



Illustration: Jonathan Jay Lee



David Polen,
Senior vice-president of hosted
product marketing, Fidessa

Fidessa's David Polen, shares his insights on DMA and how its many drivers including the drive for latency is changing who trades and how they trade.

DMA and the Buy-Side

Getting to the bottom of naked sponsorship and high-frequency trades.

FIX: What does the buy-side want from Direct Market Access (DMA)?

David Polen: There are two distinct market segments that use DMA - the human trader and the blackbox. I like to call this "Human DMA" and "High-frequency Trading (HFT) DMA".

With Human DMA, the extreme is a buy-side that has traders manually executing trades and looking at market data over the Internet; with HFT DMA, the extreme is a blackbox co-located at the exchange. One market segment is sub-millisecond and the other is more than tens of milliseconds - sometimes hundreds of milliseconds.

The human trader manually clicking around on a front-end is more interested in the full range of services a broker can provide

than he is in latency. Although speed is always important, he's keen on being able to access all his applications via one front-end versus having to go to different windows. He's looking for his broker to be a one-stop-shop, providing all the necessary services, such as algorithms and options and basket trading, in one easy and convenient bundle. He wants clean and compliant clearing and settlement.

The high-frequency trader is different. He has his own algorithms and smart order routers (SORs). He wants to get to the market as quickly as possible and needs credit and also memberships to the various execution venues.

FIX: What is the controversy around naked sponsorship for high-frequency traders?

DP: With naked sponsorship, the HFT is trading directly on the exchange, and the broker is only seeing the orders and trades afterwards. To help with this flow, exchanges have built in risk checks, so the broker can rely on the exchanges for pre-trade risk management.

To get a view across the exchanges, the broker consolidates the post-trade information through drops of the orders and trades. Although, the broker has a reasonably good view of the risk at all times, it can take as long as a minute to turn off a buy-side that has exceeded their pre-set risk parameters. This is often exaggerated into a doomsday scenario where a buy-side trades up to \$2 billion of stock in those 60 seconds, but that ignores the exchange's own controls which would not be set to \$2 billion. It is a lot more likely for a buy-side

to barely stay within its risk limits at each exchange, but exceed the overall allotted risk by multiples. Brokers need to have measurements in place to prevent that.

FIX: What are the key concerns with latency?

DP: The best way to lower latency is to get rid of as many message hops as possible. Co-locating at an exchange is obvious as it eliminates network hops. Although, co-location is important, it does come with infrastructure costs that not all high-frequency traders are willing to bear, for example, they may need to co-locate at each exchange.

Some buy-sides or brokers may co-locate at only one exchange and use that venue's network to access others. Co-location also depends on the buy-side's trading strategy. High-frequency traders need to understand where they want to trade. They can't think of the market as a montage when they're trying to achieve the lowest execution latency. There's no time to sew together the fragmented marketplace if you're also trying to be incredibly reactive to each and every exchange.

It's also important to focus on latency within each exchange. Shaving another 100 microseconds off your DMA solution may not matter much if you are hitting an exchange port that is using old hardware or if you are overloading a port at the exchange and not load-balancing to another port. You also have to be aware of the protocol you are using: some exchanges have created legacy FIX sessions that are wrappers around internal technology and can be quite slow converters.

They are now creating "next generation" API's that are native FIX and much faster, but these sessions may only offer a subset of available messages, so you have to consider routers that send the legit subset down the fast FIX pipe.

FIX: Outside latency, what are the main drivers for DMA?

DP: Buy-sides like to have a single FIX session for all of their services: global, high-touch, baskets, options, DMA and algorithms. Having multiple connections for multiple services is inconvenient. It costs more money and is cumbersome for the buy-side trader. Also, for the sell-side, it is harder to have a single risk control around the client's business. Risk management is all about consolidation. Of course, the lower the latency a buy-side wants, the more they will support multiple FIX sessions. So a broker should support multi-asset class, multiple lines of business globally. They should present a single simple interface to the buy-side for risk, order entry, allocation and (where possible) clearing.

FIX: How do you put all of this into a low latency FIX connection?

DP: The architecture is reasonably straightforward. You build the fastest FIX router/gateway and you put a framework inline that checks for risk, locates and compliance. This means that your FIX gateway also has to be hooked up to real-time global market data. Asynchronously, you copy the data to an order management system (OMS) for advanced post-trade features. Then you start building features off the back of it, including algorithms and smart order routing (SOR).

FIX: So it is all about low latency?

DP: Absolutely not. That's just one category of buy-sides. As previously mentioned, there are a huge number of buy-sides that have taken on the trading function themselves. They have hired sell-side traders, or decided they can trade themselves, and are using DMA tools, like our EMS application, to watch the Level II data and hit the market. Again, the issue is centralization.

Typically, these tools have their own risk checks that the broker can

control. But what if the broker's clients use an array of these tools? Regardless of the tool the buy-side is using to enter these orders, DMA allows them to centralize all the order flow and run it over their risk and compliance checks before the orders go to market. Fidessa's DMA capability is also integrated with our OMS, so these trades go to the back-office and show up on regulatory reports and on more than 100 compliance reports.

FIX: What should a broker entering this game focus on?

DP: The key point is to understand what market segment you are after and what your differentiators are. If you are a regional market maker with strong research, then you have loyal buy-side firms who will look to use your services. They will keep trading through you to gain your research. If you can offer them DMA, that's just one more service they don't have to go to a Tier-1 broker for.

But to get into the high-frequency trading space, you need a stronger differentiator - perhaps a ton of stock to lend so the buy-sides can sell short. Obviously, prime brokers are already in this space. Either way, pricing is critical, and the maker/taker model in the US means that brokers have to get to top-tier on volume traded on the exchanges as quickly as possible.

The goal for new brokers is to be top-tier in rebates and costs and have an internal dark pool as part of the SOR for internalization efficiencies. But there are always functional differentiators. There may be clients who are willing to send flow for specialized functionality - perhaps the calculation of commission on each notice of execution (NOE). Or maybe they want the ability to let them allocate their own blocks. You have to understand what your client wants and tailor your offering accordingly.

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