

ROUTERS ON THE MARCH

The complexity and velocity of routing orders have soared over the past few years, with Aite Group estimating that smart order router (SOR) clients will next year pay \$1bn for the technology. Clients everywhere are demanding faster trades and on the buy-side they want to know whether the SOR their broker uses is executing their trade in the most efficient way. Ruth Hughes Liley reports on the changes and challenges the ever-improving technology brings.

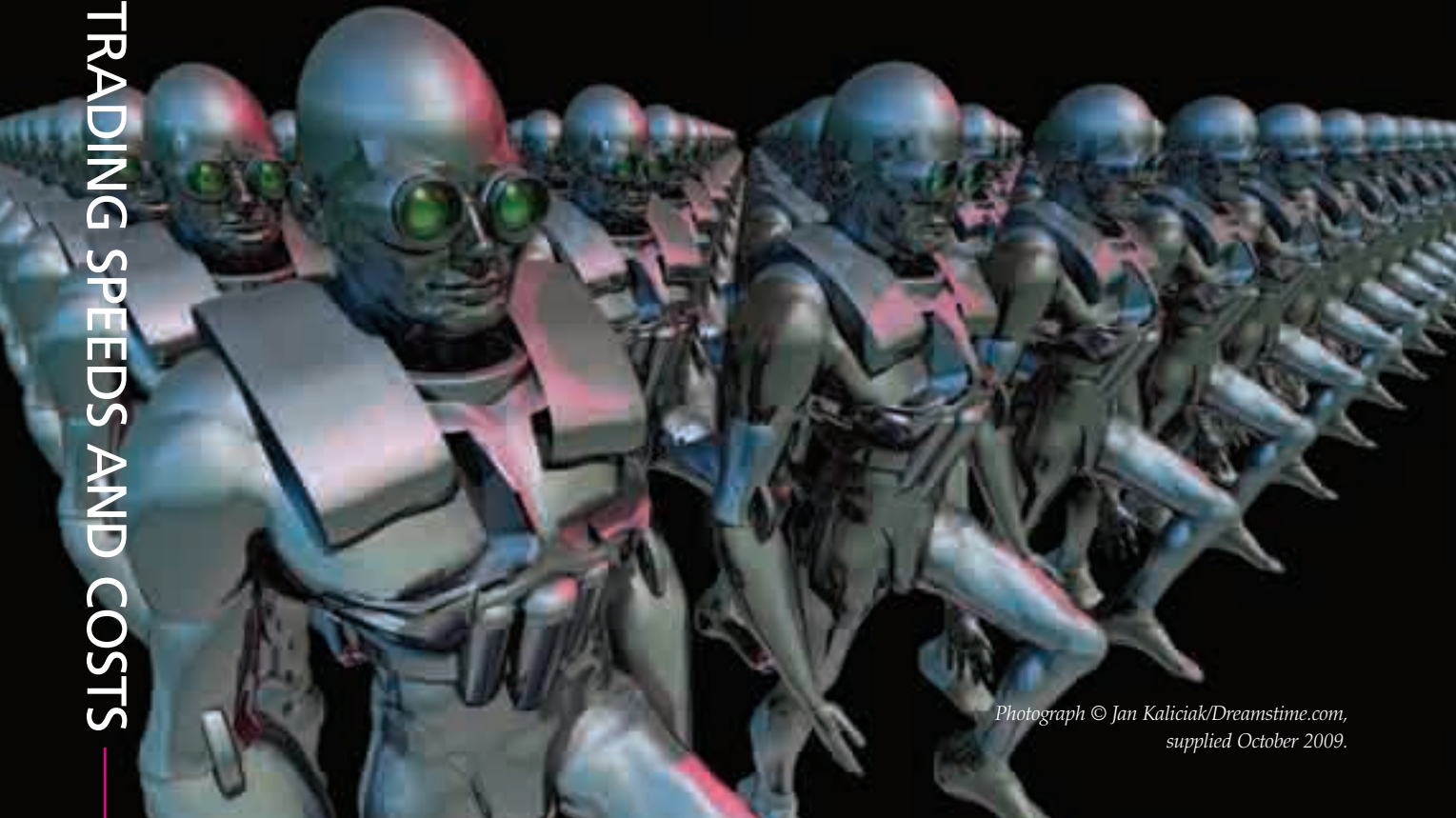
FINDING LIQUIDITY IN today's fragmented European markets is like navigating a cargo through the Nile Delta. Using a smart order router (SOR), you can pick your way along the channels and rivulets to make your preferred way—splitting up your order and taking it along several different routes at once, choosing a number of routes in advance and going straight there, or making decisions as you go along about which route to take.

The complexity of routing orders to pockets of liquidity

has increased since competition was introduced into European equity markets in November 2007 by the Markets in Financial Instruments Directive (MiFID). With the London Stock Exchange dipping below 60% of FTSE 100 market share, having a technology system that can not only find the best place to execute an order but also get there fast and efficiently is crucial for brokers. Aite Group has estimated that smart order routing clients are paying \$772m for access to SOR technology and next year the figure will rise to more than \$1bn, 95% spent with sellside brokers.

While big money is spent on smart order routers, it is a challenge for the buy-side client to know whether the smart order router their broker uses is executing their trade in the most efficient way.

Scott Cowling, Barclays Global Investors' head of equity trading, Europe, says: "Every institution has a best-execution policy as do our brokers and, as such, they are obliged to give a high level of information to show their commitment to best execution. There's some legal comfort in that. However, the devil is in the detail."



Photograph © Jan Kaliciak/Dreamstime.com, supplied October 2009.

One of the fears is that brokers use their order routers to trade on the cheapest venues which may also offer rebates for posting liquidity rather than to find the best price for their client. Richard Balarkas, chief executive officer of agency broker Instinet, says you just have to look at the way the multilateral trading facilities (MTFs) expect to see changes in market share in response to changing their fee structures. "They clearly think that brokers are going to redirect flow based on cost of trading to the broker," he says. "If true, SORs are calibrated to take charges into account, but to what extent does that take precedence over quality of execution? It's a conflict of interest. Chasing rebates doesn't lower clients' costs because they are charged on a fixed commission, but it may increase a broker's margins."

Smart order routers are becoming more sophisticated but Rob Maher, European sales head of Credit Suisse's Advanced Execution Services, says: "There are different levels of sophistication. The first level is basic routing to a venue; the second intelligently probing venues and the third providing liquidity for others to probe. Under the first two you get an immediate response and so know if you have done something wrong, but under the third you run the risk that if you are wrong you have wasted inordinate time and subjected the client to unwanted market and trend risk. The best SORs will strive to perfect this functionality and this is where we concentrate most of our efforts."

Bill Capuzzi, president of ConvergeX's G-Trade Services, agrees there are huge differences in smart order routers and, like many others on the sellside, is spending more time answering buy-side questionnaires about his router. "I have responded to ten in the past month or so, asking me questions about how it works, whether it sends data, uses indications of interest (IOI), how we guard client confidentiality and what anti-gaming measures we have in place. It's a very difficult thing for the buy-side. They have to read the information and have to trust their brokers are doing the right thing."

Capuzzi adds: "SORs are all different—there are the haves and the have-nots. For example, some route orders to all venues simultaneously, while others route sequentially. If you have a router going from A to B and



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then to C, I am going to beat that router every time if I hit A, B and C all at the same time."

Smart order routers are getting more specific in what they can do. Goldman Sachs Electronic Trading, for example, is upgrading its SIGMA smart order router for its clients who trade stocks listed on US and Canadian venues, seeking the best prices while taking into account real-time foreign exchange rates, allowing for single currency settlement.

As smart routers develop and deal with more specific events—such as Goldman Sachs SIGMA taking real-time foreign exchange rates into account—many believe customisation of smart order routers is the biggest change to have occurred in the router market over the past two years.

Ian Salmon, head of liquidity solutions, Fidessa, says: "The biggest difference is that we have moved away from a one-size-fits all approach to differentiation for each customer." He adds: "We are opening the lid on how SORs work so that users, including the buy-side, can influence the way they are used. Customers want to move beyond the SOR as just a best-execution tool and are increasingly using their SOR as a key part of their intellectual property. We're seeing more buy-sides influencing the way SORs are used and have implemented our SOR at ten different brokers and seen it operating very differently at each one."

Many believe that that level of customisation in building and maintaining a smart order router is a game which can only be played by big brokers with the money; indeed, most global brokers build their own SORs and have dedicated technology teams.

In the US, the "trade-through" rule under Reg NMS requires brokers to run orders through all markets in order to trade at the best price. Not surprisingly, this regulatory environment has contributed to 67% of SOR customers being located in the US, according to Aite Group. Europe has no such rule, although compliance with best execution rules under by the Markets in Financial Instruments Directive (MiFID) has encouraged the growth of use of smart order routers.

Notwithstanding the grip by the large investment banks, Simon Nathanson, chief executive officer of Stockholm-based global agency broker and software supplier Neonet, sees a trade-off between being in control of the system and the cost of developing it. "We develop all our technology ourselves and what is interesting is that as the world becomes more and more advanced everyone realises you can't build these by yourself. It takes time, several years and costs a fortune.

"Things go so fast with new MTFs popping up, new dark pools, new trading strategies, if you want to be in control, the cost would be

enormous. It's important for everyone to be connected everywhere so you either go through an intermediary, build the system yourself or you outsource the IT."

Although sellside firms have the lion's share of the SOR market at 95%, technology providers have 4%, estimates Aite Group, and of that market, 84% of its customers are broker-dealers. With Europe a growing market for smart order routers, third-party providers are expanding their offerings and many now provide multi-asset class coverage, collectively more than broker-dealers, according to Aite Group. SmartTrade offers equities, fixed income, futures, options and foreign exchange; FlexTrade offers all but fixed income.

However, Balarkas believes that third-party providers cannot be relied on by anyone who wants to be in division one. "The reality is that the market changes so quickly that unless you are at the coalface, you can't hope to do the best job. Smart order routing is a combination of technological skills and frontline trading skills, and third-party vendors are too removed from this."

Nonetheless, with European fund managers the fastest growing group of users of SORs, Nathanson foresees a greater understanding among them of the value of routers in getting the best price. "In the boardrooms they will say, 'We are not trading at the best price and we don't get best execution—make sure we achieve this'. It's a Catch-22 situation. To move liquidity, the venue needs support from a number of players, otherwise liquidity will never be there. At the same time that the members are placing orders, it is necessary for everyone to have an SOR or they won't see the best price."



Rob Maher, European sales head of Credit Suisse's Advanced Execution Services, says: "As more people rolled out SORs they started reacting with one another more. The challenge is to stay on top, based on what other people's SORs are doing. At first it was manual order flow; now it is much more automated and our competitors are using similar technology. You get more efficient markets when routers can react to one another." Photograph kindly supplied by Credit Suisse, October 2009.

Over at Credit Suisse, Maher agrees: "As more people rolled out SORs they started reacting with one another more. The challenge is to stay on top, based on what other people's SORs are doing. At first it was manual order flow; now it is much more automated and our competitors are using similar technology. You get more efficient markets when routers can react to one another."

Balarkas agrees that the best prices can be missed. "It's very difficult for a client to figure out what they've missed. Years ago, when prices moved every three minutes, you could see what was going on, but now you really have no objective measure. Take a

mid-cap stock with a wide spread: the broker's post-trade results show you bought at the offer, or perhaps even slightly inside the spread, so you should be pleased. But the post-trade report won't tell you that you could have traded at the mid in one of the dozen or so dark venues that exist. You don't discover these opportunities unless you look for them."

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Capuzzi of ConvergeEx says: "Brokers in Europe can dictate how true best execution is achieved. There's no requirement to connect to all multilateral trading facilities or to dark pools and no interlinking of markets as in the US. So unless you are dealing with counterparties linked to every point, you are not necessarily assured of best execution. Also, with no requirement as a broker to connect to all points of liquidity, how do you prefer one venue over another?"

Nathanson believes a solution to prices being missed will come as technology advances: "More and more people will be connected to more and more venues either by themselves or through someone else. Anything else is impossible."

While the US and UK are aware of the issues, Nathanson sees a lag in adoption of smart order routers in France, Germany and the Nordic countries, although the latest Nordic-based MTF, Burgundy, is forcing change in his region. "When it comes closer to you, you are forced to change," he says.

The need for speed has created a new competitive dynamic and is one of the issues forcing change as more firms are co-locating their servers next to exchanges to shave fractions of seconds off transaction times. For example, the Tokyo Stock Exchange (TSE) offers co-location for servers. For 750,000 yen per rack per month, plus fees for power and cooling and network charges, firms can place their servers at the exchange and from January 4th 2010, can connect to Arrowhead, the TSE's "next generation" trading system.

Similarly the London Stock Exchange has offered co-location since September 2008, In October 2009 it spent \$30m buying Sri Lankan technology company MillenniumIT, enabling it to replace its platform, TradeElect. It will vastly increasing the speed of its platform and enable it to provide clients with sub-millisecond transaction speeds and multi-asset class trading when it is introduced by the end of next year. It will also provide the LSE with a "footprint" in Asia.

Interestingly, high frequency, statistical arbitrage traders represent only 1% of the SOR market according to Aite Group. This is because they can transact their trade faster by going straight from A to B and by co-locating their servers at the exchanges, believes Capuzzi. "For the non-stat arb traders, smart routing has replaced direct market access (DMA) and unless a client specifies they don't want it, I will always use an SOR."

However, Max Palmer, director of algorithmic solutions at technology provider FlexTrade, says: "While most high frequency traders are co-located, not all co-located firms are necessarily high frequency. The users of smart order routing technology are people who want to access liquidity simultaneously and in parallel at multiple market centres and are, by and large, not co-located. Smart routing is not as fast as co-location for accessing liquidity, but it saves traders from having to enter six orders in sequence if six markets are bidding or offering. So it can be fast enough to access the liquidity at all of the markets as opposed to individually-generated orders, which create signalling and leads to the cancellation of the remaining bids or offers by the time the trader has entered the third or so order."

Certainly the new breed of smart order routers is giving firms the ability to access dark and lit venues at speed. Fidessa's new online Fragulator tool, which launched in October on the Fidessa Fragmentation Index website, enables users to calculate the trading pattern of a stock over any time period across both lit and dark venues as well as systematic internalisers and over-the-counter (OTC) trades. Although the amount of dark pool or non-display trading is still small at around 5% of equity trading in Europe, it is growing. Agency broker Instinet, for example, claims 30% of its trades on one large trading day in October were executed on dark venues at the mid-price.

"The ability to intelligently access both dark and lit venues is where I see most potential in future smart order routers," says Salmon of Fidessa. "We are seeing more customers reporting huge increases in volumes in dark



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venues. It's challenging, but it's an opportunity and we are already seeing a rise in the block approach."

Baikal's smart order router launched this year links to 17 displayed and non-displayed venues across 14 countries and will also route to brokers' internal crossing networks. At the same time as the number of venues creates complexity and larger amounts of data, the number of order types is a headache for any SOR developer. Additionally, SORs will have to carry even more data in future: 60% of firms questioned by Aite Group are planning to build in other data such as economic indicators.

BGI's Cowling says: "Better post-trade reporting is important for us to help us better analyse our trading, but with fragmentation of data, it's a difficult exercise to build a good picture."

Smart routing is both a cause and a consequence of the globalisation of equity trading and as an example Credit Suisse has opened up its smart order router to the Japanese market. "The core technology in our Asian SORs is the same as Europe. However, every market is unique and the SOR's must be tuned for their individual microstructures," says Maher.

Palmer at FlexTrade agrees: "It's still early days in Europe. The European Union doesn't have a consolidated tape and until these issues are clarified and the infrastructure improves, it may never reach the proportions as in the US, where fragmentation is a decade-old issue."

Fidessa's Salmon says the buy-side now has a confusing choice: "The markets quickly evolved beyond a simple best-execution approach and skilled brokers now have the ability to add value to the buy-side by customising execution strategies across the plethora of dark and lit venues on a consultative basis. This 'broad touch' approach to SOR, where technology and trading skill are optimally combined, has become the main differentiator to trading in a fragmented marketplace."