Special FX

Expert practitioners discuss the use of execution algorithms

Anna Reitman talks with leading providers to discuss how a new generation of FX algorithms, analytical toolsets and order routing solutions are giving clients more control over the way that their orders are placed, as well as access to more detailed pre- and post-trade analysis than has ever been possible before.

Electronic channels have been around for a while for the buy side, but algorithmic automation of trades is only recently picking up steam among the more traditional firms. In its latest report, Greenwich Associates found that long-term investors and corporate end users are increasingly turning to algos and transaction cost analysis (TCA) to optimise their trading performance.

Among corporates, 28% of spot volume was executed via algo by users in 2016, compared to 10% in 2015. Institutional fund managers, meanwhile, increased their use of algo-based trading by 5% in 2016, from 16% to 21%.

It's a shift that Morgan Stanley said is driving clients to find value in algorithmic execution.

"Often the solution can be to use order types, such as algorithms, that fuse together sources of liquidity and access them in an intelligent way," explained David Wright, Managing Director and Global Head of Morgan Stanley Electronic Trading Macro.

Working closely with clients to help them actively manage execution frequently involves finding strategies that are targeted to specific objectives, and developing those execution methods with clients over time.

THE TIMES THEY ARE A-CHANGING

Across the industry, FX practitioners are seeing demand for more transparency and control over executions. At Deutsche Bank, clients are interacting with algos in ways

Special FX – Expert practitioners discuss the use of execution algorithms

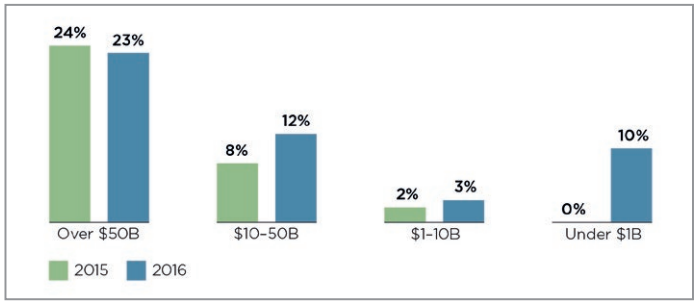
that are more dynamic and in real-time, says Cameron Mouat, Global Head of FX and Futures Algo Execution at the bank.

Real-time management is becoming a must-have for those clients who are looking for more control of their algo. At Deutsche, the 'algo monitor' gives clients access to real-time TCA and algo controls such as 'Hit Bid', 'Sell portion Now', 'Get Me Done' or 'Pause/Resume'.

"Our clients now see real-time trading information via our Real-Time TCA portal including performance versus benchmarks; participation rates; and venues of fills," he said. "This information combined with additional algo controls such as 'Hit Bid' or 'Buy/Sell portion now', encourages the client to interact with an algo in a dynamic way."

He added that clients have a wide variety of trading styles, ranging from fast and opportunistic liquidity seeking to passively trading for impact reduction: "It's important that each client has an individualised consultation with our algo experts to discuss which algos are most suitable to fulfil their requirements. That could be a mixture of algos, electronic and voice or more tailored products such as those offered by our Maestro product."

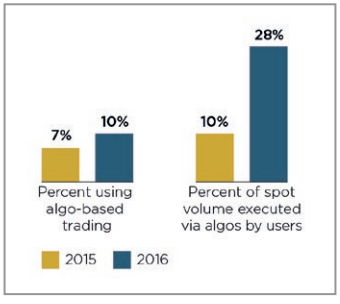
"In the near future," he added, "Deutsche plans further enhancements for working algos against franchise liquidity."



Source: Greenwich Associates 2016 Foreign Exchange Services Study

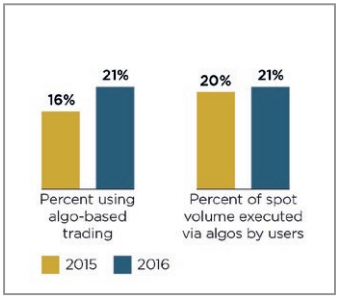
Algo Usage – Corporates by Volume

Note: Based on 377 global top-tier respondents.



Algo Penetration and Flow – Corporates

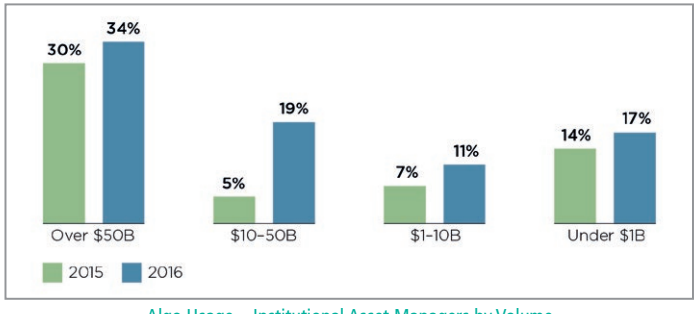
Note: Based on 377 respondents for global top-tier penetration and 39 for algo flow.



Institutional Asset Managers

Note: Based on 250 global top-tier respondents for penetration and 53 for algo flow.

Source: Greenwich Associates 2015 and 2016 Foreign Exchange Services Study



Source: Greenwich Associates 2016 Foreign Exchange Services Study

Algo Usage – Institutional Asset Managers by Volume

Note: Based on 250 global top-tier respondents.

OLD DRIVERS, NEW TECHNOLOGIES

Using strategies that aim to minimise market impact and reduce execution costs have historically been the primary motivators for using algos and it's evident that the appropriate strategies used in the right conditions can achieve those aims, said Mark Burroughs, Director of eFX Distribution at RBC Capital Markets.

Special FX – Expert practitioners discuss the use of execution algorithms

More recently, market structural changes and regulatory obligations drive adoption of algos as clients seek alternative liquidity sources or look for more execution transparency.

Clients demanded a "simple suite of algo strategies with bespoke controls", which give them a substantial degree of discretion throughout the order lifecycle.

"They want to retain the ability to impact the pace and participation rates of the strategy real-time, allowing them to be re-active as conditions change," he said. "Ultimately, we aim to deliver a suite of strategies that allow clients to execute their trading strategies optimally, according to prevailing market conditions and within any parameters they have set for themselves."

Mark Burroughs

Investors are increasingly turning to trading algorithms to help them apply the insights provided by TCA

"Clients are also experimenting more, and RBC is helping them understand the benefits of implementation shortfall strategies (sourcing liquidity attempting to beat arrival price) versus passive strategies (which can lead to the assumption of excessive market risk)," said Burroughs.

"What has become clear though is the shift away from vanilla strategies as more and more investors continue exploring a broad spectrum of execution algos. We are not promoting a blanket adoption of algos by any means, but we are making clients more aware of the execution solutions available and helping them understand the potential benefits of deployment," he added.

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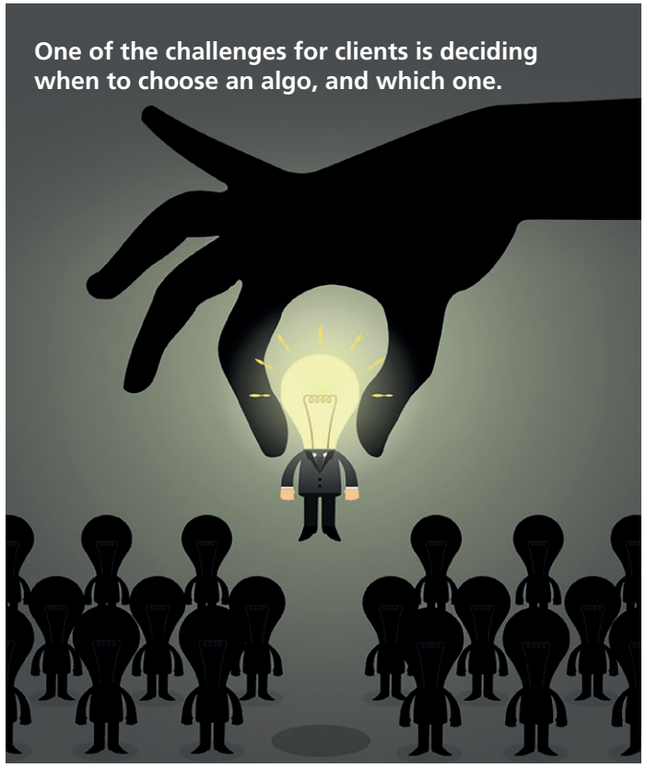
FX'S 'SATNAV'

The combination of incoming regulations, such as MiFID II, and cost cutting continue to be discussed as major drivers of increased FX algo usage at BNP Paribas.

Regulatory impetus is more of a recent phenomenon, said Asif Razaq, Global Head of FX Algo Execution at the bank, making clients feel that, with electronic trading, they can face new requirements if there's



an auditable trail for decisions with time stamps down to the nearest millisecond.

Cost cutting, meanwhile, has been around for years. "The buy side is looking at how they can reduce the number of traders that they have and they look at automated execution tools like algos as a mechanism to offset some of that," Razaq noted. One of the challenges for clients is deciding when to choose an algo, and which one. The most common way to trade foreign exchange is on a risk transfer basis; banks that provide market making services offer clients a fixed price to transact the full order.

With FX algos, however, clients can outperform that risk transfer price by trading off the bid-offer spread.

"That's why the clients are looking at this type of technology to optimise their execution costs. But then the question is when do they use risk transfer price and when do they use execution algos, and that's where we introduced our new product called Insight, which is a pre-trade TCA tool," said Razaq.

Razaq said that Insight is like the "satnav" of FX, which helps a client navigate the trade in the most optimised fashion. For example, if a client wants to buy a currency in any amount, Insight will present the client with the execution costs for different options: risk transfer or algo.

"We use all our back-tested models to simulate how we think the performance of the algorithm will be based on past execution data and implied volatility data, looking at the events and liquidity that we anticipate in the market," Razaq noted.

PASSIVE OR AGGRESSIVE?

This is true for various different styles of algorithms, so whether a client uses a very fast aggressive algorithm or a dynamic passive algorithm that is adapted to the market and more hidden, there will be an analysis of how long the algo is going to take to execute, and the expected slippage.

What is "really clever" about the tool, he added, is that criteria can be dynamically changed in drag-and-drop fashion for the time a trade needs to happen. A client can add route criteria, parameters to the algo so that it trades in a certain way, and the satnav will recalculate the route and predict the new cost of execution.

"Before the clients even enter the trade into the system, they can evaluate the different path of execution," Razaq said. "This is the tool that we believe that we needed to build to aid our clients to make that decision of which algo to use and what parameters to use to execute the trade."

Meanwhile, the results can be stored, and if BNP Paribas is ever questioned by the client, or the client needs to pull up information for internal compliance or is audited, the analysis is available with quantitative data to back up routing and execution decisions.

WHEN ALGOS DEVIATE

Sometimes an algorithm encounters turbulence, or runs into traffic, and deviates from the predicted view of the algorithm. Such deviations are then looked at on a collective basis, rather than on a trade-by-trade basis, and the trade information is analysed to understand what is, and is not working in a client's FX algo execution strategy.


Asif Razaq

"The buy side is looking at how they can reduce the number of traders that they have and they look at automated execution tools like algos as a mechanism to offset some of that."

After looking at the client's trading pattern, improvements can be suggested: perhaps trading one hour earlier will greatly improve execution costs due to better liquidity available at the time, or when there's less market turbulence.

This is the post-trade TCA space, explained Razaq. "It completes the life cycle of TCA whereby we are analysing the trades, post the trade, and give the client feedback to say how better to prove their execution policies in-house, to optimise execution."

That means looking at different currency pairs being traded, the time of day, the size of the order, and the type of algorithm being used.

"There's various factors that we look at and we give these clients a regular feedback loop to encourage them to optimise their execution," he noted.

CHOOSING ALGOS

David Wright noted that Morgan Stanley's aim is to work closely with clients to enable them to actively manage their execution. Their differentiators here are both their specialist e-sales team, who are experts in electronic execution, and their pre-trade liquidity analytics product called 'Quantitative Solutions and Innovations' (QSI).

As well as aiding clients to find the most suitable strategy, Morgan Stanley also periodically reviews and optimises their algos, and how they access liquidity. With the rise in non-bank market participants and the fragmentation of FX liquidity, Morgan Stanley's Fusion offering helps clients navigate this landscape and enhance their trading methodology.

"Cutting trading costs is a key goal of algorithmic execution by our clients: not only through the possibility of passive placement, but also through Fusion's capability of accessing various liquidity sources which could achieve more beneficial prices than Morgan Stanley may be able to offer via standard risk transfer execution," he said. In general, once a client has been aided to find a strategy that helps them achieve their internal benchmark, they tend to keep using it because they've

"As well as developing what the algos achieve in order to meet clients' trading goals, we're also concerned with how they achieve them."


David Wright

found the solution that works best for them.

"Often, we see clients expand algorithmic strategies to other areas of their execution: for example, judging if they still find value using orders for smaller volumes, or using different approaches for different currencies," Wright said.

At the same time, continual development of the FX algo business means soliciting clients' feedback as well.

"As well as developing what the algos achieve in order to meet clients' trading goals, we're also concerned with how they achieve them. To this end, we frequently monitor and fine-tune how and where our algorithms access and interact with FX liquidity in order for Morgan Stanley to provide efficient pricing to clients," said Wright.

What makes this possible is significant investment in technology along with Morgan Stanley's shared infrastructure, MSET (Morgan Stanley Electronic Trading), which is used to execute FX, equities and interest rates.

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

The language associated with new technologies has become de rigueur for the sell side. Although artificial intelligence and machine learning are not new, the big data part of the puzzle is now fitting into place, and there is plenty of warranted excitement over the possibilities.

Artificial intelligence, explained Razaq, is all about making computer programs more flexible and less rigid.

If the market becomes very active or slows down, adaptive algos detect the momentum and change their execution behaviour. "This concept of adaptive algos was very new to the FX market and this is what clients liked about the BNP platform - that level of AI has advanced considerably since we launched our algos and we are always adding different mechanisms into the algo strategies, with different bodies of AI built into it."

BNP Paribas' latest development, released a couple of years ago, was a self-learning component to the algo that determines the best venue to trade on and helps traders navigate fragmented liquidity across multiple execution venues.

"Every time they are in the market, algos are learning from the market: which are the reliable venues, which venues am I not getting filled on, which venues am I seeing the best liquidity, the best pricing?" said Razaq.

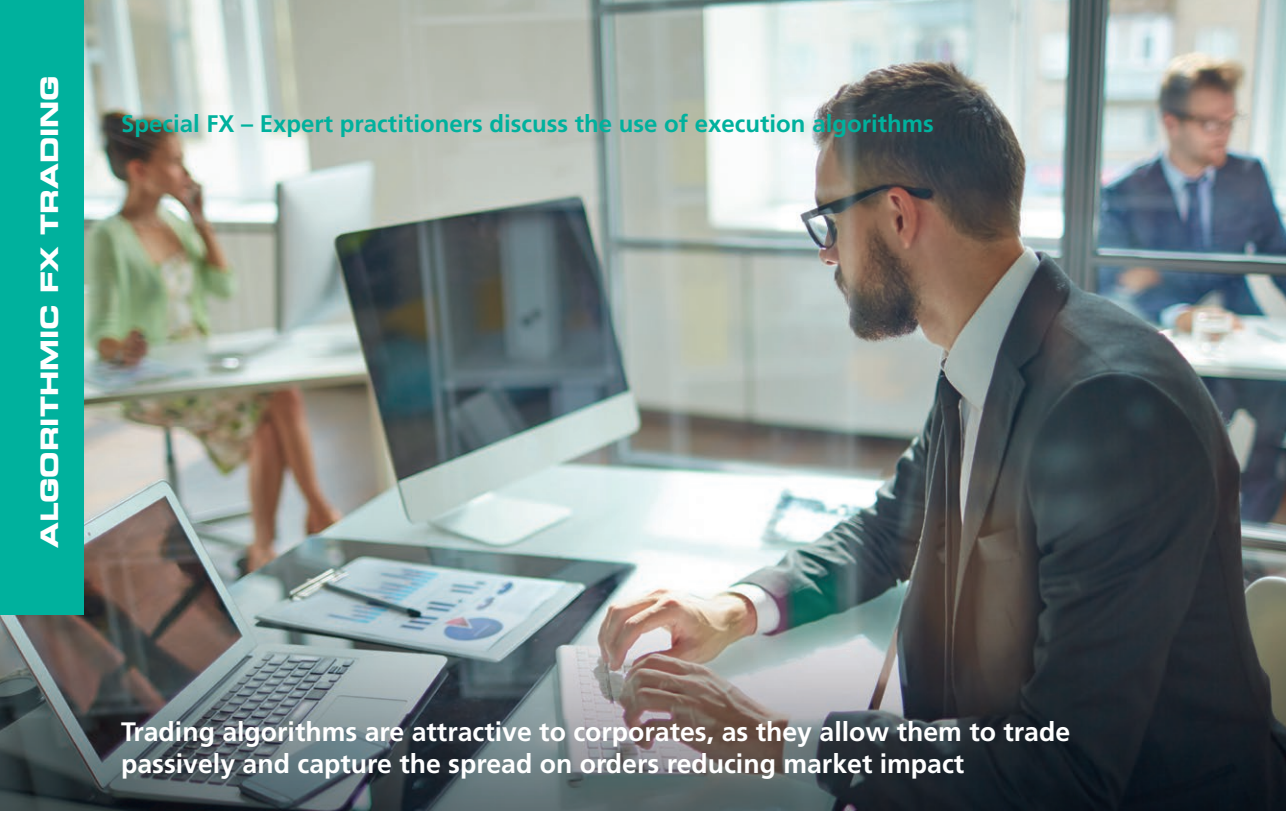
Then, the algo "remembers" where the good venues are, and which venues to temporally exclude for future executions.

The algo is taking "mountains" of data and using AI to navigate and learn what the right path of execution is, and now those views and decisions will be surfaced to the trader in real-time.

"We are continually engineering our algorithms, continually making them smarter. Interactive real-time algorithms are going to be the next generation where we are going to be focusing our efforts on," he said. In addition, the bank is partnering with academic institutions to introduce more AI self-learning techniques into FX algorithms.

CONTROLLING TRANSPARENCY

When execution algorithms were first launched, clients



Trading algorithms are attractive to corporates, as they allow them to trade passively and capture the spread on orders reducing market impact

were relying on engineering so that the algo would self-pilot itself through the market place, effectively delegating execution knowledge to the algorithm.

But the smarter the algos get, the more traders want to be able to capitalise by understanding how to work with them. Deutsche's more experienced algo clients, for example, are reaching for greater control and transparency for more informed decisions, noted Cameron Mouat.

"Clients are using analytic tools so they can understand the market using real-time analysis and also interact directly with the algo if they choose to," he said. "We are continually developing our algos to benefit clients by improving the control, transparency and analytics available to them."

At BNP Paribas, some of the more active clients interact with an algorithm as many as 40 different times for an execution window. And the increased interaction has even led to client requests for analyses to confirm that the algorithm performed better with interference rather than being left alone.

After the bank's team ran simulations and back-tests, results showed that by interfacing with the algorithm clients got better results. Why?

"The simple answer to that question is the alpha that the clients bring. They add in their own view of the market into the execution, so for example if the client said I think the market is going to move in my favour and pauses the algorithms or slows the execution down to capitalise on that favourable move then that is value-added they are bringing to the table which is over and above what the algorithm would have done," explained Razaq.

The next big growth area in foreign exchange algorithms is going to be real-time monitoring, he noted.

"As clients become more interactive with the algorithms it's imperative that we give them real-time feedback on what is actually happening in the market underneath," he

said. "We are actually building a real-time version of Insight, whereby what we are going to do is give clients live views of what the algorithm is detecting and seeing in the market."

REAL-TIME ALPHA

Real time management of an order really depends on a client's trading objective, said Morgan Stanley's Wright. For a strategy like a TWAP, a client may not want to interfere in the execution as they want the order to achieve what it's designed for: the time-weighted average price. However, in-flight management of algo parameters is possible. "We can work with clients to recognise when modifying a strategy may add value. For example, we could suggest that a client alter the urgency of an algorithm, in order to pursue real time alpha due to market conditions changing during execution," he said. Wright said that when a client chooses one of the bank's algos, it's because they believe it is the most effective method for trading according to their internal objectives and, in that sense, the onus should be on Morgan Stanley to fine-tune parameters.

Cameron Mouat

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At RBC, the bank continues to work with clients to understand how algo tools can be leveraged to meet individual objectives. In the short term, the FX algo business does not need to change drastically, said Burroughs, and developments are more focused on pre- and post-trade analysis, in particular delivering detailed transparent TCA to meet clients' regulatory obligations.

"Our current algo offering is achieving these aims effectively and we are pleased with the performance of our algo strategies in the current environment. However, this is a dynamic trading environment and as structural changes evolve we are very well aware that our strategies must evolve as well," Burroughs said.

"You have to find the right balance of analytic tools to present to clients. Some clients require more than others but it is feasible that the pending MiFID II obligations will spur investors to adopt a more consistent approach to TCA data consumption and analytics."

RBC encourages real-time management which allows clients to stay fully engaged with their algo strategy. The RBC strategies have in-trade controls allowing the user to be reactive to prevailing conditions and maintain order participation within their risk boundaries and meet their objectives.

CLEVER ROUTING

Smart order routing (SOR) functionality has always been part of RBC's algorithmic offering and more clients trade direct to market strategies via the SOR as opposed to principal algos. Regulatory obligations for transparency and best execution are likely to be the drivers for that trend.

Indeed, these factors helped shape RBC's SOR strategies, said Burroughs, certainly with the Strike and SmartTake Algo offerings. Both these algos intelligently source liquidity across the market spectrum, targeting active venues with a blend of passive and aggressive orders attempting to reduce implementation shortfall.

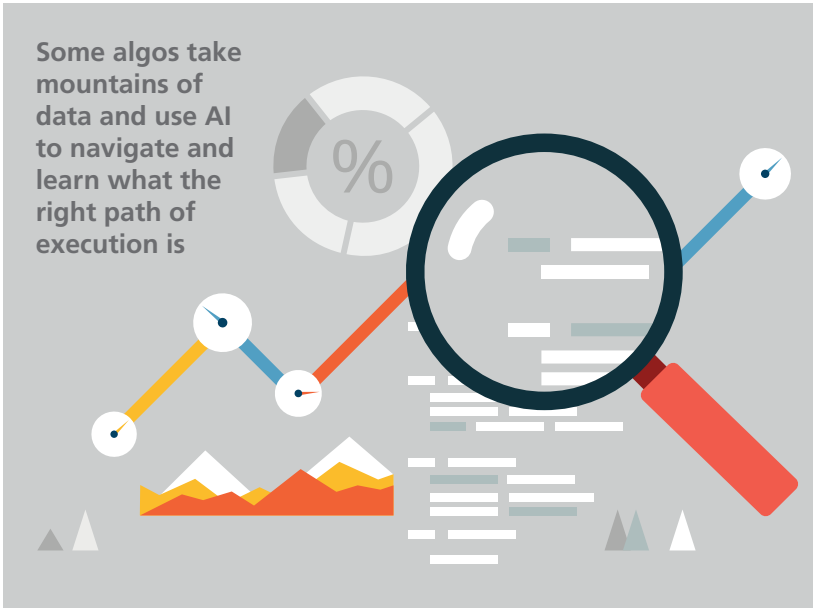
"Conversely, at RBC, we're developing our SOR capability

to handle large block trading capabilities where franchise order flow fills block interest without accessing the market. Pre- and post-trade analytics continue to be a client benefit with increasing demands for bespoke services, and pre-trade analysis increasingly so, as clients "prefer individual strategy analysis, liquidity profiling and recycling times", he said: "It's evident that more clients are taking the time to consider risk versus reward, pre-trade."

It may get talked about more often nowadays, but smart order routing has always been important, said Morgan Stanley's Wright: "Where an algorithm is being executed and how it is interacting with liquidity are the foundations for its execution."

The bank has leveraged MSET Equities technology to create a high speed, low latency FX smart order router, combined with colocation with key ECNs. A smart order router's effectiveness in accessing external liquidity is growing increasingly important as the FX market becomes more fragmented, but also because of how orders interact with internal liquidity.

"For us 'effective' execution is ensuring that clients can find benefit from both our own liquidity and from our external liquidity sources," said Wright.



FEEDBACK LOOP

In terms of pre- post-trade analytics, the bank continues to develop the QSI liquidity analytics suite based on client feedback. Clients can use this product to assess liquidity conditions and model algorithms, in order to select the best strategy based on their trading objectives and market dynamics.

For example, client discussions led to the creation of a 'Participation Ratio Calculator', which uses sophisticated volume estimation of the external FX market to determine the optimal estimated duration of an algo to target an estimated percentage participation.

"Our e-sales team use this tool and other metrics if requested by clients, or can teach clients how to use the tools themselves," said Wright. "For our most active algo users, our QSI team may also conduct bespoke liquidity studies to assist with client trading strategies."

Post-trade performance reports are equally as important, as they assist to demonstrate the effectiveness of Morgan Stanley's algorithmic offering.

"We aim to be fully transparent and provide a variety of benchmarks for comparison, as well as offering further analysis of the specificities of an order's execution," he said, adding that the bank is supportive of independent initiatives, such as the plans for a consolidated FX tape, which aims to provide further transparency in the market.

REGULATORY IMPACTS ON FX MARKETS

Whether regulations will boost FX algo usage or not remains in question. While MiFID II is the regulation most frequently discussed with the most far-reaching implications, other transparency initiatives are starting to get noticed and weighed up for potential market impacts.

Regulatory directives from MiFID II and the burgeoning industry adoption of the FX Global Code of Conduct principals should give customers more confidence to expect more from their banks, and collaborate with them to find optimal solutions for execution, said RBC's Burroughs.

RBC was a member of the Global Code FX Working Group. The bank led the drafting of two sections of the Code and contributed to many others.

"We expect the Code to help shape the market of the future and by promoting the use of best practices, we should help raise industry standards collectively. We give it our full support and have already signed a statement of intent," RBC's Burroughs said.

On MiFID II, he noted that the sweeping EU regulation will demand a more transparent and auditable execution process, and that it is possible that transparency obligations may force more investors to trade more DMA and less principal strategies as they strive to demonstrate best execution across the market spectrum. "We are increasingly seeing investor demand for third party TCA analysis to validate their execution strategies. This may incur additional expense but nothing prohibitive," he said. "I certainly do not expect this to impact the growth trend in algo usage."

Real-time management is becoming a must-have for those clients who are looking for more control of their algo.

RBC are working with a third party TCA provider to help prove best execution, but more generally are partnering where it makes sense to deliver solutions to clients. Morgan Stanley's Wright said that even before the requirements of MiFID II were announced, there was already a focus on transparency and being rigorous in controls and testing, which should make the transitions required for MiFiD II more seamless.

"We expect that the biggest change resulting from regulation and the new FX Global Code of Conduct will be clients themselves becoming more focused on transparency and achieving the best price available in the market. We're also expecting an increased interest in how using our order types and expertise can assist clients to demonstrate why a particular strategy was deployed, how it was executed and how it truly benefitted the client's trading," Wright says.