, the service would be good for Europe and potentially us. If you go to Asia, it would be Asian markets, but nothing else. So, but I think from our perspective, I think where the value that I think we are offering is that we are sitting here. So, we give access to pretty much all markets and regardless of where they're located and following the needs of the customers. So, I think so. Um, yeah,

SPEAKER2 04:14 there's got access given electronically or if you got any voice or some hybrid model,

SPEAKER2 04:21 I would say probably ninety five percent of all volume is electronic access. So, I think we do have the desk, but the desk is working primarily as a support function. So, something is not working or some of the markets are not really trading at the FX options. In this case, the customers would go to the desk and the desk would be helping. But otherwise, our profit model, it's an electronic trading straight through processing

SPEAKER1 04:56 and that electronic trading is that by way of sort of like API where the customer puts their own platform on or you're actually distributing platforms as well?

SPEAKER2 05:07 It's a combination of both. I would say that in terms of platforms, obviously we have more platforms that we're given. So, at the moment we are supporting hosted solutions on our site. Three independent software vendors. Yeah, I think it's probably hundreds of platforms, such a user IDs where the customers are sort of each trader has their own unique training. So, I think every trader, whether that trading API or the trading manually, they always have also the manual system as a backup. So, from that perspective, I think that we have more manual systems. But generally, I would say probably 80 percent of all the users that we have manual and about 20 percent ILGA an API. And but in terms of volume, obviously more volume coming from the API users.

SPEAKER1 06:12 And I mean, in the UK, there's this definition of algorithmic trading and effectively they make reference to three different types. So, there's the simple sort of order router algorithms and those algorithms, they're actually outside the scope of the of the current MIFID II regulations and then they have execution only algorithms. So, these are ones which effectively they're that actually sort of help with execution efficiency. So, it could be things like, you know, even a stop loss is one of those or it could be an auto spreader or something like that, that there seem to be a sort of category of execution efficiency tools. And they are regulated. They are required to have testing and all this kind of stuff. And then the third category is the is the proprietary algo, the one which you're actually building a strategy, might have some deep learning in there or something. And, you know, the thing sort of operating completely independently almost after it's been let loose and might be, you know, scouring Twitter feeds or something for news and then try and get trades on straight off....Do the platforms that you give out today contain any I mean; I imagine I would imagine having that sort of execution type algos. Is that fair to say?

SPEAKER2 07:31 Well, I think what we said, we are not a technology company. So, the solutions that we have that are based on the independence of the vendors who are already conformed to the exchanges. So, the customers normally I think the worm was a different customer and a different sort of period in our

life in the company and with the different requirements. But the current trends, I think if we really look at five years ago, people were looking at their own colocation and sort of trying to beat the latency. I think those days are pretty much almost gone. So, the fight for latency sort of has disappeared. And I think people sort of trying to realize that to think, yeah, you need to have a good latency, but you won't be able to compete with the likes of 60 X and jumps out of this world and put massive amounts of money into infrastructure to make sure that you have the most latency advanced firm. So, from this perspective, the solutions that the customers are taking, so the likes of TT or the likes of SQG or PATS or Fidessa they are not latency sensitive. And the reason they like it is the fact that they're given a decent latency and sort of decent infrastructure. So basically, people can use the network of those ISP providers with the network of various connections and various data centres, and they can then put on top of that infrastructure, they can put there on all the tools which are not regulated properly at the same centres that regulate the U.K. So, they're normally using so, from what we see is either proprietary developed solutions or there are a few off the shelf solutions which are then sort of put as an add on to existing ISP APIs that people are using.

SPEAKER1 09:55 Before you allow a customer to trade on your connections to you, do you sort of ask them about what you know, whether they've got any algorithmic deployment and try and get an understanding of how they've been calibrated? And I mean, obviously they're not going to share source code because that's not obviously proprietary, but more from a control perspective. So, they don't do anything that you might not be comfortable with.

SPEAKER2 10:26 We do, but I think what we do is, first of all, I think every single connection that needs to go in, it needs to be separate by the ISP. So, it needs to be so that you go through the conformance test. From our perspective, we are talking to those companies, and we have through the solutions and just trying to understand how that works, how the order flow works. What we don't do then is I think so if we have a customer A comes in and he's saying that I'll be using this solution because I think the customer needs to tell us which solution they're using as an API. So, we then do the testing and sort of understanding how the solution works if there is a new solution comes in. But if the customer is coming and saying, well, I would be using all the tools developed or delegate books developed by Company X, then, yeah, then we're not going through and sort of doing the rigorous test of Company X.

SPEAKER1 11:39 And presumably you use member firms to access markets in the UK and possibly other jurisdictions as well. Are you asked by them to sort of provide any sort of assurances around, you know, any sort of algorithmic activity that you might support for your intermediation,

SPEAKER2 12:07 I think through all sort of funding we've been operational for, what, four and a half years? Um. I think I was asked twice out of, and I think we have about. Ten various counterparties throughout the world, so not just UK, but US, Asia, so Singapore and Hong Kong. So, I think two companies that actually ask those questions.

SPEAKER1 12:46 Interesting. And I mean, what was your understanding of the meaning of conduct risk?

SPEAKER2 12:58 Well, conduct is that when you just exposing of yourself as the company, that employee can inflict damage to the business, whether through well, normally through some malicious and, well, either ignorance or malicious actions. Um, as I said, I think it's in terms of what? Can be done. Yeah, I think there are various ranges of things that can be collusion. It could be trying to exploit the company. It could be just revenge, as I say. It could be just pure ignorance in terms of an incompetence that can result in massive damage to the firm.

SPEAKER1 14:10 And is that conduct risk something which, you know, your firm sort of has a framework to try and mitigate. Is it something that you do in your sort of maybe any risk assessments you do in the business? Is that something that features or is it is it more implied and seen as just a wider part of, you know, operational risk or something like that?

SPEAKER2 14:34 Well, I would say it is part of an operational risk, but I think on the basis that we as a firm are not doing prop trading ourselves, sort of we have a different angle of the conduct risk. So, it's still there just wouldn't be in relation to algo trading. In our case, it could be somebody as well. We're just doing the policies and procedures for the crypto. So, somebody put a different address or put the incorrect bank details and save money in the wrong place or not reporting the activity or colluding with somebody else and not reporting market activity that should have been reported. So, we are aware of this, so I think in terms of conduct risk, I think so there is continuous development of people and that's sort of spelling out potential risk and potential repercussions for not following the letter of law or the regulation. Um, but I probably agree with you. I think a lot of things in this particular case , it's a matter of trust and sort of trying to make sure that you educate people in our site and making sure that through their education so and their understanding of what is right , what is wrong , and you expect them to do what is right as a school . It's not micromanaging this particular case, but it's something that we are where I think we work through a training work through several set procedures at the central bank in allocation of limits which are not concentrated in a particular area or try to mitigate, for example, some areas where we have potential conflict of interest. So, yes, I think we are covering those. But as I said, well, it's probably not as big a risk compared to the conduct risk that probably the prop trading firms may have.

SPEAKER1 17:14 And what would your perception be of in this algorithmic FICC markets? What would your perception be of the specific conduct risks that might be

associated with algorithmic trading. It could be caused by a customer, or it could be, you know, some sort of technical fault. What would you say you would what would spring to mind?

- SPEAKER2 17:44 Well, I think in terms of the probably the biggest risk obviously is the technical. So, I think it's not intentional where the absence of procedures or absence of testing or absence of understanding of the rules and regulations relates to all bizarre kind of damage and financially the firm and creating havoc at the market. I think that too probably would be some kind of exploitation of the firm from the perspective that I'll come and do a quick damage, get my books, a lot of traders probably would be on incentives related to the P&L, come in the quick buck and hope that whatever happens after me would be something that the friend would need to do to look at . I think the third one probably would be dependent on the markets, probably not on the exchange traded, but it would be probably collusion and just making sure that your traders are not colluding with other traders or customers or counterparts in various forms. And I think the other probably would be I think conduct risk is that it's a personal thing. Think so you are putting that person in charge? I don't know, public sort of academically probably or formally describe it. But I think if about as far as somebody and the person knows, I think he is doing that because he's just inflictions to the company just for pure revenge to the firm of the owners or of the management of the company.
- SPEAKER1 19:57 And what would your perception be of their likely levels of self-calibration in the FICC markets going forward, because obviously traditionally, you know, we've seen in places like the London Exchange and also things like fixed income trading, they traditionally always been done, you know, voice face to face, you know, in a trading ring or whatever. And as time has progressed, obviously, electronic trading has taken over more and more. And, you know, we're at a point now where, you know, electronic trading is probably more prevalent. I think it's fair to say. But do you think that in the future we're going to move a step further and we're going to have more sort of machine learning and self-calibration in this sector, as you know, possibly exists in the security sector? Or is that do you think a bit too fanciful? And actually, you know, really, this is always going to be a human driven market.
- SPEAKER2 21:06 Well, I think a couple of things, I think in terms of the regulation and where we are, so I think we can regulate everything, as I say. Well, I think it's I have some. I'd say, well, I think so in terms of settlement activities that exist in normal life, and they accepted in the normal way of life, but then sort of comes to the financial markets, we are trying to regulate these activities and I think my favourite example here is spoofing, as I say, well, it's we very often come up and say, well. How things are you meeting the person saying, well, how are things? Well, it's time to ask the question. So are we really interested in how things most cases we are not, but we're just sort of creating things. So, I think that the simple example is I think our kids are

going to universities and they're making five different applications to five different universities. So, in essence, they're spoofing for other universities, sort of putting the applications for something that they surely know that it's not going to happen. And we kind of accept this activity in life. But and we're kind of happy to live with those activities. But I think when it goes to financial markets, we're trying to be sort of like a nanny state and sort of trying to do it. So, from this perspective, I think I do believe that the market is in a position to be a grown up. So, I think it should be able to regulate itself, whether it's whether it would be or not. It's different. But in terms of learning things. I think the way how the market well, I think I don't think we would be in a position where everything would be done by the machines for a long period of time. And I think if we thought that in a long time, I think it's probably there is probably no need in the financial markets, as we know. I think the human the machine could be doing part of the job of automating part of the process. But the logic of what needs to be done and how it is done is always the human. And then if we really go into sort of sci fi, just thinking sort of on the fly, I think if we think that, I think if we probably allow machine learning and machine learning would be creating the aid to the trading, what is the risk that machines would not generate a contract in itself and sort of tried to collude with each other. .So, with a separate kind of risk that, yeah, we need to create a different machine to control this machine to make sure that they're not coming into collusion.

SPEAKER1 24:37 And, I mean, are you seeing firms reduce sort of overhead in that sort of front desks because of sort of new electronic trading or, you know, and actually that overhead is permanently reduced? Or are they actually sort of staying there to sort of keep contact with the customers or are they actually moving to kind of different jobs?

SPEAKER2 25:06 You know, I think I wouldn't say I think there was a big obviously at some time back, I think we did see, I think the big reduction because I think so if previously everything was done by the traders. So, I do remember the times when I was going to India, and you just go into the room, and you have three hundred traders to doing something. You don't really see that much these days. So, I think it's definitely scaled down, and I think you see people coming here said that the firms prefer to. So, one trader can be responsible for five or ten different strategies that the firm is making him responsible for, and he can actually sort of do a better job and more efficient job of following this. So, yes, I think people do take the technology and so they're reducing the headcount, whether those people then going back to the industry with the different firms and so trying to set up their own businesses. So, yes, I think overall, I think there is a reduction, but I wouldn't say so. As I say, probably if I look back 70 years ago, the number of firms that are unknown in this region that we're operating in the market and the number of firms that are operational now, I think. We have probably increase of tenfold, but whether the volumes have actually grown tenfold fold, I really doubt. So, I think what

happens is that there is a segmentation. So, the traders that are left aside, so they're going to try to stop their operations, somewhat successful someone or somebody could do turn a different asset class. But I think people who work in the industry, they're trying to stay. But so, yeah. So, I think there is a slight decrease, but it's not a massive decrease in terms of well, I probably like maybe 10, 15 percent, maybe a year, I think probably is leaving the industry.

SPEAKER1 27:28 Do you think that the reduction in human involvement in trading increases or mitigates or reduces conduct risk?

SPEAKER2 27:43 Um. I don't think well. It's I think the overall things probably should reduce the risk. I think so there is less avenues through which the trader or employee can take. And in terms of surveillance, in terms of controls that and the terms of the speed that the company can react is much greater if it's done through all the tools you're talking about electronic trading.

SPEAKER1 28:34 Well, I mean, algos, I mean, the fact that algo tools are actually doing some of the things that people would have done in the past. I mean, you know, I've read a lot of research, and this is sort of quite a varied, quite varied views on it in terms of whether that is something which increases or reduces risk, because obviously humans are emotional animals. And you

SPEAKER2 29:06 know, yeah, I think if you look at the way how people are doing it. So, I think the fact that most firms, they would have this situation where they would tell their traders this is the strategy of this risk parameters, you need to follow it. And it's quite easy to see that maybe. Well, I think in some cases the trader doesn't have a liberty to deviate from the selected and approved parts of the trader even can deviate from this path. There is a quick tool that the firm would be in a position to detect that he has deviated. So, from this perspective. It's much easier. There would be different ways because it's electronic trading. So, to be much quicker way. So, conflict damage compared to the voice trading. So, where you need to arrange trades and do things. But I suppose I guess with voice trading, you can make one deal on LME, which can put the company down. So just to sort of give in business with the obscure broker, which you would receive as a massive liability. And the threat has really been matched and the firm is now responsible for the deal. So, yeah, I think generally I think it's probably less risk, but yeah, that would be in terms of magnitudes of some kind of deal on obviously markets and voice deals that would be the size of potential problems could be still bigger. Yeah, I probably the right word to say the freak. If we look at the number of misconducts, I think it's electronic trading, algo trading, able to handle those misconducts and control them in a much better way in terms of the sheer absolute number of potential losses which I inflicted to the firm by misconduct, I think it's probably the jury's out in terms of which one can actually inflict a bigger damage.

SPEAKER1 31:33 How does a firm like yours try to identify or mitigate conduct risk and sort of algorithmic trading, understanding that you guys are not doing it in a proprietary sense, but how would you actually protect yourselves maybe from, you know, some stuff that your clients might be doing?

SPEAKER2 31:57 Well, I think surveillance, I think well, I think, first of all, obviously, its risk, so the risk is as everything is going through the pre trade risk controls. So, I think each user has a market risk limits that's been discussed and implemented. Not only that, but those risks are also done on each side of where have customer of a customer may have 20 different trades. So, from this perspective, yet each single access to the market is distinguished from the other and the limits are allocated both for the trader on our side as well as the firm side. And I think on our side, then we will be looking at both trade surveillance and seeing the patterns and then doing the questioning and asking why would you be doing this or why would you be doing that if something is not working? There is a lot of educational things because I think it's people would be coming in and saying, oh, we didn't know that we're not allowed to do this. And I think it's important to make them understand. One important, but I think this is in relation to the conduct risk, if they are involved in some market manipulation. I think the only thing that we can do on our side is observe what has already happened. Question, report and stop if it's something bad or something. Or put on notice and monitor and report. I think that's the only thing that we can do in terms of market risk. It's ultimately the risk of the underlying proprietary firm or taken that the decision on our side, I think we would be primarily guided by the firm from our side. We will be looking at the total risk of the firm. So, we would not be looking at individual traders. We can accommodate the trends if, as I say well, and most firms request that to them when they want to split the limits and sort of put additional controls for each individual trader. But the rest is, as I say, well, in terms of collusions, in terms of changing the algos, as I said. Well, it's not something that I think we on our side, I think can do or would like to do as I say, well, I think it probably would be wrong for us to go into there unless there is a reason. I think if there is. Well , actually , I think even if there is no reason , if the customer is doing something wrong , I think we should question and we should ask the customer to either stop or prevent or well , if the customer stop themselves and or if that doesn't happen , we should just stop and disconnect the customer from the market . I don't think going and trying to say that you should amend your OK , what we should be doing it isn't that I think is that you would put us in a very vulnerable legal position in terms of what one is giving advice and to then be in a situation where the regulator comes in and says, well, "why are you asking the customer, why have you done this ?" And the answer would be, "oh, I've been upset by this. And that that that's an acceptable practice or that's an acceptable thing to do." And I just follow the advice of regulated entities I think from that perspective, I think we should probably stay away from that and just concentrate on observant reporting and controlling the market risk. From our

perspective and as well to the analysis, preliminary analysis of all the connections that are coming in to make sure that the architecture of the organ systems is consistent with our understanding of the country.

- SPEAKER1 37:07 So, you wouldn't offer any of your clients any sort of training on the kind of things that are not acceptable on the markets that you're giving access to?
- SPEAKER2 37:21 No, we will do the training, but this is just academic training, so we will. Well, as I say well, the only thing that I don't think we should be doing is that we should be asking for the code and go in and saying, well, the strategy that you have is you need to mend it in this event or that particular element of your strategy is incorrect. So, I think what our job should be is to explain. So, if something happens, saying well, "your current strategy is generating this behaviour. This behaviour is either illegal or on the borderline or you're just creating, in essence, market manipulation, and you should understand the repercussions for this", as I say. Well, I don't think we are...I would say, well, what is it, I think we need to stop, people, if we see that, in our opinion, something is happening, what is wrong, whether to report them, whether we need to. As I said, I don't think we should be in a position just to interfere in actual trading or advise on the merits of particular strategies, which I think so we need to explain the law. We need to explain the regulation. And if that's not enough and there is no understanding, I think it would be incorrect from our perspective is to go there further. So, I think if people do not understand they're not fit to have access to the market.
- SPEAKER1 39:16 And how would you rate the ability of human trade surveillance staff to be able to spot potentially problematic sort of strategies that clients might be using, do you think that they would be able to detect that?
- SPEAKER2 39:36 Yeah, I think for most of most of the strategies, the current level of technology that exists, I think it's pretty good, as I say. Well, I think it's there still a lot of noise, I think of from in terms of that the surveillance people actually have to go through and it's quiet. Yeah, it's not an easy sort of just go through it, but I think the industry has developed quite a lot, I think so from sort of in the last five years, and I think the current tools that exist on the market, I think do make the life much, much easier. And I think most of this most of the vanilla stuff can easily be explained and sort of described. I think question is what you do thereafter. If you decide not to disconnect us for a particular reason, I think it's best not I think our concern, I think what to do from our perspective, I think our job probably would be finished at the point that we educate. If it's not sufficient, then we just disconnect and then report and let the relevant authorities determine the true nature from our perspective. I think that would amount to the suspicious activity.
- SPEAKER1 41:24 And how would you rate the ability of regulators and markets to actually identify this stuff? Do you think they really rely on firms, or do you think they could spot this kind of stuff on their own initiative?

SPEAKER2 41:40 I think it depends on the jurisdiction. Don't hear anything, so, for example, we continuously support certain activities and I think we haven't had a single inquiry. Which is strange, um, which is sort of questioning, "why would that be?" um. I think. In terms of ability of the regulators or exchanges or self-regulatory bodies to, I think certain markets, they're pretty advanced and I think they're pretty good in terms of and they're continuously sort of putting efforts in the sort of come in with interesting things, I think some of the markets send inquiries and then you look and I think, "wow, pretty good one. I didn't think of that one, but you can see where you're coming from." But yeah, but some sort of just tick in the box from a regulatory perspective, just making sure that they have those facilities, but not really doing much about it. Um, so, yeah, I'm just not sure exactly I think in terms of whether they can be regulated, whether they can do the job everywhere. I don't think they can do it in a proper way. I think it's but it's a process. I think probably with the right answer. I think it's a process which would be driven by those probably major markets. And I think it would sort of drip through to the venues and sort of the markets bit by bit.

SPEAKER1 43:48 And, I mean, specifically, how would you rate how the UK sort of approaches these things maybe versus other jurisdictions that you might be familiar with. Um.

SPEAKER2 44:09 I would say so if we say, for example, compare US and UK, I think in terms of the depth of the questions that we see from us, they are probably more interesting and from the sort of, as I say, well, academic perspective, I think in terms of the activities that they can see, um in terms of U.K., as I say, well,

SPEAKER3 44:55 I think it's

SPEAKER2 44:57 a difficult question, I think, for me to try to answer, because I have my own personal views on this and I don't want to say too much about it, but I think there is a lot of regulation in the UK. There's a lot of correct noise from the regulations about it. Um, but then when? You actually need to do something. I think there is a massive, slow movement. So, I think it's probably better maybe it's like an English legal system. It works efficiently, but because the actual process takes so much time, so by the time you finish the process, you don't really sure who is the winner, who is the loser in this process. So, yes, I think there are so many hopes and I think sort of certain activities, I think, from my sort of view on the industry. So, we've been approached by certain individuals and customers who were prospective customers who were sort of trying to get on board it to get access to European markets. And we kind of knew where they would be approaching us. And the reason they were trying to approach us because certain doors for them has been closed in Europe. And in the U.K. and it took time for those activities, so basically the exchange now that there is a problem, they may have to look at it. So, this individual is still carrying on the activity and sort of they not to us, they probably talk to somebody else. And then they probably, my understanding, ended up in one

of the firms in the UK and then six or seven month or maybe 12 months after that, you actually see that the exchange will come up with some ban, total ban on some of their activity. So the question is, why does it take twelve months for the whole process to be concluded? And why would you then allow the firm to enforce the law? Because the thing so, um, yeah, well, I think it's a lot of legalities there. And I think from this perspective, I think the legal execution in the US is probably happens much, much quicker. And I guess execution of any bad activity in the less developed sort of jurisdiction if they think that something is bad happened. So, the punishment probably would be, I wouldn't say instantaneous, but it would be very, very swift. Well, I think in the U.K., I think that could be a very long and drawn-out process.

- SPEAKER1 48:23 And so, you I mean, what do you see as the marriage then between a sort of legislative versus industry that solutions to some of the problems that could be caused by algorithmic trading? I mean, do you think it's something which requires a bottom-up approach or, you know, top-down hybrid?
- SPEAKER2 48:41 What do you reckon? Well, sorry, can you repeat the question?
- SPEAKER1 48:45 So you know the solutions to actually trying to cross industry to try and address conduct risk and algorithmic trading, do you think that's something which the industry can really deliver on its own initiative, or do you think there that do you think that the top down sort of legislative approach is the only thing that's going to ensure consistency and ensure that firms actually, you know, spend the money they need to take action and abide by software and all the rest of it?
- SPEAKER2 49:22 Well, in my view, it's I think there should be some guidance and I think there should be some legal framework. But this legal framework, it should be I think it's quite difficult to enforce the legal framework across various jurisdictions. So, you don't really want a situation where something is allowed in one jurisdiction and is absolutely accepted in a different jurisdiction, um, so it needs to be some sort of legal framework that is great by major jurisdictions just to start with. But then the rest of it, I think, in my view, it should be left to the industry, and I think maybe some extent to the exchanges and probably the exchanges, I think, with the clearing house. Well, I guess the exchanges and maybe well, to work out the framework, how to deal with it. But at the same time, that only would resolve the issue of algorithmic trading issues with exchange. Well, exchange markets, it doesn't really help with the conduct risk for algo trading where we trade in OTC. So, I think it's that's I guess from this perspective. Yeah. You still as well, ultimately, you still do need some overall legal framework, but it should be, as we were saying, that with a tax system. So, it cannot be exhaustive, it can be sort of massive. So, it should be a very basic sort of set of rules that everyone can understand and that that's sort of prevented. And then you then rely on the exchanges. You rely on big liquidity providers, big banks or big players to try to enforce it through sort of best practice guys, because

otherwise as well. I think I do believe that the market should be in a position to regulate itself. So, it's as well going into the nanny state where you do the micromanagement, or you would achieve is that you would destroy the markets and this activity would go into or the markets would rediscover themselves in a different format. So maybe some activities would go to crypto, they might go to some other jurisdictions or other different things. So, I think from this perspective, I think it needs to be reasonable and I think is well, I think the players should make market manipulation and they should make conduct risk sort of punishable; I think with a buck by the people who sort of I think really, I think removing people from accessing the pool of liquidity is probably the biggest. Sort of punishment that he could probably inflict on. I think so maybe create an association member of the association is not part of the club. Then your job is done. Your firm is done.

SPEAKER1 53:22 Do you do you think different industry participants or competitors? Do you think they're willing to commit? Obviously, we're not talking about a cartel for competition here. Do you think that we're more talking about sort of dealing with an industry wide issue? Do you think they're willing to cooperate with each other to try to find common solutions, or do you think that some would have reservations to do that just because they're trying to get a competitive advantage?

SPEAKER2 53:55 Well, I think. I think it probably depends on how it's done. So I think sort of one example that I can probably show that I was in work this week is that the FINCEN and FATF has introduced for 2013 and 2013 a travel rule for that virtual assets , which means that service providers needs to basically pass sweet like messages between each other to disclose information on who is sending the assets from one place to another . And obviously, it's a virtual asset. So, it's a block chain which doesn't have this information. So, the industry itself and the players come up with within a year, with come up with two or three different protocols and work in various working groups. And people are working together because they realize that there is an incentive. So, if they do not find a quick solution to the problem, then all of them would be out of business. So I think that potentially that's where the legal framework and sort of framework could help, is that what if it will come from something like FATF, always somebody which is that, pan, not European, but sort of world organization, I think, which is sort of has over reach to every part of sort of financial services in most developed countries is that will come up and say, "well, this is that we want you to do". I think the participants would do it. Yes, everyone will still try saying, well, "I will cut the corner here and I will try to beat my competitor here and there." But ultimately, I think everybody would be interested and find to find a quick solution for the benefit of the whole industry.

SPEAKER1 56:01 All that, are you aware of any sort of major incidents that occurred in the last few years involving algorithms in the markets and if so, what sort of lessons could the industry learn from that?

SPEAKER2 56:19 Um, I think probably I wouldn't be sort of saying that I'm sort of massively following the incidents, I think, currently. Yeah, I probably would say awesome, you have several sorts of incidents, but I don't think that countries do....

SPEAKER1 56:48 On things like the surveillance tools at all...do you do use a sort of vendor solution, or you sort of buy, build?

SPEAKER2 56:57 We use vendors.

SPEAKER1 57:00 And is that because it's you know, is that because it's more cost effective to do that? It's more scalable.

SPEAKER2 57:08 Um, the reason. It's probably there was a thinking process that the rules are pretty straightforward, and as long as you have a market data, you can do it. I think the issue is that we are not a technology company and it's not our business to support it. Yes, we can create a solution to put the monitoring tool and use it. The issues that the new rules that come in the new markets to come in and to support continuously the further sort of continuous development of the system. I think that's where the issue is. And I think investing into a separate department would be doing this just for us. It wouldn't be cost effective.

SPEAKER1 58:10 Can you see a future whereby maybe regulators almost deploy their own machines, which pre-emptively cancel potentially problematic orders before they actually do any damage or do you think...?

SPEAKER2 58:37 I hope that it won't happen because I don't believe in precrime. Um, yeah. Minority Report situations. Um, yeah. I think it's going to be prevention So, you can maybe give the tools to the end users to mitigate those risks. Um but to start behaving where you sort of thinking that, well, your behaviour potentially can. Of course, this on this basis would be...Well, it's like limitation of freedom, isn't it? So, I think so I have my money and I have the right to participate in this market in in a format. So, think so. To come up and say that. "Well, we think that your intention's unless obviously there is something that has already happened." So, it's clear. I can't really see that we would be in a position legally. I think it's just it would be quite a safe place. I think it would be sort of limiting people's freedom in such a way.

SPEAKER1 01:00:06 There's been talk in Europe of assigning legal personality, some degree of legal personality to artificial autonomous agents. And obviously as the sort of levels of machine learning in the markets become ever more sophisticated, you know, this is a potential question that's going to come up because design, as originally conceived, something, you know, currently, for example, under the Senior Management and Certification Regime, a designer and

someone who signs up on signs, often an algorithm is held sort of responsible for the algorithm's conduct, if you like. But, you know, there's potential in the future that that could be problematic because, you know, the machine becomes quite sophisticated, and if it is doing a lot of deep learning and all this kind of stuff that the senior management staff and the people like yourself or even the original conceiver of the algorithm may not be able to anticipate the problem that it causes. And so, there is a serious consideration being given in Europe to try and maybe create a third category of agency, if you like. So, you know, comparable to, say, animals to animals have a degree of agency in law today, and that's why they can be punished in many Western European countries. I mean, we had an act of Parliament in the early 90s called the Dangerous Dogs Act, which had punishments in there for the dog's owner, but also had an ultimate punishment for the dog. And that could get put down if it you know attacked a child or something like this. Do you think that that is something which could be problematic for industry professionals, is that something which would bother you if that type of thing developed or do you think it's a natural evolution?

SPEAKER2 01:02:24 Yeah, I think I spent quite a lot of thinking unvirtuous. It's I think in the last two weeks, I think it's one of the things that I can actually see that it's not simple legal question on if you create a virtual protocol for the crypto currencies, are you actually responsible if that protocol then behaves in a manner that deceives or create problems? So, it's not that different of this voice. But I think comparing to algos, I think this is sort of quite widespread. So, and I think the current thinking process in the legal community is that all people who developed this protocol are not responsible for it because that's how they did it with good intentions. And then they pass it to somebody else to use. And it's up to them to then to decide how to use it with algos. I don't really see well, yeah, you can punish the algo itself. Well, but then I don't really see how algo, well how the punishment for algo is achieves anything because punishment is when you deprive somebody of something that they value. And algo doesn't value life or existence, it's just the coat. So, from this perspective, I'm not quite sure think creating a punishment for a machine would achieve much. I think ultimately it needs to be. I think I think it needs to be a framework which probably certification, as I say. Well, I think. And once something has been certified. Um, then it's free to use, as I say, well, and then if somebody is misusing what has been approved, um, and it is to be human as well, I think human probably should regulate humans. They probably shouldn't be trying to regulate something which has nothing to do with. Yeah, I just, I don't really see that the benefit to say that the machine is responsible for something because ultimately a machine has been developed by somebody. But then if you create a machine gun or if you create a car for driving it on the road, but then if there is a guy and sort of a suicide bomber who decides to take it and then use it and ram it into the people, you cannot blame the developer for the deaths that occurred because of this machine .

SPEAKER1 01:05:30 Finally, what would your principal concerns for the future be?

SPEAKER2 01:05:39 Um. Um, in terms of conduct risk?

SPEAKER1 01:05:49 Yeah, how, you know, maybe the market develops and....

SPEAKER2 01:05:53 My biggest concern is I think and what I'm actually seeing is, as I said, well, the market is changing dramatically, as I say. Well, I think the fabric of the market is migrating. Nothing from and we'll be migrating. I think that the technologies are changing and there would be a massive shift. There is a paradigm shift already. And I think it's the way how the market where the market would be going, and we are moving from a very massively regulated environment to which is something which is completely unregulated. And I think the biggest concern I have is that I think the currently the industry and the regulators, they're so concerned about trying to micro regulate the markets, which are already massively regulated, and they're sort of missing the whole point of where this misconduct and those sorts of conduct risk could happen. So, it's a completely different area. So instead of shaping it. So, yeah, I think the biggest risk I see is that the sort of we are now entering into the sort of era of transformation. So moving from one way of financial services that we've been probably known for five hundred years, and I think it's just going into slightly different way of doing things, and I think there is not much consensus, there is not much regulation, and there is not much sort of forward thinking in terms of how we are going to be doing this. And I think everyone is doing pretty much whatever they want to do. So, yeah, I think that's probably the biggest concern. So, we're trying to catch and try to look at the risks, which are relatively insignificant compared to what existent definitely was what's coming.

SPEAKER1 01:08:08 OK, that concludes the interview, so I'm going to switch off the recording now. Thank you.