

Interview with a sales professional at an electronic market maker

- SPEAKER1 00:07 OK so just to start, so just to kick off, so your investment firm, what sort of sectors is it involved in?
- SPEAKER2 00:20 It's involved in electronic market making of FX products that you can trade in a purely electronic manner, whether that's on lit exchanges, the central in order books or directly with clients.
- SPEAKER1 00:34 And how would you describe the investment firm's goals?
- SPEAKER2 00:39 The firm's goals are to provide consistent liquidity to either exchanges or those clients and monetizing the flow that we win based on either spreads or holding risk and hedging that flow at a more advantageous rate at some point in the future.
- SPEAKER1 00:57 What sort of asset classes does your firm trade?
- SPEAKER2 01:05 A wide variety. It's pretty much everything that's somewhat standardized and liquid, which would fit with a kind of purely electronic model. So, you know, full spectrum would be equities, single stock equities most often also equity indices, ETFs, spot precious metals, non-delivery, forwards futures, maybe a very small number of listed options, small amount of U.S. treasuries and a small amount of crypto currencies...
- SPEAKER1 01:38 Commodity futures as well?
- SPEAKER2 01:39 Yes, pretty much the full spectrum of commodities, I think is fair to say, whether it's equity indices and the commodity side, etc.
- SPEAKER1 01:48 And how would you describe your role in the firm?
- SPEAKER2 01:51 So, I work in a client facing capacity on the client business, so the firm is very much split exchange business and client business. And I'm on the client side. So, the role that I have is kind of threefold. One is new client acquisition, pitching and onboarding clients, whether that's an asset manager, pension funds, sovereign wealth, retail aggregator bank, you name it. Anyone that fundamentally trades spot affects non-delivery for its precious metals and they can do that with us. And that's what aspects the second aspect would be I guess the liquidity management and kind of optimization of client sets ups from a pricing perspective and purpose of that would be to win more market share and to optimize P&L. And the third part would be of project product slash content that you would provide to clients. But there is no solid market structure or assisting in building out new products, such as like an execution algorithm or launching a new product, which may be like a new kind of tenant for one of the products, for example.
- SPEAKER1 03:01 And you mentioned building out sort of new execution algorithms. What type of algorithms does the firm deploy currently?

SPEAKER2 03:11 One type in the client space for FX, which is implementation short for the nature, i.e. the client requests you on their behalf to go and trade some notional amount in some currency with some urgency setting. And then the algorithm effectively goes and sources that from the markets, however, it sees fit with the end goal being it trades as cheaply as possible in a kind of very dynamic nature. It could be trading slow or faster based on market conditions and or the kind of underlying functionality is built in within that.

SPEAKER1 03:47 Is that deployment of machine learning, or is it [a] rules-based algorithm?

SPEAKER2 04:00 There would definitely be involved some machine learning aspects to it because it's all hinges on what we consider to be our predictive value. And by that, I mean any one point in time we have a view of Euro dollar, Aussie dollar, dollar and whatever the currency is. And that midrate is determined by the research that we do. So that's the effect to be predictive models and machine learning will be some aspect of what that image does and what ends up being. And so, I would say that evolves. It's in kind of a second order effects. But in terms of the actual algo itself, it will be looking to trade opportunistically based on what it sees best at that time. So, I wouldn't say the machine learning applies to the algo itself as a product, but the mid-range that it uses in terms of its buying and selling decisions would have machine learning as an input in terms of creating that predictive meant, if that makes sense.

SPEAKER1 04:57 Yeah, yeah. And the sort of design deployment calibration recalibration process....Are you involved in that and what does that look like?

SPEAKER2 05:09 I'm not personally that's very much handled on the quant side, but the calibration process happens weekly based on, let's call it, three months of historical data. And that's used to calibrate various things and the intensity of the algo, the amount of skew that it will show for various agency settings, and also the kind of risk transfer spreads that we would show to clients which are linked into the algo would get. So, whilst I'm not kind of intricately involved in that process, I'm kind of high level aware of kind of how it works, even if I'm not involved in the details.

SPEAKER1 05:43 And your understanding of conduct risk, I mean, what do you understand by that sort of term? And are you familiar with, does the firm have a sort of internal framework for sort of mitigating, identifying and mitigating that?

SPEAKER2 05:58 Yeah, there's quite a few elements that I guess you'd have to take care of. So, for example, you need to make sure that the algo trades in a way that abides by the rules that the market has, whether that's FX global code or other things. There are also elements of that, for example, that you need to ensure that if you've got an algorithm that interacts with your principal liquidity, you would have to make sure that the kind of market making book or system isn't aware of the size of an out of order, for example. So, we have very clear segmentation and separation of systems so that whilst we might have that,

say, two hundred million dollars cut algo would be looking to execute by in no way, shape or form should the market making system have to be aware of that order. It's only ever aware of the skew which is dictated by the urgency setting, and it's completely kind of disconnected to the size of the order, so we very much have to make sure that we have structural set ups to ensure that there's ring-fencing of how an hour ago was executed versus what the market making system can be aware of, because ultimately the ability to trade in a way which is most suitable and effective for the client. And if you don't have that separation, then that may not happen. And so, for example, I know that I wasn't personally involved in this process, but when we designed the algo prior to launching it, I know that we had to make very clear and show the framework of how the algorithm is structured and presented that to make sure that they were happy before we did actually launch the product .

SPEAKER1 07:30 In your opinion, do you think that the presence of this type of move to stop electronic trading and did the growth of algorithms and your subsector, do you think that they are increasing risk or reducing it?

SPEAKER2 07:49 In my view, I would say reducing, because each time I mean by definition, it's something that's written in code and when something is written in code, it can be audited after the fact quite easily. It's also not really subject to human bias in that way. And ultimately, someone is having to sign off the decisions of the algo or the person who's running that. So, I personally would argue that I think it reduces it because it is removing the potential for human bias or emotion. For example, let's say if you look at some of the issues that happened in the market historically...say the scandal that happened around fixing orders, that would have been those sorts of things happen for various reasons. One of them, you could argue, would be because individual traders who were judged based on that paid out and were having to find ways to monetize flow, that they otherwise were not getting through fees. And that may have resulted in them making kind of nefarious decisions. Now, that could happen from time to time with an individual. But if that was to happen with an algorithm, that would have to be coded and signed off by people internally, whether certainly that's risk or compliance. So, I think the barrier for something like that to happen is much higher and therefore it should actually reduce the kind of risk associated with how trading occurs.

SPEAKER1 09:10 And in that sort of process is quite an interesting point, because, I mean, I think I've read that in some sort of asset classes, if you like, there's an increasing sort of prevalence of sort of self-calibration or recalibration. So even, you know, even a while ago, maybe 20 years ago, it was, you know, maybe voice led, human led. And then we've moved to a sort of situation where you've got people actually writing algorithms and deploying them and there's a bit of oversight there. But then you move into a further situation where there's a sort of self-recalibration because things are moving so quickly that even some of those sorts of developers are even becoming redundant

themselves, perhaps because things have moved on. Do you see much sort of likelihood of self-calibration in your sector in the sort of near or longer term?

SPEAKER2 10:07 I think it depends I mean, it's certainly not my area of expertise because I'm not a cop, but my understanding is that for you to have something that's kind of just learning by itself in a fully enclosed manner and not being monitored, that would need to have extreme amounts of data for it to be effective. So, I think that lends itself probably more towards equity markets than I would say eFx. So, whilst there may be some elements of machine learning and you might have some kind of enclosed reinforcement learning process in that world, I think in fact, I think it's somewhat limited. And I think a lot of the algorithms that you have on the side, I still think are heavily observed and watched by humans. And they're making tweaks to things that maybe some machine learning techniques picked up. So, I wouldn't necessarily say where. I mean, it may be the point that we end up in. And it's a good point. But, you know, if you've got something that's from machine learning perspective, which we've no idea of conduct risk or how it should behave, does that go and do something which a human would never actually conduct themselves? Possibly. I personally don't think with that specifically for the FX markets. But, you know, I maybe I may be wrong.

SPEAKER1 11:20 How do you perceive understanding conduct risk as it might apply to algorithmic trading, you know, when you're in your business, is it improving. Is the understanding improving because of things like SMCR or is that do you think there's still a way to go in...? And, you know, maybe, you know, the industry is sort of playing catch up or what? What do you think?

SPEAKER2 11:46 I think in the FX market, with the amount of issues that there have been, whether it's hedging of orders or whether it's the code itself and how that's been defined or even what's happened with the fixing scandals, I think there's a huge focus on conduct generally, and I think people typically shy away from anything which is even considered slightly grey. I think that's just black and white now. And most people make sure they're on the right side of that. Very clearly. The firm I'm at have been very, very clear with that. And they've made a lot of public statements to ensure that they price and trade in a way which is like very, very, very, very clean, because that's just our stance of how things should work. So, my maybe my views are slightly skewed because of where I am, but I would actually say things are significantly better. But that's also taking into context that I've been in the market seven years at which three and a half have been a market maker instead of active platform. But that's certainly my interpretation from my exposure that I've had.

SPEAKER1 12:51 And how do people within your firm stay abreast of developments in and around may be poor behaviour, poor conduct, insofar as it relates to electronic trading and algorithms. Is there is it sort of something where it's very structured or is it something which, you know, you just become aware of

maybe from other contacts in the market? How do people become aware of it and stay on top of it?

- SPEAKER2 13:20 Well, we have obviously a dedicated compliance team whose job it is to educate the rest of the firm that we do have regular structured training on that, which will be updates on all of these rules that we would have to abide by. And whether that's online learning or in-person seminars or book seminars. So, I'd say it effectively starts from the compliance side of the business, and then they are the ones that would be educating the rest of the business, but that being said, I think the firm in general just has quite a key focus on this. In particular, things like the FX code, which are big supporters of in terms of making that more prescriptive and actually more thorough in terms of what the results are. So, yeah, I would say it's pretty structured, to be honest. I just see it as part and parcel of the job these days. You have to make sure you're very much aware of these things. So, I think the individuals above and beyond what's given to them as mandatory learning from the compliance side of the business wants that anyway, because fundamentally it makes the job as you as a salesperson far easier because these are sort of questions that clients are all going to ask whenever. For example, we would pitch a new client, they say, a buy-side client for the use of our execution algo. They would often send along a large questionnaire which would ask all sorts of questions around how you ensure separation of the principal business versus the algo and whatever else. So, if you are very knowledgeable about that area, actually, in terms of selling the product to that person, because it builds up the trust that you're very focused and very knowledgeable on that. And so, I think the individuals do that as well themselves separate the most structured from the business side.
- SPEAKER1 14:59 And are you aware of any significant conduct risk incidents, you know, either your own firm or, you know, more generally in the sector in the last few years? And, you know, what sort of lessons have been learned from that to try and prevent a recurrence or improve things going forward?
- SPEAKER2 15:20 I know that there is not real time monitoring of all of our trading and anything that could potentially be a concern is raised. And certainly, it's not a process that I am part of. So, I wouldn't be privy to a lot of it. But I'm confident that we haven't ever been caught up on anything or fined or anything. So that's obviously a good thing and I think in terms of events that happened in the market, I'm aware of quite a few, like there's obviously various different fines that are given to firms in terms of futures there. I mean, I don't want to name names, but there are plenty of firms that have been in the headlines and accused of various different things, whether it's things like buying the clothes or spoofing on markets or whatever it may be. There are also examples where people have used last look as a practice in FX. So, there's certainly various examples that I'm aware of in the market. But fortunately, that's not something we've been on the wrong side of...

SPEAKER1	16:23	Are you aware of any plans to reduce overhead as maybe things become even more advanced, in your firm or even in your wider sector?
SPEAKER2	16:38	I think it's generally our whole ethos is trying to automate things that can be automated. So, if your question around reducing overhead is referring to having fewer people look at it, I think definitely, yes. Anything that's kind of rules based, and you can have automated alerts. Our preference would always be to have that built in code rather than have a human doing that because it's more efficient and quite frankly, cheaper, and it just scales far better. But you always need an element of individuals that experience to understand what they're talking about, that can have judgment and sign off on a lot of these things. So, I don't think that's a new phenomenon. I think it's just the general ethos of how we try and operate, where if you can also make something and make it more efficient, do it.
SPEAKER1	17:19	And do you think as firms are becoming more maybe relying on machines, do you perceive there to be any ways in which, machines might start to behave differently? And if so, how would how would a firm like yours seek to mitigate that?
SPEAKER2	17:43	Yes, good question, because I think if you end up having a situation where effectively it's purely black box, unless you're monitoring it correctly, sure, it might learn something that's very successful from a personal perspective is very detrimental from a conduct perspective. And I mean, I'm not intricately involved in that. So, I'm not necessarily the best person to ask that question. But I mean, my logical thought would be you would just have to ensure that you have correct monitoring and sign off and approval processes in place, that whenever we have a new model, for example, we always back test it. So, I could imagine it wouldn't be too difficult to in that back test, look at what was the behaviour, and did it abide by all of the rules that would be on the exchange or whatever market it may be. So I think I think whilst you wouldn't have that first line of defence, the machine is effectively looking to do what it sees best from our perspective, prior to that model going live, you would need to ensure that you have correct monitoring and sign off and approval processes in place to say, is that abiding by everything it should be. So, I think it probably just leads to more focus and need for extra checks before something actually goes live, because the actual production of whatever that model may be is less human driven.
SPEAKER1	19:05	And are you aware of any sort of, you know, moves to sort of embed sort of ethical standards within code itself? Because, you know, I've read some stuff maybe from other sectors. So, you know, you made the point about, you know, a purely sort of maths driven system is going to look to the most efficient route mathematically, but maybe not from a sort of ethical perspective. And I think there was something about Google cars and they made the point that you might say Google self-driving car, the objective to get from point A to B in the quickest way possible. So, it might cut a corner,

but in doing so, it might run over a mother and kid crossing the road or something. Are you aware of anything similar discussions to that in your sort of sector?

SPEAKER2 19:57 I do know that there are some logistics providers where they're big picture scale and value add is all around use kind of something automated or code to ensure that you're compliant with the FX Global Code. But if you want me to mention kind of names, but that's something I'd heard of and been aware of, not necessarily seen in myself, but that seems to be getting towards what you were alluding to.

SPEAKER1 20:25 What in terms of actual vendors are pitching?

SPEAKER2 20:28 Yeah, third parties that would say let us do like free whatever software they have to a full review of your code and make sure that is, in fact, code compliant. I'm not sure how it works, but I've certainly heard of that as an offering.

SPEAKER1 20:43 OK, interesting. In a firm like yours, does it tend to build things in House / rely on in-house expertise or does it look sort of further afield, i.e. use vendors?

SPEAKER2 20:56 Very much inhouse build and we are typically are kind of very stringent with the devs that we hire and make sure that real high calibre. So, as a result, we definitely look to build things internally rather than buy off the shelf externally.

SPEAKER1 21:12 And is that, in your view, is there much sort of sector wide collaboration or is it very much kind of, you know, because of the nature of what you do? Is it very sort of secretive?

SPEAKER2 21:29 I mean, from a model perspective, yes, certainly very secretive. Like quants not sharing intimate details with each other for competitive reasons and also for contractual reasons because they've be breaching the contract in terms of coming together, in terms of what's right from a conduct perspective, there absolutely is collaboration. But you obviously have working groups on the FX global code, and you have representatives from various large tier one by names and they all contribute to what they think is how that document and that code should look at the end of it. Everyone has different views, but that one, I'd say, is very much collaborative. And outside of that, I would say it's more competitive than collaborative.

SPEAKER1 22:07 How do you rate the effectiveness of those sort of efforts, say, for example, on the global code in terms of achieving real change? I mean, is it actually delivering real results or is it is it still something which ultimately a regulator or legislature is going to have to come in and, you know, fill the void type of thing?

SPEAKER2 22:28 That's a really interesting question. Our frustration is that we don't think it goes far enough. And I think the issue that you have is you typically end up an

average of various different people's views and different people have stronger voices or louder voices than others. So, we personally think that those efforts don't go far enough. And often they've watered down too much to the point where they may be actually a regulator would be better at actually enforcing something that is right and proper for end clients. The issue I guess, you have is people often have two hats on, one which is the conduct and the other one, which is their commercial hat on. And sometimes a few participants can be a little bit more towards the latter, which could be disappointing because from a global perspective, what you should have been something that fundamentally is good and proper from a class perspective. But sometimes it seems that some of those measures, at least from our perspective, are watered down, really, in our view, to protect market makers in terms of how they can monetise flow.

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| SPEAKER1 | 23:39 | And I mean, what's your sense of how effective the UK's approach is to regulating behaviours as opposed to maybe the approach in the EU or in the US? |
| SPEAKER2 | 23:55 | I don't necessarily have a strong view on that, to be honest, and I guess it's probably quite more definitely more difficult in products like FX because they are not regulated, product is not a derivative and so on, so forth. So, I think and it's a fragmented market. Do the regulators have access to all the data to be able to make informed decisions? I don't necessarily know what the answer is there, so I don't really have a strong view on that. To be honest, yeah. |
| SPEAKER1 | 24:22 | How would you rate the ability of regulators and also markets to be able to identify, you know, conduct which could be poor, which has been sort of driven by electronic algorithmic trading? |
| SPEAKER2 | 24:39 | I think has come a long way, if I can give you an example, would be ECN, anonymous ECN platforms. They might have had thought ratios like the ratio of attempted trades to build trades in the kind of 65, 70 percent mark, let's call it, five years ago. That's significantly higher now. So, I think general behaviour and practices are much better than what they used to be. But how effective has it been? OK, I'll say maybe B minus. If I was to give it a grade, it could certainly improve. |
| SPEAKER1 | 25:13 | And what about within the firm in your own sort of second line control's ability? How would you say the ability of those people is to try and identify conduct? Because they're closer to the front line than the regulator is, obviously, but they've not sat on the front desk I'm guessing and done the same sort of thing that your colleagues are doing on the front line. |
| SPEAKER2 | 25:40 | I mean, I would say internally it's very good. But I mean, firstly, spot is effectively self-regulated. So, the onus and responsibility are on us to ensure our conduct is correct. And I do believe it's very much that way. But if I go back to my earlier point, that's kind of a stance that we've taken where we've |

gone above and beyond what you would have to do in terms of like the global code, for example, we go much further than that. So, I don't think we're necessarily even close to what the line would be in terms of it being adequate. It's very much more than adequate. So, I think internally we do a good job because this that's the stance that we've taken high level, and that comes from the kind of the senior managers down. And equally, we've got good technology to enforce that and monitor....

SPEAKER1 26:23 What sort of technology you're actually deploying?

SPEAKER2 26:27 I mean, all sorts of reporting, for example.... I mean, yes, it's all the incentive systems that we feel they just pick things up very quickly and we can do that because we have good developers. Whereas if you're in that, say, a maybe larger institution, you might find that tougher to implement because resources are scarcer and as a result, things might fall through the cracks.

SPEAKER1 26:51 So, are you using sort of in-house built surveillance system, for example, or are you buying that off the shelf?

SPEAKER2 27:01 I'm not actually sure I think it is inhouse build, but I'm not sure because I didn't have access to the system. We just kind of get any outputs of that brought to our attention, but I'm not 100% sure on that if I'm honest.

SPEAKER1 27:14 What is your view on this whole thing about agency and algorithmic trading maybe in your sector? Because, I mean, if I can again use another analogy, I mean, about 30 years ago, the big moral panic about dangerous dogs in the UK and there was an act of parliament was passed, which almost had the effect of construing agency on dogs. So, yeah, there was the human factor, and they could be fined, punished, sent to prison for the dogs, poor behaviour. But at the same time, you know, there was a consequence for the dog because the dog could be put down because, you know, it may be that the human act to try to rear the dog in such a way for it to behave a certain way. But then it behaved in a way that wasn't reasonably foreseeable and ended up doing somebody else injury. You could draw the parallels to how the algorithm behaves. And do you see any sort of move towards maybe construing agency up on the algorithm and maybe punishing the algorithm itself in some way because it's gone beyond what the designer really intended it to do?

SPEAKER2 28:30 I mean, for that perspective, that would suggest that the idea was kind of self-learning and would change his behaviour. I mean, fundamentally, I don't see how you can punish an algo because I mean, it's by definition now based on human. I feel like I actually quite like the idea of someone having to sign off, some senior manager having to sign off on algorithms, because then it creates a point of responsibility on a human who fundamentally is the one that has to sign this off. So personally, no, I don't know socially that I think it should fall on a human and therefore it falls on the human to have the

correct controls and monitoring to ensure that that algorithm is behaving in the way that it should.

- SPEAKER1 29:07 OK, I mean, again, you know, the tech industry, there's lots of different tech industries now and, you know, operating quite highly regulated sectors. Is there much cross pollination in terms of ideas? And if so, is there anything you think that the financial sector maybe could learn from another sort of highly regulated sectors, the health sector, the aviation sector or other sectors using so very highly sophisticated technology?
- SPEAKER2 29:42 It's hard to say because I don't think I'm particularly knowledgeable about those industries. But what I would say is I think the finance industry is very heavily regulated now. I mean, I appreciate FX spot is not regulated product, but there are an awful lot of checks and monitoring that goes in place. So maybe there is but would be very hard for me to say categorically, given that I'm not knowledgeable about those other sectors that you mentioned. On the flip side, if you look at tech, for example, I think they're significantly behind where we are. If you look at, say, like the advertising industry or search engines or social media networks, I think they are wildly behind where finances, for example, in terms of conduct and ensuring the behaviour of algorithms or whatever it may be, I think that's actually going to be one of the next kind of scandals that happens in the next five to 10 years. It's going to be a focus on social media platforms and how they operate.
- SPEAKER1 30:37 Do you think it's a problem that FX, I mean, rolling spot, if it is regulated, but do you think it's a problem that sort of non-rolling spot FX isn't regulated? You think that's an issue?
- SPEAKER2 30:52 Is hard to answer that really, because you can come from lots of different angles, but
- SPEAKER2 31:00 It creates a loophole that could be exploited.
- SPEAKER2 31:07 You can look at it from lots of different ways, because if you have kind of very prescriptive regulation, one could argue that that just creates a very clear line in the sand of like if you go up to ninety-nine-point nine percent of that line, then you are OK. So, if you didn't have a very prescriptive, prescriptive regulation, someone might go to 60 percent of that because they've taken internal view that's how they should behave, in which case actually the former creates a worse outcome than the latter. So, I don't necessarily know if there's like a very clear answer to that. Yeah, I don't have a strong view on that either way, but I think it comes down to the conduct of individuals, if they and individuals in this case, I mean, as firms if they behave in a way which is correct, then I don't think it's an issue. I guess the problem is typically whenever you have scandals, it's typically a few bad apples that creates issues for the whole cart. So, I don't think it's a fundamental issue, but I guess it's a case of, whilst you have it, don't abuse it. And therefore, the

onus is on those companies or individuals not to abuse it while that kind of privilege is given.

SPEAKER1 32:17 And finally, what would be your principal concerns for the future?

SPEAKER2 32:23 Principal concerns for the future. The point you kind of touched upon around pure black box trading, that's something that I think has potential to be challenging and also the interaction of all those models within each other, because one of them could have a model which is purely black box that they run, how they interact with other algorithms externally that could in theory , theoretically create some problems. I think if something is purely algorithmic and you can get into this kind of dangerous, self-fulfilling loop, potentially, I mean, maybe you've seen it with some of the kind of huge historical equity market sell offs that we have that seem to have like a like a Knight Capital sort of moment that can have a cascading effect on other algos that react to that. A human may have the discretion to go, OK, fine, this is actually wrong, and we should step back, but a model might just keep on going. So, I guess the answer to that could be I mean, that's the sort of thing that probably would concern me, just effectively models running wild. But that then goes back to my point earlier around having correct oversight, incorrect sign-off of models before they go live. And then maybe you could argue corrective measures in terms of humans monitoring those in real time or exchanges having measures such as kill switches or whatever it may be to stop a cascading market just to going through to zero. That's probably the biggest thing. I think if you have a market that goes so heavily algorithmic that you could have triggers that cause issues, that's probably the biggest kind of concern.

SPEAKER1 34:09 OK, that's excellent. Thanks very much for your time.