



Best Execution Compliance Workstation

Helping Brokers Comply with MiFID

Participating brokers said:

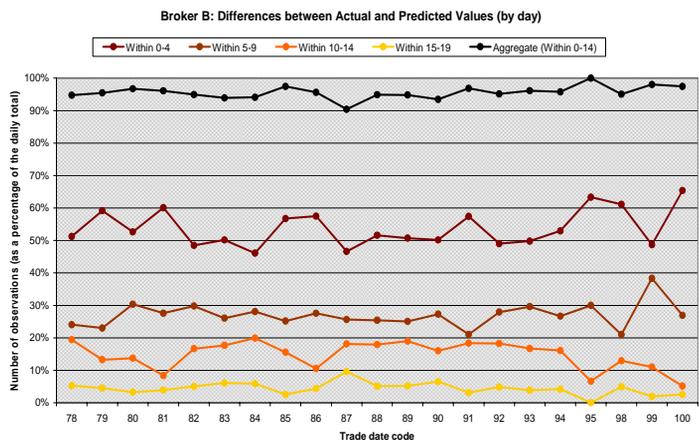
"This system would be a great way of seeing a small number of 'odd looking' trades that we could check - the fact that the same principles could be applied to fixed income and other instruments makes it particularly interesting"

"I was fascinated to see the selection of trades that this system identified - there were good reasons why all of them traded at the prices shown but they were just the sort of trades that we should have been looking at".

The European Union's Markets in Financial Instruments Directive (MiFID) Article 21 places an obligation on brokers from 1 November 2007 to "execute orders on terms most favourable to the client" - 'best execution'. Most brokers rely on traditional management oversight of the trading process or sampling, neither of which can cope with today's volumes. What's missing is the ability to show that a specific trade was executed at a reasonable price. The only effective method of monitoring hundreds of thousands of trades per week is to have an automated process identifying a sensible set of anomalous trades for examination. Basically, firms need a 'sifting engine' that identifies potentially anomalous trades - 'best execution compliance automation'.

Z/Yen, in co-operation with Sun Microsystems, the London Stock Exchange and four leading brokers, has just completed a large, formal research study to trial PropheZy - a commercial application of a support vector machine. Using three months of data comprising over 190,000 trades with a value of over £54bn in order to predict a fourth month, the objective was to see if PropheZy could predict the likely price range of a trade (specifically one of twenty price movement bands, based on a logarithmic scale).

The project proved that PropheZy successfully predicted price movement bands. Setting the level of acceptable accuracy at "within 0 to 4 bands" out of 20, PropheZy was able to predict over 50% of the trades price bands acceptably.



Using these predictions, it was possible to set a level for best execution anomalies using price band prediction differences. Excluding trades inside the bid/offer spread from the PropheZy selection, the number of anomalies is reduced to approximately 1%.

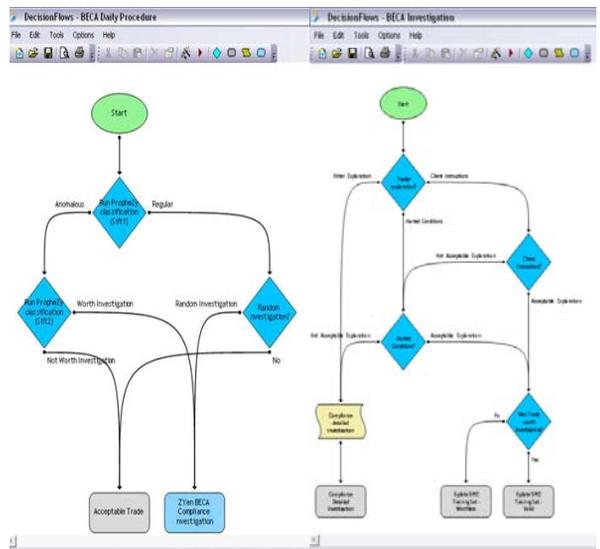
During the course of this research project the team built a prototype 'Best Execution Compliance Workstation' combining a number of tools (PropheZy, VizZy, FractalIntelligence and Decisionality) that helps a compliance officer process, visualise and manage best execution outliers:

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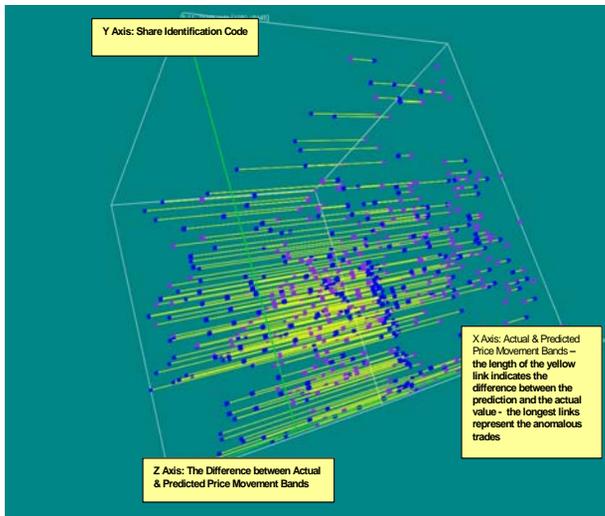


Process: The compliance workstation has a workflow management tool that helps the compliance officer. The first stage of the process is filtering for anomalous trades. These trades are referred to the trader for explanation – do client instructions, market conditions, the size of the trade or any other factors explain the execution price? This system tracks investigations and provides a compliance ‘audit trail’.



“This system showed anomalous trades and if we had been using it, we would certainly have investigated any of these trades that were outside the bid/offer spread”

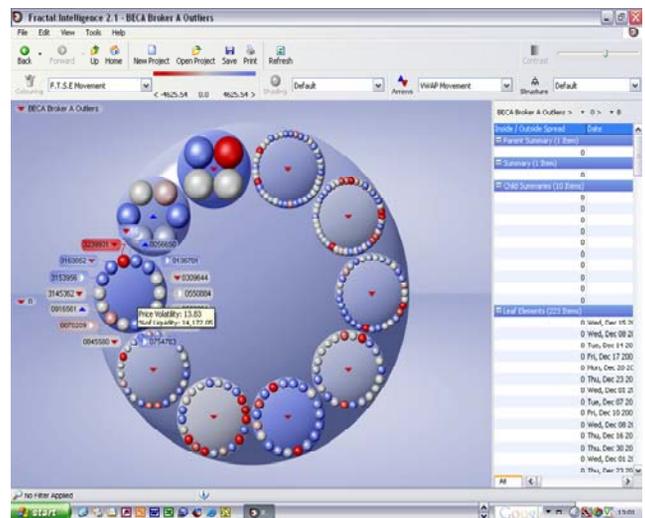
“An extremely interesting and innovative approach – the trades that were highlighted would certainly have been investigated. Whilst there was no real pattern or similarity in the outliers they were all things that should have been looked at”



Visualise: The compliance officer sees the predicted price movements plotted against the actual price movements. The length of the yellow link shows the difference between the actual and predicted values. The longer the link the more anomalous the trade.

“The prototype workstation, with all the information about each trade and the drill down functionality is just the sort of tool we would use”.

Manage: The compliance workstation provides a ‘drill down’ tool for a compliance officer to home in on specific trades by drilling down through a variety of hierarchies. Shown here is a set of trades that fell outside the bid/offer spread and is arranged in 10 circles, showing trades with increasing differences between actual and predicted price movement.



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