



MODULE 3 UNIT 2

Notes Video 1 Transcript

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NIR VULKAN: I'm delighted to introduce Susi Gorbey. Susi works in the Tudor Investment Corporation, like Daryl we've seen earlier. Susi is the director of quantitative strategies and oversight. She'll be talking to us about the challenges in terms of oversight and regulation for algorithmic trading.

SUSI GORBEY: So, my name is Susi Gorbey, and I'm the director of quantitative strategies oversight.

Can you describe your role and why it is required?

SUSI GORBEY: So my role is an important management and control role, and when I say control, that's about having the checks and the balances that we need to make sure that everything's on track.

In my role, there's two primary areas of responsibility. There's the fiduciary responsibilities. We have investors that we have a duty to act in their best interests. So this means having robust risk management and operational processes. But for algorithmic trading, we also need to ensure that the algorithms are behaving as we expect them to behave. And so this comes down to watching the risks that they're generating, the markets they are participating in, and how they are participating, and the returns that they are generating, to ensure that they match what we're expecting them to be.

The other responsibility that we have is our regulatory responsibilities. We participate in markets that are regulated, and everybody that participates in these markets needs to meet these requirements, regardless of whether they're managing their own money or whether they're managing money on behalf of investors.

These regulations are there to protect investors and they're also there to ensure the orderly functioning of these financial markets. We are required to avoid behaviour that's disruptive or abusive in the market, and for algo trading, this comes down to having appropriately designed algorithms, testing, extensive testing, and also having the type of controls to avoid disruptive trading.

What are the types of controls that an algorithmic trading firm needs to have?

SUSI GORBEY: So the type of controls that an algorithmic trading firm need to have will depend on the nature of their algorithmic trading. So, for an investment decision-making algorithm – this is the decision-making algorithm to buy or to sell, and in which market; the decision is then passed over to humans to carry out that trade instruction – the control requirements are far less.

But for algorithms that are fully automated with no human break points in them, then the control requirements are a lot more. So these are algorithms that route their orders directly into the market with no human oversight. They can be a complex set of investment decision algorithms and execution algorithms that may take an order and divide it up into smaller orders to get a more optimal execution outcome.

The types of controls for these sort of strategies need to be built in as appropriate at different stages of the process. So inside the algorithms themselves, but also on the electronic trading platforms on which they operate, and that includes the broker side, they'll be – they'll have their own suite of controls as our orders come through into their systems and then out into the market.

The types of controls are broad, but it starts with testing. So there's an extensive testing program pre deployment of a new algorithm, and this testing occurs on a development IT environment that's separated from the IT environment that real trading occurs, and it's also testing for changes in the environments and changes in the algorithms, not just new ones.

Then, very importantly, we have pre-trade controls for automated strategies. So these are controls that block orders if they were to exceed certain limits. So an example is a maximum order size or a maximum number of orders that can be sent out within a certain time period after which nothing else will get sent and everything else will be blocked.

But also the price that, you know, when you're using a limit order, you should ensure that that limit price is not too far away from where the market is currently trading. And for automated trading strategies, it's very important that there is real-time monitoring by humans. So this is looking – people looking for signs of disorderly or unintended behaviour of the algorithms. And for Tudor, this means we have a team that covers the global time zone, so 24 hours a day.

And the last control I'm going to mention is the kill switch. So, given the suite of controls we have we should never need it. So this is where we can automatically cut the algorithm off from the market if something goes wrong. So we don't expect to need it, but we have it in place and we are required to have it in place.

How have changes in technology and availability of alternative data sources altered the need for oversight?

SUSI GORBEY: Advances in technology have meant that the algorithms have sped up, and firms have invested in the infrastructure to make this happen. This is where controls are very important in – especially as algorithms become more automated. So having all of those checks and balances at the various points in the process of a trade being generated and sent out.

And also the complexity of the systems. We need to make sure that we have the monitoring and the testing in place for more complex strategies. For the more conventional models, the researchers in charge of the model design and the structure of the model, for things like machine learning and artificial intelligence, the machine takes charge. And so we need to make sure we understand the nature of the signals that the models are generating, and also the evolution of those models as the process walks forward.

One of the advantages that we have with algorithmic trading is we're able to produce backtests. This is simulating the nature of the algorithm. So we're combining the historical data inputs with the algorithm and walking forward as if we're in real time, day by day, generating a simulated return and a simulated set of positions, and we can use that to assess the risks, to assess the profiles that we're getting generating the returns. And we can use that information once the system has gone live to understand how it is operating, and assess its behaviour.

I'll finish off with alternative data. So there's been a massive growth in the types of data sets that have become available, the big data sets, and examples being satellite data, social media data, credit card data – there's a huge range.

So, the challenges there from an oversight perspective are starting out by verifying that the source of the data have the rights to the data. There's been cases recently that have drawn attention to this. You need to be doing the due diligence that those people who are supplying the data have the rights to it, that the privacy of the individuals behind the data, their rights have been observed. And this is before you start to tackle the challenges of cleaning the data and distilling it down into something that you can use in your algorithmic trading.

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.