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DMA - an increasingly attractive toolset for the FX buy-side

The concept of 'Direct Market Access' (DMA) is a simple one and is yet another example of an invention that started out in the equities market and is now being adopted in the FX market. Nicholas Pratt examines the evolution of DMA and what it means for FX traders

In equities DMA emerged over the last decade as a way of providing buy-side firms with an undiluted means of access to the exchanges and other execution venues. Up till this point the only way that an asset manager, hedge fund or corporate could access the market was via a broker. However as electronic trading began to thrive, leading to more advanced strategies such as algorithmic trading and facilitating the growth of high frequency trading hedge funds, the conventional broker-based means of execution began to feel insufficient to these new breed of buy-side traders.

The advantages of DMA were threefold. Firstly it offered the quickest route to market with little latency being a sole connection between buy-side firm and execution venue.

Secondly it offered lower transaction costs because of the absence of a broker. And thirdly it gives buy-side firms greater control over their own trading - something that has become more and more important as shown by the various regulatory initiatives such as commission unbundling and the Markets in Financial Instruments Directive (MiFID) – both of which were aimed at deconstructing the role of the broker and its relationship with buy-side traders.

DMA in FX

As we have seen with electronic and algorithmic trading, what starts off in the equities market usually finds its way to the FX market and the same has happened with DMA, however there are some noticeable differences, not least because there is not the same exchange-based structure to the FX market.

"DMA in the FX market did not really start until there was the market structure to allow it," says Chip Lowry, chief operating officer at Currenex, which along with Hotspot FX, was one of the first venues to bring an exchange-based model to the FX market in the early stages of the century. "Not only did we have an exchange-based model but we also had executable streaming prices which helped create the order book."

The early users were not the typical FX traders looking to smooth out currency transactions or hedge their positions, says Lowry. "They were hedge funds trading FX as an asset class and this was only possible because there was the technology to allow it and the prime brokers to provide the credit line they needed. All of this created an environment within FX for DMA."

The advantages of using DMA has not changed much over the years but, says Lowry, what is needed to be a successful user or provider of DMA has changed. "Low latency is now critical for high frequency traders – how quickly does the matching engine work? How quick is the network? How close to the execution venue are you?"

Of course the natural conclusion for this march towards low latency nirvana is that everyone ends up at the same point where the matching engine can go no faster and co-location can get no nearer. "We're getting very close to that point," says Lowry who adds

Chip Lowry
"DMA in the FX market did not really start until there was the market structure to allow it,"

that the next stage of development is making sure the code is faster by putting it directly onto the chip rather than the memory of the computer, thus shaving vital microseconds off the trading time.

Another provider of DMA services for the FX market is US-based Advanced Markets. "The key advantage to our FX DMA model is that it enables trading on highly competitive prices from more than 10 leading banks on a fully transparent, anonymous, low latency platform," says Anthony Brocco, chief executive at Advanced Markets. "Further, DMA goes beyond the STP model in that all rates are directly from banks with fully transparent market and revenue models". "In practical terms this means trades are done on excellent prices for the full ticket amount because banks are refreshing their prices several times per second. Partial fills almost never occur and platform rejection rates are significantly less than one per cent. Our clients report this high success rate, in terms of full amount trade executions, stands in stark contrast to ECNs and other multilateral platforms."

Main users

Brocco says that the main users of the DMA service range from hedge funds to experienced individuals "who want to trade on tight, neutral prices that are not spread or skewed in any way". He is also seeing strong demand from large banks and brokers. "These institutions are seeking the best possible FX model to offer their clients in terms of transparency, pricing, liquidity, low latency trading capabilities. "In terms of traders, the interest is from those market participants who are concerned with optimizing their trade execution performance.

Anthony Brocco
"DMA goes beyond the STP model in that all rates are directly from banks with fully transparent market and revenue models".

Of late, model traders are becoming significant users too. They tend to value the pristine, robust neutral, realtime market data that our DMA platform generates to power their trading models. The appeal of anonymous access to institutional grade pricing is attractive to our clients. Bear in mind, that many FX DMA platforms are not anonymous either because the client is disclosed or because the broker offering the platform is a market maker on it." Technology is one of the main ways in which providers of DMA services are looking to differentiate their offerings as well as widening access and broadening the distribution of these services. "From an IT standpoint, our DMA model is relatively simple to support because it provides equal access to all participants to the same liquidity pool of prices," says Brocco. "As such, our technology partners have been able to ramp up execution speeds and market data dissemination impressively in short order to name two of a host of other ongoing technology refinements.

"We are also looking to differentiate our offering by constantly refining our model to provide the most straightforward, purest expression of centralized order book DMA we can," says Brocco. "That's what our clients want.

Raising standards

As DMA grows in popularity, it will place pressure on the various FX execution venues to improve their technology standards and execution quality as these properties become more conspicuous to trading firms. "DMA is an enabling market structure in terms of efficient liquidity access and market transparency," says Brocco. "So to the extent that it raises standards in terms of execution quality, meaningful trading cost analysis and higher quality market data, other venues could feel pressures to adjust their models."

Overall Brocco says that DMA will evolve and grow as market participants add it to their array of FX liquidity access venues. "We are seeing the seeds of this growth now as bellwether fund managers adopt this method of market access to support compatible

Harpal Sandhu
"We've always believed that DMA existed in the market but it was always manual so the first task was to put all of these ideas from a trader's head into a computer."

trading strategies and tactics. On the retail side, we see DMA as becoming the market structure of choice among experienced individual traders as well as brokers and banks globally that are looking to offer the best possible FX product to clients."

"We first brought DMA to the FX market over five years ago," says Harpal Sandhu, chief executive of Integral. "We were very focused on transparency and OTC trading connections between liquidity takers and liquidity providers. We've always believed that the fundamentals of FX trading is based on (OTC) relationships but without a DMA facility, it would take the participants a long time to setup their own electronic connectivity to their providers or customers."

DMA has since evolved into something far beyond simple point-point networks, says Sandhu, citing the array of business services that run on top of the network. This development has added a complexity to the design of a DMA service that Sandhu believes is beyond the majority of trading firms that are considering developing such a service in-house.

"For people building their own connectivity, there are things that they do not even know that they don't know. For example, you have to work out your price discovery, so you can convert apples to apples. All of these liquidity sources have their own formats which have to be normalised so there is an aggregation aspect, there is credit line management, netting, straight-through-processing (STP) for pre and post trade processes, verification of execution and the monitoring of connectivity and rejection rates. These are all key aspects of any DMA offering. It is all about the services that run on top of the infrastructure."

Building DMA models

One firm has developed its own DMA model is Rockshore Partners, which also boasts an in house proprietary fund with Rockshore Funds. Rockshore Partners provides the black box-type trading application for the fund. "Rockshore Funds is our in-house fund which licenses the software that we developed" says Nick Pittarelli, a quantitative analyst with Rockshore Partners. We have several FIX-based API's that connect us to portals such as Hotspot, Integral, Currenex and others.

We designed it purely for passive arbitrage. We co-locate and are within half a millisecond from all of our counterparty connections, and trade identification is a mere 12 microseconds. It might not be the fastest, but it is extremely quick. When we developed it, we kept in mind that we wanted to use it through a prime broker service tailored to high frequency algorithmic trading companies. We obtain our service through a top tier global bank in conjunction with our funding partners at Graceland Capital. By building this for DMA we eliminate the interfacing directly with the broker and we reduce latency while maintaining completely transparent pricing. To Rockshore, DMA is the only way to deal as our platform is built for ultra high frequency trade opportunities in retail and institutional FX market," says Pittarelli.

"We trade arbitrage passively, with linear, triangular, and market making strategies so our application handles complex event processes through this DMA access. Our market making interface conducts a vast amount of high frequency autodealing price computations and incorporates a multitude of proprietary methodologies. Much of this is material a typical institutional prop shop would not have because of the complex programming involved. It is a sophisticated system that took us two plus years to build. We started in early 2006 and it is a constant work in progress. We have the ability to make markets in a traditional manual fashion or with complete automation. Its capacity is measured to stream more than 5 million quotes per day to all of our trading venues. This is what we deem as buy-side paradise." states Pittarelli.

In terms of the using APIs for DMA, Pittarelli says that FIX connectivity has been a key component due

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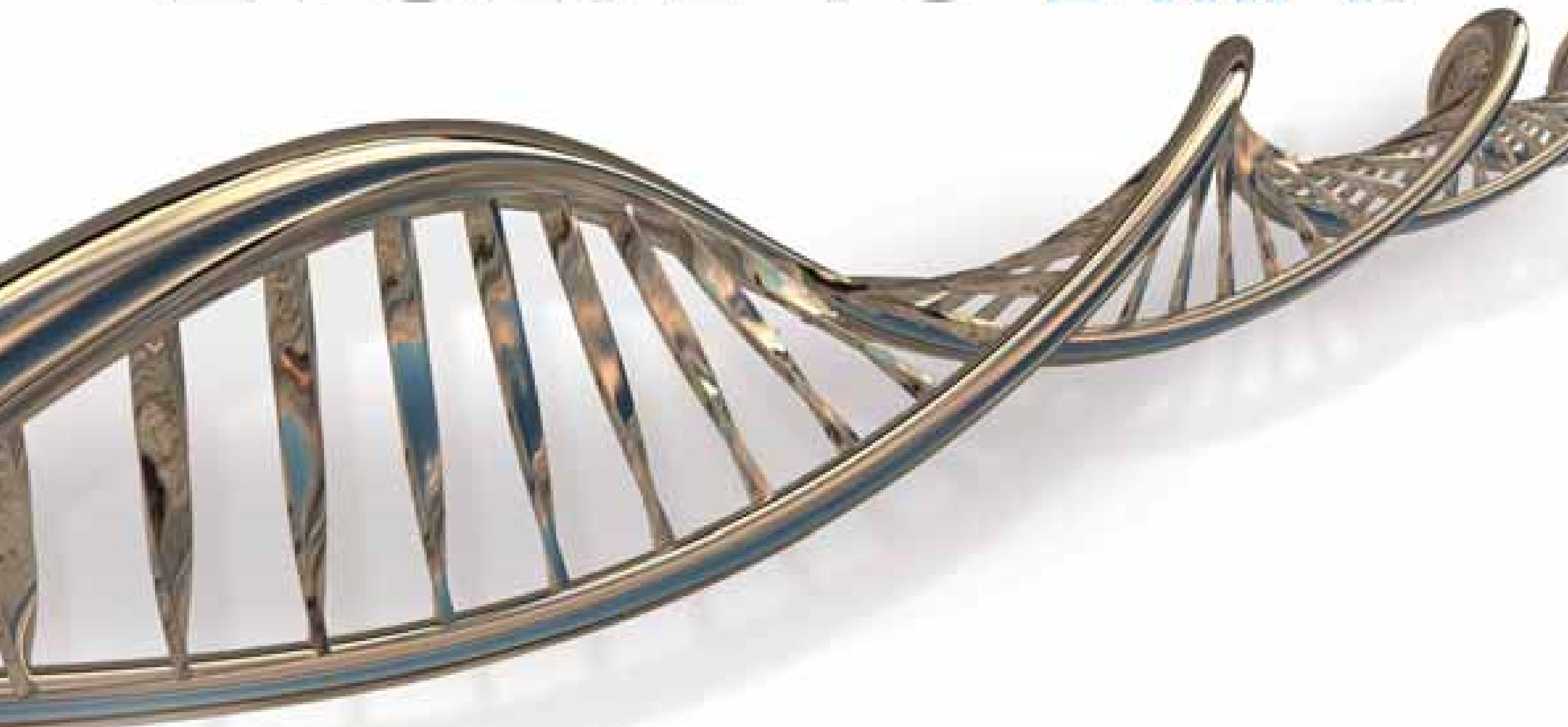

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Nick Pittarelli
"We passively create linear and triangular arbitrage opportunities through our DMA via our Autodealing Model, DMA is crucial."

to the fact that the protocol has developed at a reasonable pace and all of its various formats are backwards-compatible. "So from the very start of putting the APIs into use we have not had to change anything or modify the core architecture. Our trading style is quite vanilla, the only technical resource we compute for forecasting is depth of book globally. It's all about the prices as they are now, and can we do anything with them? There is hidden magic in the raw and executable quotes, and our entire operation is based on the DMA to these hosted venues. We built our own aggregation into the platform, which gives us the best of both worlds and is much of the magic behind the software."

While Pittarelli has put considerable effort into assuring that his system has as low latency as possible, he is also reliant on the liquidity venues he connects to being equally competent at reducing latency. "We have to do some minimal measurement on latency to compute the time it takes each venue to respond. If it consumes considerable time to receive an acknowledgement, it begins to eat into our profitability. Therefore, it is a case of marrying the best price with the latency computation integrated in the response time. We are pretty quick from our end, each order is sent out in microseconds but we have to provide some leeway to mitigate against any venue latency. The venues themselves with increased DMA traders will have to be able to handle an increasing number of bids and offers. We are quite capable of streaming a significant number of bids and offers, and we are just one entity using DMA. The numbers are mind-boggling as to how many quotes are going to these venues given the increase in this trading activity."

Self-build versus off-the-shelf

Pittarelli and the Rockshore team are in fairly rarefied company when it comes to building their own DMA system. So why exactly did they decide to go down the self-build route? "Some of it is the number-crunching background of the team and some of it is the desire to maintain proprietary methods and strategies from outside influences and in their confidential state. We knew that we could build something extremely fast and we wanted to make sure that if our competitor wanted a similar application, they could not acquire a duplicate off-the-shelf. The cost of the production was relatively equal to what we would have invested for an off-the-shelf system. With our own design and development, we kept confidentiality and secured ourselves as the only entity utilizing our aptitude for alpha. We have some modules that we are willing to white label and other applications that we build for customers from scratch. Our software entity in Rockshore Partners manages third party development, data center hosting and sales.

Despite these reasons, Pittarelli believes that the majority of FX participants will instead opt for an off-the-shelf DMA product. "But if a firm has deep pockets or is specifically looking at high frequency or proprietary trading, then the most effective approach is to build your own. Everyday there is a new programming language that purports to be better and faster. We are constantly investigating new technologies in low level programming. DMA provides the avenue to combine the features a

customer needs with fastest programming available, serving both the buy side customers and in the case of Rockshore, market efficiency as well.

Regardless of whether participants choose to buy or build, Pittarelli is clear that DMA will continue to grow in FX and it will have a key influence on how the market itself develops. "I think it will continue to open up and traditional brokers will reluctantly become increasingly passive in terms of the services that they provide, making it a parallel to the utilization of a prime broker for the retail environment and offer lower commission structures to institutional firms as well. In terms of off-the-shelf products I think there will be an accepted standard. We believe the market itself will become more efficient due to the competition in high frequency trading and open knowledge of DMA. Any companies that do not have the correct adaptive resources to operate in the combination of low latency and DMA market segment will realize substantial customer attrition to those service providers that offer a cost effective and responsive low latency framework."

Michael Markarian
"There are four clear benefits to DMA in FX – transparency, efficient execution, standardised pricing and anonymous trading."

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Benefits of DMA

Most of the providers of DMA services are in agreement when it comes to describing the benefits of DMA. According to Michael Markarian, president of Divisa Capital, a New Zealand based investment house and Currenex partner that offers Spot FX and Metal trading services, there are four clear benefits to DMA in FX – transparency, efficient execution, standardised pricing and anonymous trading. “The issue of transparency is resolved as the DMA broker is acting purely in an agency capacity. DMA orders are based on two variables – the price and the time the order is placed so the result is a far more efficient execution. DMA pricing is based on institutional standards of 1/10 of a PIP. And anonymity provides traders with a level playing field.”

John Miesner
“The advantage of DMA in FX is that enables clients to aggressively buy and sell but also passively bid and offer,”

“The advantage of DMA in FX is that it enables clients to aggressively buy and sell in addition to passively bidding and offering,” adds John Miesner, Head of Global Sales for Knight’s Hotspot FX platform. “They are not being subjected to a specific spread by one provider – it is about accessibility to a pool of liquidity.” In addition to the aforementioned advantages of anonymity and accessibility, Miesner also highlights the benefits of low latency execution and the provision of multiple order types such as market and limit orders. “Traditionally these have been important features for any FX trader however, the low latency demands have become more pronounced due to the influx of high frequency traders into the FX market.”

Regulatory perspectives

As with any new trading model, there is always the concern that changes to the regulatory environment will either render certain aspects redundant or add unhelpful complexity to the current market structure. Will the development of DMA be threatened or even enhanced by the arrival of new legislation? In the US the NFA is looking to regulate the retail FX market for those trading FX as an asset class while in the EU many of the principles associated with MiFID may be extended to cover the FX market. But perhaps most important will be the possibility of central clearing for some FX instruments, particularly swaps, says Lowry of Currenex.

“There are clearinghouses like CME and ICE saying that they will clear FX which in turn may make it possible for non-traditional DMA users such as institutional money managers to trade in the FX using anonymous or aggregated liquidity pools,” says Lowry. “On the one hand it will make clearing easier but on the other hand it will introduce the need for collateral management.”

Others, like Divisa Capital’s Markarian, hope that DMA users will benefit from the efficiency execution provided by the model when it comes to measures such as capital requirements. “We would hope to see the various regulatory bodies recognize and make concessions to firms that use the DMA model with regards to their capital position. There are already some regulators that have lowered capital requirements for DMA brokers since these firms do not act as the counterparty to their clients’ trades. These regulators recognize that this eliminates counterparty trading risk and the need for the increased net capital requirements (i.e. NFA minimum net capital is $20M USD). We also see a benefit with the transparency that DMA trading brings to the industry and hope this may usher in regulation standards around the world.”

In Europe the regulatory landscape has been dominated by MiFID, the EU directive which aims to harmonise Europe’s securities market and promotes best execution. If the same initiative is aimed at the FX market, says Hotspot FX’s Miesner, then the vast majority of buy-side firms – traditional asst managers as well as the hedge funds - will want to trade on a platform with multiple participants

rather than being subjected to single bank offerings with their limited pools of liquidity.

Transaction Cost Analysis

Such a development would also increase the demand for transaction cost analysis (TCA), a vital element in achieving best execution by showing the cost of each trade. These TCA services have become much in-demand in the equities market and we are starting to see the same in the FX space, says Miesner. "TCA is becoming more of a buzzword in FX although I'm not sure I've come across anyone who has successfully implemented a TCA offering Going forward it is going to be a big area of interest particularly for the traditional asset managers that require it. These traditional asset managers will most likely just be accessing one or two venues and those venues will have to provide TCA, however the biggest stumbling block is that there are only a handful of venues that publish their volumes. When this barrier is broken down, then it will be a lot easier for TCA to flourish in the FX market."

Despite the mature status of DMA in other asset classes, notably equities, Integral's Sandhu believes it is still in its relative infancy in terms of the FX market. "I don't think most people in the FX market even use the DMA term. Although the equities market is fragmented, most trading is done at the major order-book venues, of which there are a limited number. These exchanges or ECNs and they all have central order books.

They are generally homogenous in the way they offer execution. But in FX they are order books and OTC liquidity providers, lots of prices and lots of venues that are unregulated and all behave differently. It is DMA in an OTC world and to build an effective DMA tool you have to solve all of these issues. This is not to say that these equity-type services have not added something to the FX market but you cannot just transplant a service from one asset class into another."

Other major issues

One of the major issues with DMA in the equities market is its state of independence. One of the early heralded benefits of DMA was the fact that it offered a means to execution through an agency broker that bypassed the principal brokers. However when investment banks then offered their own DMA services or else bought out the independent providers, the waters were muddied somewhat as to what constitutes a true DMA service. According to Sandhu these same issues are now relevant in the FX market. "There are also those services that started off as a DMA provider – such as Currenex – that have now become venues in their own right with their own order book and their own liquidity pools rather than simply the plumbing to get to a host of independent sources. They are now competing with Reuters, Hotspot FX and EBS.

There are also banks now claiming that they are DMA providers, pretending to be agency brokers and offering to execute your orders. In an OTC market like FX, where there is no exchange, the banks are ultimately the primary sources of liquidity. It is not that the buy-side wants to avoid using the banks but they want to be able to access them all on an equal footing. Banks want their customers exclusively so they are offering DMA in the hope that some buy-side firms will just be looking to tick a box to say that they have a DMA tool without really knowing what a true DMA offering should be. As liquidity providers, banks won't act as facilitator of DMA services. In fact, it would be unreasonable to assume for liquidity providers to provide DMA that would facilitate their customers' best execution efforts. As far as I'm concerned you can either be a principal or an agent but you cannot be both and a DMA offering can only be so if it comes from an agent. All those banks offering DMA that are not agency brokers are misrepresenting their goals to customers."

Nevertheless Sandhu is confident that the evolution of DMA will bring with it complete transparency, truly aggregated pricing and clean trading and will become the normal means of execution for the interbank market at least. "This will mean that FX will start to look a lot like other asset classes and there will be three main participants – the banks; the agency service providers (true agency brokers); and customers who will learn to expect to be treated fairly."