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Thinking outside the black box

The buy side is currently abuzz with products and services geared towards the current algorithmic trading phenomenon sweeping the industry. But Stewart Eisenhart explains that all algorithms were not created equal, and comparing one offering with another typically poses more challenges than it solves

Algorithmic trading, long the domain of highly quantitative hedge fund and buy-side shops, has started garnering more attention from the mainstream investment management arena as electronic trading markets continue to flourish.

Several issues have converged in recent months to push demand for algorithmic trading capabilities, including the need to curb transaction costs and market impact for high-volume trades, direct market access, and more front-end automation generally. Now, hedge fund and asset managers have greater access to algorithms from brokers via order management system vendors, as well as algorithmic trading capabilities from specialised third-party software developers; as more managers begin using these capabilities, however, they'll need to pay heed to issues of advantage – of one algorithm over another, or of using algorithmic capabilities from a broker versus a third-party vendor.

"Algorithmic trading lets the trader decide which orders to actively work, to add value to, and which orders not to, because he can't work them all" Gavin Little-Gill, TowerGroup

Major growth through 2006

Though still nascent, buy-side interest in algorithmic trading is expected to increase substantially as the aforementioned benefits of adopting these tools become more apparent.

Gavin Little-Gill, senior analyst at financial consultancy TowerGroup, expects overall US buy-side use of algorithmic trading to triple between 2003 and 2006, and overall volume of these trades to double during the same period, according to a recent report he authored, *Algorithmic Trading: Unlocking the Secrets of Black Box Trading*.

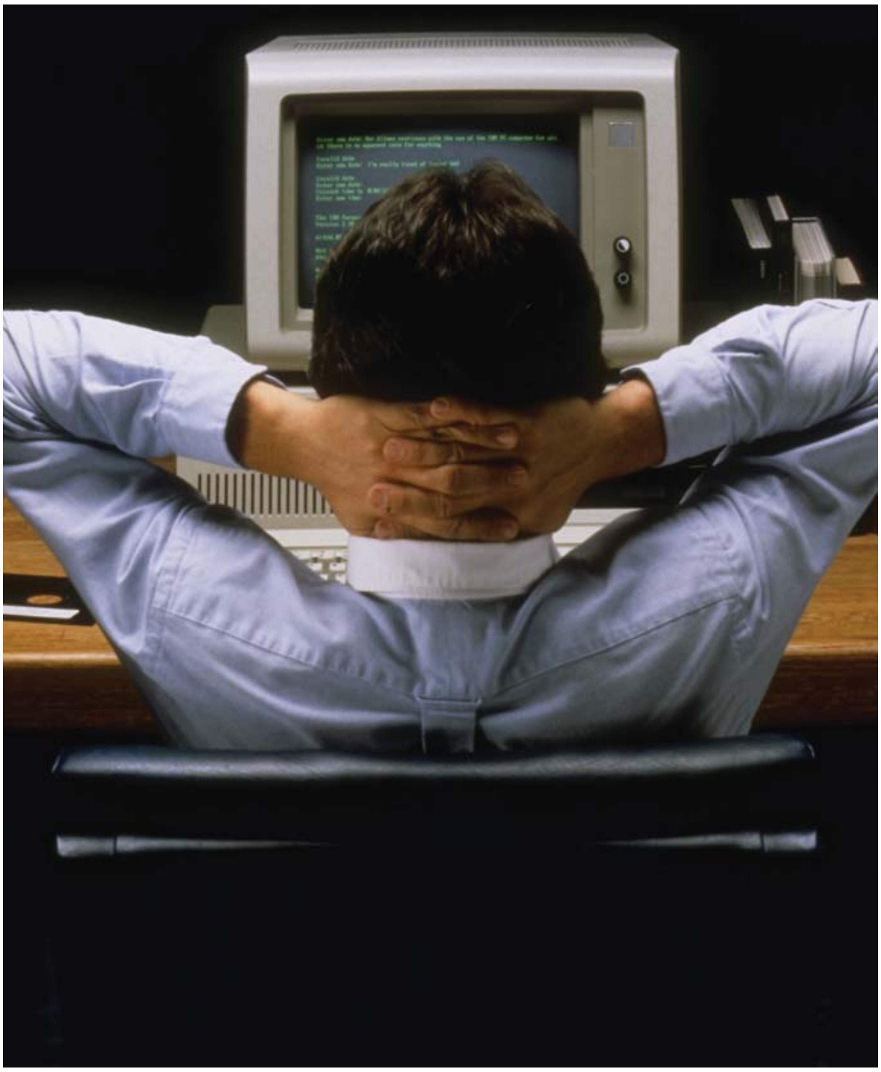
"The advantage of algorithms is the ability to let a computer generate your trades for you," the analyst explains. "If I'm a buy-side trader and I have to sell 10,000 shares, I can sit there and try to sell 1,000 shares at a time using a smart order router, but what if I don't have time to work that trade? If this is a nuisance-type trade, just throw it into an algorithm and be done with it. Let the computer figure out when exactly to kick off the trades and trade to a particular benchmark, whether it's VWAP (volume-weighted average price) or arrival price or whatever. Algorithmic trading lets the trader decide which orders to actively work, to add value to, and which orders not to, because he can't work them all."

Increased competition

Little-Gill also cites pricing as a key benefit of algorithmic trading – specifically, lower trading commissions and transaction costs.

"Direct market access (DMA) players are starting to put algorithms in front of their systems to accept higher commissions, and that's having the contrary effect of creating competition and driving prices down," he says. "We're actually seeing commission rates – explicit costs for algorithmic trades – fall below programme trades, which is really interesting."

According to the analyst, algorithmic trading so far appeals more to managers trading quantitatively at higher volumes, while larger firms emphasising their trading operations are less



likely to use these tools.

"There are benefits for all types of managers, but what we're largely seeing now are quantitative shops using algorithmic trading – guys for whom models around which securities to trade are the competitive advantage, not the trading itself," explains Little-Gill. "The biggest firms are using algorithms less. They think their trading operations are their competitive advantage, that their traders can beat VWAP. Those firms are less inclined to use algorithms."

Rob Flatley, managing director of Banc of America Securities' electronic trading services group, a provider of algorithmic trading capabilities, also notes that hedge funds constitute a substantial majority of buy-side algorithmic traders, and have demonstrated a growing appetite for more algorithmic strategies that go beyond the widely used VWAP standard.

"Five per cent of traditional money managers are using smart algorithm trading technology today," Flatley says. "I think that number will grow, but 15% of hedge funds are currently using it. They're a broader base because there are more of them, and they've absorbed it faster. They need the scale and they need to leverage computing power more than keyboard power."

Need for comparisons

All parties pushing wider buy-side adoption of algorithmic trading strategies expect more concerted efforts to measure performance of algorithms available from brokers as more managers jump on the bandwagon.

Little-Gill anticipates short-term focus on which algorithms most effectively minimise trading costs to evolve into attempts to determine which algorithms result in the best overall performance.

"The debate now is around whose algorithms are better at minimising total trading costs – getting you the best price while executing a transaction," the analyst says. "Longer term, there's definitely going to be competition based on quality of algorithms. Today, for the average long-only guy, frankly some algorithms perform better at different times. It's hard to get enough data points to aggregate and find that out. When I talk to some of the more active players pushing two million-plus shares a day through algorithms, they're starting to do some analysis to figure out who's got the best algorithms, and they're finding some differences. But for 99% of the asset managers out there using these algorithms, these differences are probably negligible, as far as we can tell."

Selection conundrum

For now, according to Little-Gill, choosing one broker's algorithms over another's has to do primarily with a broker's broader trading commitment and support it provides to a manager.

Banc of America Securities' Flatley contends that the real value in using brokers' algorithmic trading capabilities lies not just in the algorithms themselves, but also the financial engineering and execution support behind them.

"We spend hundreds of millions of dollars in this space and the magic is in the secret sauce," Flatley says. "What kind of meta-data or derived values do you create, and how do you manage those in the marketplace? It's the difference between blackjack and poker. Blackjack is pretty easy – you can count enough cards and win. But trading is more like poker, where there are a whole lot of people who've got information. They want to give a little information but not enough, and what they do give could be false."

According to Flatley, the money an institution is prepared to spend and the maturity of the models it is using are the differentiating factors when it comes to algorithmic trading. "Even with commodities like VWAP, why do two or three people always perform better than anyone else?" he continues.

"The concept is a commodity, but the results aren't. People see value in their post-trade reporting now because they want to measure one provider of essentially the same thing against another. Vendors can't do that, because they don't know what's happened to the order and most [vendors] aren't executing brokers, which means that they can provide tick data, formulas and a programmer, but somebody who has optimised their algorithm can still outperform them and they'll never know why. So I think there's value in the financial engineering aspect of this, which sometimes gets overlooked," he says.

Broker versus vendor

Of course, brokers aren't the only players extending algorithmic functionality to the buy side. Third-party vendors have also stepped up, providing these capabilities as part of their trade management platforms; according to Little-Gill, these vendors provide more flexibility in terms of securities coverage than brokers, which up to now have fared the strongest in algorithmic trading supporting equities.

This development doesn't imply an either/or scenario. However, in terms of using broker algorithms versus those developed by vendors (or in the case of quantitative managers, their own proprietary strategies), it's more a question of when to use which algorithm.

FlexTrade, a developer active in buy-side algorithmic trading, demonstrate this need for multiple sources of algorithms in the functionality of their product: FlexTrader trading platform feature their own out-of-the-box algorithmic capabilities, but also enable users to incorporate their own algorithmic models as well as access brokers' strategies.

According to Vijay Kedia, president of FlexTrade, although the FlexTrader system also provides access to broker algorithms, his firm's hedge fund clients are often predisposed to use their own models as a matter of control.

"No one wants to disclose their whole portfolio to a broker, and a portfolio or any stock is best traded when you have the full information about what you're trading, so a broker inevitably has never had the full picture of what the buy side is trying to do," Kedia says.

"When hedge funds get their list of trades from portfolio managers, typically the managers have certain alpha expectations – they might say they'd rather trade one name in the first hour, because that's where most of the alpha decay will happen. But clearly, you'd never want to disclose that fact to a broker. Neither would you like to tell the broker to get done with that name in one hour, because that's also disclosing information. If you're trading on your own platform, you can control your aggressiveness on each name, also knowing how much it will cost you to trade in one hour versus three."

If a FlexTrader client does opt to access a broker's algorithm, on the other hand, the system provides some performance measurement criteria to compare strategies, explains Kedia.

"The buy side has caught the wave of algorithmic trading, but no one has a clue as to which broker is better depending on what name, what strategy or at what time," he says. "Before you choose the right algorithm from a broker, if that broker does not have liquidity then you've made a very wrong decision. Our system could help you knowing that of the 50 brokers you're trading with, there are more IOIs (indications of interest) with broker A or B, or if there's a very liquid name you've come across, finding out which broker is most involved with that name."

All about the "C" words

For many hedge funds using algorithms as part of their trading strategies, the issue of control of order flow and execution features heavily in deciding whether to use their own models or those from brokers.

Alexandre Drabowicz, head trader at Systeia Capital Management, a Paris-based hedge fund with almost $2 billion in assets under management that implemented the FlexTrade system earlier this year, provides a telling perspective.

"It's a question of what we can do and at what cost – taking algorithmic trading capabilities from brokers or banks is just a way to unload your executions to a third party that would look after your execution in the market through their own algorithms," Drabowicz says. "The problem I have with this approach is that you're giving away a portfolio to be traded via VWAP, for example, in two hours. That broker is going to benchmark executions to the VWAP of the market – he's really going to try to stick as closely as possible to that VWAP because for him, that's how he measures how successful his system is. Though we always compare the VWAP of the market to the executing price, that's not what's most important. For us, we look at pure market impact – the price we manage to reach on the execution compared to the price at the beginning of the execution, because we're model based, and the models trigger the motors."

According to the trader, the fund is more interested in discerning what impact an order has on a stock or portfolio from the moment that order was triggered until execution in the market – Drabowicz contends that a broker handling a portfolio will pay more attention to sticking to a VWAP than to pure market impact.

Cost, of course, also figures highly in clients' approaches to algorithmic trading. John James, principal at The Oak Group, a Chicago-based hedge fund client of FlexTrade with about $90 million in assets under management, explains that his firm's high portfolio turnover rate makes lower transaction costs crucial.

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Alexandre Drabowicz, Systeia Capital Management

"Because we turn over so often, every five days or so, the transaction costs are much more meaningful to me – a penny to me can translate to as much as one and a half per cent per year in return, so we're very careful about that stuff, and trying to get those costs lower," James says. "It used to be impossible to not need a broker to do this kind of stuff – we'd give them our orders and they'd work them. Now we have all this capability in-house, because the price of computers has come down so much.

"With FlexTrade, basically we're trying to get rid of the middleman," James continues, adding that while his firm still uses brokers for holding securities and financing, trading operations have been brought in-house.

"We may be using their pipes, so to speak, but we're not really using them. We used to do that, but there's no way we'd ever want to go back to the way things were."