MODULE 3 UNIT 2
Notes Video 2 Transcript

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NIR VULKAN: I'm delighted to introduce Terri – Terri Duhon, who is a lecturer here at the Saïd Business School in Oxford and a member of the board at Morgan Stanley International, where she chairs the risk committee. From her perspective as financial market expert, she wrote a book, "How the Trading Floor Really Works". Terri has a lot of experience on the trading floor, including being part of J.P. Morgan as a derivative trader in Wall Street and then in London. She then founded B&B Structured Finance Limited, which provided expert consulting and training.

TERRI DUHON: So my name is Terri Duhon. I have a math degree from MIT and I traded derivatives for 10 years on Wall Street and in London, primarily for J.P. Morgan, in fixed income, credit derivatives, and interest rate derivatives. I then started – I became an entrepreneur and started a few companies and now I sit on a few boards, and I chair a risk committee, and I chair an asset management business, and I lecture at Oxford.

What are the gaps and types of learning that need to take place in professional partnerships between individuals from quantitative backgrounds and those from commercial contexts?

TERRI DUHON: I think the biggest issue is communication, and what we find generally between the very commercial trading people and the very quantitative development groups, is that they don't use the same terminology and they don't use the same lingo, and actually, their ability to really communicate and understand each other is very limited as a result.

So there needs to be some understanding of that gap, but there's also – you need to absolutely understand the fundamental different skill sets that come to the table.

What risks would you define as board-level considerations?

TERRI DUHON: Well, at the board, of course, we always talk about market risk and credit risk. I mean, when you're in the financial markets, you can talk about almost nothing but market and credit risk. The truth is though that those are actually, they're the easiest to think about to some extent, because they've got a long history of quantifying those risks and thinking about what they are.

Really, when you think about electronic trading and what other bigger picture risks it brings to the firm, we really think about reputational risk, regulatory risk, capital, and liquidity. And to give an example, if we have a rogue algo – an algo that just suddenly does something it's not supposed to, it could cause major market disruption. And so there we could end up with major reputational risk, as well as significant regulatory exposure.

What if we have a client that uses our electronic trading platforms and performs some market manipulation? We're responsible for monitoring and surveying that and so we can't allow that to happen. There's another, for example, the fat-finger risk, and that's where the human interaction with the algo – so ultimately, there are algos that do their own thing and they just kind of spit out some information every now and then, that you may or may not use. There are algos that do their own thing and they absolutely make all the buys and sells. And then there are some that require some human interaction. And the fat finger is,

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when, for example if you're talking about FX, and you think about probably the most extreme cases – Japanese yen, 1 dollar to about 100 yen. If you get that the wrong way around, right, the size of your trade is a hundred times what you expect it to be, and when that happens, and it gets executed because you didn't notice and there weren't controls around it, then you could have a major exposure. Either your client has had a major loss and they've made a mistake, or you've had a major loss and that could impact your capital and/or your liquidity. Again, both of those then turn into reputational or regulatory exposures.

What risk controls would you have in place for systematic trading models, but not for discretionary trading conducted by humans?

TERRI DUHON: From a banking perspective, we think about a three line of defence model. And so you have your first line, which is your front line. These are the guys engaged directly in the marketplace. They're developing the models, they're thinking about the models, they're thinking about first-line risk controls – so market and credit risk – trading within their limits. They're thinking about the backtesting. They're thinking about the scenario analysis, its quality analysis, quality control. That's your first line.

Your second line of defence is your risk department and your compliance department. And so your risk is providing oversight across all of those risk controls, and then your compliance department is surveillance to some extent and they're looking for things like market abuse, or material non-public information, right? So insider trading.

And then you have your third line of defence, which is your audit department, and they're, of course, looking across the whole system to see where the gaps are.

And so, we employ that three line of defence model. Now, when you then look at an individual algo and take it through those three lines, the fact is that everyone is different; every algo has a different purpose, is used by different people, and operates in different marketplaces. And as a result, they all have a different set of very specific risks that they need to be considering. Of course, they sit within the broader framework, but ultimately, they're all each very, very unique and have to be considered very unique and very specific.

Do any of the risk controls you have mentioned warrant special consideration?

TERRI DUHON: So I think, ultimately, liquidity and volatility are probably the big considerations that you make across every product, every algo, every marketplace, you think about liquidity and volatility. So those are your two catch words, and they help you define what your risks are within each different product and asset class and within that algo and depending on what its purpose is.

In more extreme scenarios, of course, you can start thinking about correlation, because you're looking at how your product, your asset classes, then correlated with other products in the marketplace, and that helps you think about your systematic or your systemic risk exposures.

And then of course one of the changes that's going on in the marketplace, is the number of algos, the number of non-human behaviours that are coming into the marketplace and how that's actually changing the behaviour of the market itself. So when you're thinking about market behaviour, you have to take that into account, but it's a little bit of a chicken

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and egg, and a catch-22 in a way, because you're you sitting there thinking, "Well, what biases could the programmer have put into the system and what human biases did the programmer miss in the system?" And you have to consider both and then think about the bigger picture, and that's probably more of a theoretical and existential exploration, but it is very important to consider because over time that will certainly, you will certainly be able to see some behavioural changes.

I would say probably the final one to mention is cyber risk. The fact of the matter is that these algos that have access to the market and have the ability to put big positions into the marketplace, are also targets for cybercriminals. And the truth is that cybercriminals are actually – they're not necessarily anarchists looking to take down the global economy. In fact, they want to benefit from the global economy. They're mostly looking to make money. So, one of the scenarios we think about is, what if someone could take over one of our algos, short the market, cause a crash, and then buy? Because their goal, of course, is to make the money. And then we would be left with the reputational, and the regulatory, and maybe the capital and liquidity risk against it as well. So cyber can't be ignored when you start talking about any electronic trading platform.

NIR VULKAN: Did you understand all the concepts in this video? If you would like to review any of the questions, click on the corresponding button.