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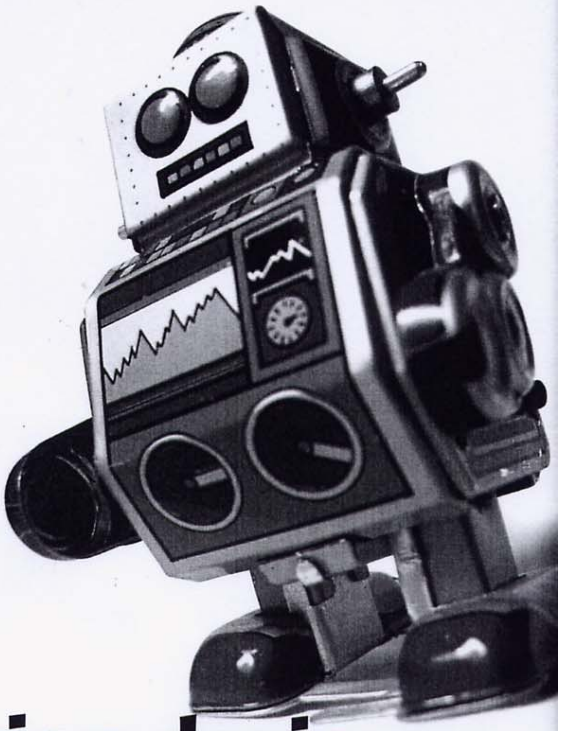
ALGORITHMIC TRADING



Labour saving devices

The buzz around algorithmic trading is growing and spreading from the US to Europe. Beyond taking some of the grunt work out of trading, what other opportunities does algorithmic trading create, and what technology requirements does it generate?

By Paul Allen

Like the latest generation of Maserati cars, algorithmic trading may not be anything new, but it has become one of the hottest items on the Street at present. "Brokerage firms have been doing algorithmic trading for many years," says Eric Goldberg, CEO of Portware. "What's new is that the brokers are providing it to their clients."

Certainly algorithmic trading capabilities in particular, and automated trading strategies in their various guises in general, are exciting considerable interest. In its recent research report, *Algorithmic Trading: Unlocking the Secrets of Black Box Trading*, TowerGroup predicts continued growth in total algorithmic trading, with volume doubling through 2006 and algorithmic trading initiated by the buy side tripling during the same period.

"What is interesting about these trades is they eliminate the need to have a human trader on the institutional broker's desktop, so it makes the infrastructure, on a variable cost basis, cheaper for the brokers," says Gavin Little-Gill, senior analyst in TowerGroup's investment management practice and author of the research. "That has a couple of results: it drives down commission prices on these particular products and they become commoditised, so it is driving adoption by the buy side."

As with so many innovations in the industry, algorithmic trading has seen most development to date in the US, where it has been popular in the US equities market space. But interest is increasingly picking up in Europe.

As Little-Gill explains: "The key ingredients that have fed algorithmic trading in the US have been the fragmentation of liquidity, access to electronic channels and the pricing pressures associated with commissions. Those ingredients are not as strong in the European space. That said, many

of the large US algorithmic trading firms – such as Credit Suisse First Boston, Goldman Sachs, Morgan Stanley, Merrill Lynch – also have very strong presences across Europe. And even when you look within the US market, buy side firms will need to trade non-US equities through algorithmic means. As those get built up, you will see them starting to transcend into the UK and European space as well."

Another key factor weighing on the decision to use an algorithm is the tremendous amount of emphasis, on both sides of the Atlantic, on best execution, says Little-Gill. Such an approach is particularly attractive for "nuisance trades", which Little-Gill defines in his research report as those a firm believes it cannot add value to, such as small trades, highly liquid stocks and illiquid stocks that make up a small percentage of a portfolio.

And as in the US, and indeed all global markets, increasing competition and the concomitant compression of margins have been forcing market participants to search for new ways of trading. "Essentially algorithmic trading adds to greater trading efficiency and corresponding cost reductions," notes Belinda Keheyan, head of corporate communications with ITG Europe, an agency broker. "As cost margins are squeezed there is increased focus on efficient and cost effective trading."

What is more, given that algorithmic trading is closely linked with the move towards electronic marketplaces, Europe is well positioned for any upsurge in usage. "In Europe we have a less fragmented market and more electronic exchanges, so there is an opportunity to implement algorithms that can be reasonably straightforward in pushing a client's objectives," says Richard Jones, managing director with LatentZero, a buy side front office technology vendor. "It is possible that these algorithms could be used more extensively and more effectively in Europe quicker, because it is a less complex environment and, to a certain extent, more automated."

Given the buzz that has been generating around algorithmic trading, it is not surprising we are in the midst of a rush of market players seeking to get in on the act. Central to the whole process are the broker/dealers.

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"When you talk about pure algorithmic trading, you are talking about trading to a specific benchmark, whether it is the arrival price, the market closing price of a given security, volume-weighted average price (VWAP) or whatever," says Little-Gill. "To do that you need a tremendous amount of data and information on correlations of how these securities move relative to these underlying markets. That is why you see true algorithmic trading being offered by the broker/dealers, because they are the only ones that have the resources necessary to bring the set of tools to the market space."

Credit Suisse First Boston was quickest out of the blocks when it launched its Advanced Execution Services (AES) system, but many of its tier one rivals are now gaining ground, with Morgan Stanley and Goldman Sachs leading the chase. While some sell side firms offer access to their algorithms through proprietary trading portals, as with Morgan Stanley's Passport and Goldman Sachs's REDIPlus platforms, the primary access point through which the brokers have sought to push their capabilities to their buy side clients has been through partnerships with the order management system (OMS) vendors and Bloomberg.

And it is primarily the brokers pushing the algorithms, rather than the other way round, says Dave Csiki, managing director with INDATA, an investment management software provider.

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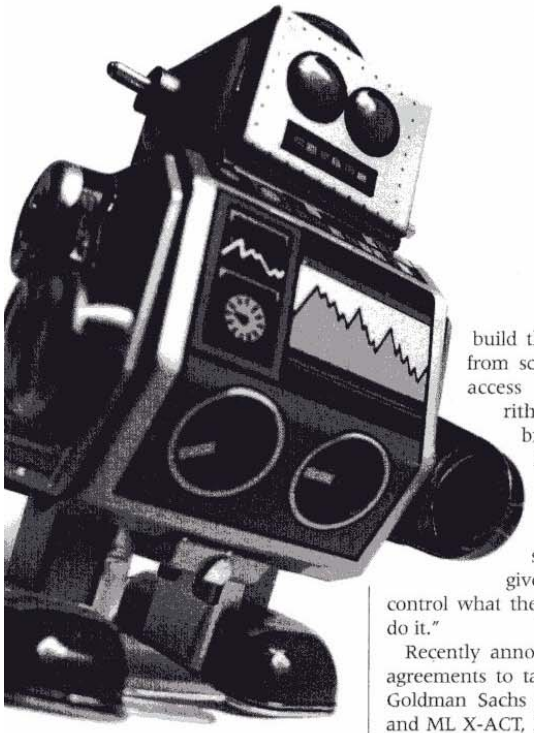
ITG offers both customisable quantitative trading strategies, as well as out-of-the-box algorithmic trading through its SmartServers products. Horizon SmartServer works orders over a chosen period to match the required distribution and obtain optimal prices, with users able to access a variety of liquidity pools, including ITG's POSIT crossing system.

The main technology challenge of algorithmic trading is connectivity, according to ITG Europe's Keheyan: "It is important that an algorithmic trading solution fits in with a variety of other systems. For example, ITG's SmartServers can 'speak' to other programmes such as the POSIT crossing network, as well as fit into clients' own technology systems." SmartServers can be accessed from any trade order management system and customised connections that support FIX.

For Mark Munoz, senior vice president for corporate development with Nexa Technologies, a brokerage trading solutions provider, the biggest challenge is to handle the amount of market data coming from various exchanges. "We think the market data that is available now is going to double over the next year or two, particularly for options. So you need an architecture that is designed to handle that amount of data. The second challenge is connecting to the various exchanges, and understanding not only the trading rules, but the culture around those exchanges."

As part of its product suite, Nexa provides cross-border, direct market trade execution solutions and trade management tools to hedge funds and statistical/arbitrage shops, as well as institutional



brokerages. "The strategy is to be a one-stop shop, where we remove latency in the market data and order routing at every point," says Munoz. "The client can see the market data, there is a high-capacity exchange execution gateway, a front-end trading application and all-locations hosting infrastructure. It allows the clients to focus on the trading models, not on technology."

With algorithmic trading such a hot topic at the moment, not surprisingly many technology vendors have come in to populate the space. And with competition so intense, all the providers are seeking to push differentiating strategies in an effort to gain market share.

For example, Portware's system, Portware Professional, is a trade management platform that supports equities, futures, options and foreign exchange. The firm has adopted a mixed approach to the services it provides, says Goldberg. "The Portware box offers a framework for users to build whatever they want. It comes with some built-in algorithmic strategies that users can modify, they can build their own algorithms from scratch, and they can access proprietary algorithms from broker/dealers. The system allows users to change the parameters of the algorithms as they are still working, so it gives them the power to control what they do and how they do it."

Recently announced deals include agreements to tap into CSFB's AES, Goldman Sachs Algorithmic Trading and ML X-ACT, Merrill Lynch's algorithmic and computer based equity trading service. Access to the algorithms is via a FIX connection, and the system can route to any FIX compliant execution destination, says Goldberg. "It benefits clients by giving them the ability to access algorithms rather than having to go through a sell side trader, thereby giving control to the buy side trader."

Meanwhile, Apama's platform focuses on real-time trading strategy management, enabling traders to monitor and act on market events. The core application in its product suite is Apama Event Manager. According to the recent press release announcing its patent approval, the system searches data streams from multiple feeds for user-defined events upon which the trader can then act.

"Apama's technology was developed to deal with mission critical decisions that a front office user needs to make in live streaming information," says Peter Beard, CEO with the firm. Its strategy has been to target tier one market makers, which then offer the software to their buy side clients, says Beard. Clients include JPMorgan, which is using Apama in its global futures and options trading operations, while ABN AMRO is using some of the vendor's components to support its programme trading. However, Beard says the firm is also experiencing interest direct from some buy side firms.

A key differentiator of the platform is that it is not a black box, static solution, but is more like a white box, where you can go inside the system, says John Bates, chief technology officer with Apama: "As the market evolves, and new opportunities present themselves, so you can evolve your trading strategies accordingly."

Adds Beard: "We have developed a Microsoft Windows, drag-and-drop intuitive front desk, which enables users to create new strategies on the fly, and then inject them into the trading screens, and do that in a matter of minutes."

Indeed, flexibility is a recurring theme among the vendor solutions. For London based software firm QuantNet, which specialises in programme trading capabilities, the key differentiator is that it has opted for a framework based approach with its ArbiTaur trading system, rather than a hard-coded front end, says product director Anton Varnas. "We are not restricting people on the actual capabilities of the programme trades. For example, on the execution licence side, we don't restrict people as to the number of broker connections they can make simultaneously and we don't restrict them to the number of passive or active orders they can route back to the market, because they can write their own algorithms for execution to minimise their own slippage. In effect, we provide a general trading framework, with data management, archiving, monitoring of positions, portfolios, *et cetera*. So it is a combina-

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tion of analytical tools with the trading capabilities. We are not tied to any particular data provider. We have written an interface to accommodate internal data feeds. We are not tied to any execution venues or brokers, and we are not tied down to protocols for messaging."

QuantNet has then partnered up with Century 24 Solutions to use its integration grid technology. "From a connectivity standpoint, C24 is involved in two respects – the connectivity from source data, and the connectivity to the prime brokers or execution points themselves," says Wayne Meikle, managing director of C24. "It is therefore a vertical stripe from the desk to the exchange and back, by providing the electronic trading black box with the integration technology that both feeds it the market data and gives it access to these exchanges."

For the OMS vendors, it is all about providing open access to the brokers' algorithms. "Within Minerva, our buy side order management and trading system, we make the brokers' algorithms available to our clients on an as-required basis," notes LatentZero's Jones. "Algorithms are changing very quickly, new algorithms are being provided, new brokers are joining the fray, algorithms are being white-labelled from the bigger brokers through smaller brokers. The algorithms we have tied up with are soft-coded, so our grid box capability provides them to the customers when they order, so they are not required to upgrade their software to obtain new and multiple changes."

INDATA has adopted a similar strategy. According to Csiki, the US based vendor has an open and flexible system that integrates new algorithms from different brokers as they come out. "Based on the specific algorithmic trading strategies our clients are looking for, and which brokers are offering that, we have started to integrate those algorithmic programmes into our trade order management system," he says. "We have done that primarily through FIX, through drop copy interfaces. As an example, you would mark a FIX order as some kind of conditional order, so when it gets to the broker system it knows to use the particular algorithm they are offering. It then works the order over time, and then the executions will come back and populate the trader's blotter in the INDATA trade order management system."

While the order messages generally involve some form of customisation, the emphasis on the use of FIX may have some positive STP benefits too, reckons Jones. "Algorithmic trading, in Europe in particular, is raising the profile of FIX and electronic trading. I think that will have a knock-on effect on single orders, not just algorithmic ones. The big problem with STP historically is that it always started after the trading is done, to automate confirmation and settlement with Swift. STP needs to start as early as possible in the overall investment process i.e. right in the front office. The expansion of algorithms, and therefore the expansion of FIX, is a great facilitator for that." Little-Gill is less sanguine about the STP impact though: "[Algorithmic trading] doesn't matter in terms of what firms have to do in terms of building STP capabilities. It is using FIX standards to pass a trade from the buy side to the sell side. But in terms of automation of trade confirmation, allocation and everything else, algorithms don't do anything."

And what of the future? There has been so much noise surrounding algo trading, there is a danger that much of it will just turn out to be hype. And in today's environment, when usage is still relatively small, it is very difficult for the buy side to differentiate between the quality of algorithms being offered.

"The marketplace is very young," points out Jones. "There is quite a lot of trepidation on the buy side about using algorithms, so I think they will need to be proven in terms of the way they are handled. But it is a chicken-and-egg situation, because people don't want to use them until they are proven, and they won't be proven until they are used."

Going forward, we are likely to see a couple of outcomes, says Little-Gill: "You can get commoditisation, so you get pricing pressures, and you will get firms start to specialise to differentiate themselves through the quality of their algorithms. I think you will see that, but we are probably 6-12 months out before the sell side will be able to prove to the buy side that those algorithms are different."

Algorithmic trading looks like it will be a useful tool though, taking the grunt work out of the traders' lives and allowing them to focus on the value-added trades. But ultimately there is always a need for a hybrid strategy, including an element of voice broking, notes Keheyan. "As every trade is different, so too does there need to be a range of options for processing the trade, dependent on a range of factors including liquidity, complexity of the trade and the needs of the client. But as trading programmes develop, they can take on more of the trading function, freeing up the voice brokers for the more complex or specialised trades."

Looks like the traders aren't redundant just yet, then. ☒