



Implementing Direct Market Access (DMA) Trading in Japan

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Although Direct Market Access (DMA) trading is not a new concept, it is enjoying a resurgence in popularity and beginning to “find its feet” in Japan. DMA order routing is gaining ground as an additional tool alongside the more traditional FIX sales-trader (ST) managed order flow.

Background

FIX trading has long given the buy-side trader advantages over the standard telephone call into a sell-side broker. By utilising FIX, the buy-side trader has the benefit of seeing real-time executions on her order management system, giving her more transparency and control over the whole trading process.

Benefits also exist for the sell-side firm which include greater capacity for taking orders and, more importantly, less risk of errors during this stage of the trading process.

For both parties there is implicitly a reduction in the cost per trade by increasing efficiency and freeing up time that would have been used for execution confirmation.

A logical extension to FIX broker intervention trading is FIX DMA trading. By automating the acceptance process of FIX orders and other intermediary/downstream steps, it provides the active buy-side trader with the ability to reach the market floor for near-instant execution.

The advocates for DMA have been members of the hedge fund community. With their active trading style and a need to have rapid executions to capitalise on shifts in market conditions, FIX was adopted and even faster DMA execution sought after.

Why use DMA?

“By placing actual exchange trading capability in the hands of the buy-side trader, does that remove the need for a sell-side sales trader (ST)?” In a word – “No.”

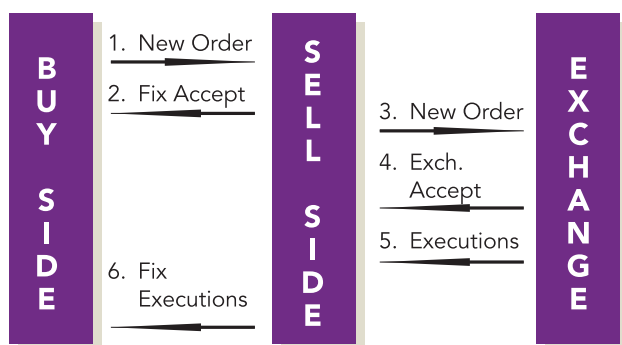
While a buy-side trader will keep some orders to trade herself, reasons still exist for them to distribute orders amongst sell-side firms. Some of the most important reasons include the execution of large block trades, illiquid names and the sourcing of natural crosses which rely on the sell-side broker. The actual use of DMA versus ST managed order flow differs from firm to firm, however the trend has increasingly been for smaller order size but higher frequency trades to be traded on DMA systems.

How does DMA differ from ST managed FIX orders?

Some sell-side institutions implement DMA by automating the processes managed by an ST and leaving the fundamental FIX flow unchanged. Steps 2 and 3 in the

diagram below will be provided by a system/process. By utilising existing infrastructure, sell-side firms are able to quickly provide DMA capability to clients.

Sales Trader Managed Flow



Benefits

This method does not require a new FIX architecture and is possible to implement on existing ST managed FIX system. It should also allow buy side firms to co-mingle DMA orders with ST managed orders.

Costs

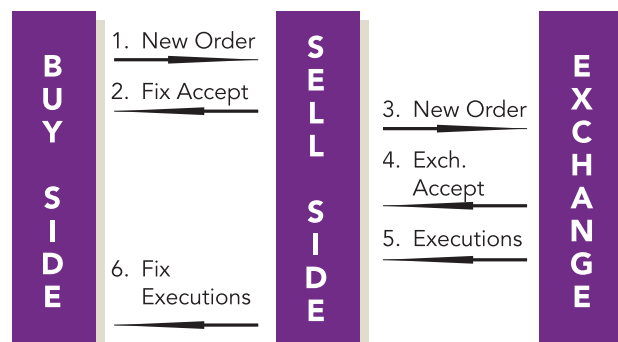
The order accepting process by the broker must provide “sanity” checking before sending the FIX “Accept” back to the client. Without this check, conditions can arise where the state of an order, as perceived by the client and by the broker can become inconsistent. For example, it is possible that an order which is accepted by the broker to be then rejected by the exchange. E.g. An order where the limit price is outside the stock’s possible daily trading range.

As such, in order to provide DMA to clients using this method of implementation, validation of some of the exchange’s rules must be implemented by the broker systems.

Optimised DMA flow

Another possible structure that can be implemented by sell-side firms includes changing the fundamental FIX flow architecture. In this model, orders are received by the broker who immediately sends the order to the exchange. A certain amount of checking must still exist at the broker as per legal requirements; however, some will also be implicitly provided by the exchange. The order is received and processed by the exchange and the results (Accept or Reject) are sent back to the client.

Optimised DMA Flow



Benefits

Adopting this method should allow orders to arrive at the exchange more quickly than automated ST flow, and hence enter the queue at the exchange in a more timely manner. By utilising this method of DMA, it is also possible to remove potentially dangerous situations where the client and broker/exchange have conflicting states of an order.

Costs

As the “Accepts” will not be provided by the broker before sending to the exchange, FIX “Accept” messages will seemingly be returned back to the client in a slower fashion than the “pre-accept” method. This in no way means that the order is slower in reaching the exchange but may be a concern to the buy side client unaware of the system differences. In reality, the “Accept” that returns back in this method is a somewhat “purer” DMA flow and similar to the experiences that a sell side ST would face.

Considerations for implementing DMA in Japan?

In implementing a DMA solution, the following items should be jointly considered by both the buy- and sell-side firm: connectivity, risk, education and post -execution.

Connectivity

Network Topology is paramount in order to allow DMA to be viable. When choosing between various network solutions, whether a point-to-point leased line or hub based vendor, the following requirements must exist and be sufficient to allow the buy-side trader to take advantage of any perceived market conditions.

- **High throughput** – This will determine the number of orders that can be sent simultaneously/sequentially

as well as the executions that are returned. If required bandwidth for order flow and its executions exceed capacity of the network itself, naturally it follows that performance and speed to market will face delays.

- **Low latency** – This will determine the delay with which a single order placed by the buy side trader will arrive at the sell side brokers system. It is interrelated with throughput, as line capacity is exceeded latency will increase.
- **Network resiliency** – As DMA trades are managed by the buy side firm, STs may have only a limited ability to aid in the event of a system outage. Indeed, in some cases STs are not able to see DMA flow at all. As such, network outages will affect the buy-side trader's ability to send new orders as well as correct and cancel outstanding orders. Care and consideration should be given to the trade-off between the amount of network redundancy and acceptable risk when choosing a network solution.

Additionally, consideration should also be given as to whether a FIX connection will be shared for both DMA and ST managed flow, and requirements in network bandwidth should reflect this. If ST managed order flow and DMA order flow is to be co-mingled on the same FIX connection, sell-side firms have several methods to distinguish between them. Such methods include the use of Target SubID, Handling Instruction (tag 21), etc.

Concrete rules of engagement regarding the use certain fields, which may or may not be applicable to DMA trading, must be decided. Eg. Use of Execution Instructions, Text, etc.

Risk

As a minimum, the following checks must be implemented at the sell side firm.

- Order value
- Compliance checks
- Price range checks
- Credit checks

Ideally both the buy side and sell-side would also implement some of these rules to provide an extra layer of protection from inadvertent mistakes.

Educational process

As the whole trading process is placed upon the buy-side

trader, it is important for the broker to provide understanding of the sell-side trading process which has up until this point been managed for the buy-side. As such, knowledge of exchange specific rules must be learned. These rules include:

- Short sell up-tick rules
- The exchange open / close auction process
- Exchange order queuing process
- Rules for correction of quantity, limit price etc.

Booking

At the time of writing, average price booking for domestic Japanese accounts is currently being implemented and the vast majority of domestic accounts still seem to adhere to the more common line-by-line booking. A buy-side trader may place hundreds of DMA trades possibly to be allocated across several accounts. If post trade allocation is used, this can pose significant difficulties at time of booking as each execution must be allocated to a specific account. The simplest solution to aid the booking process for both buy and sell-side firms is to implement pre-trade allocated orders where one order and its executions are allocated to one account. The booking process is greatly simplified and automation can also be implemented to achieve greater efficiencies.

Post-trade allocated booking tends to be more prevalent for offshore entities that are capable of using average price booking and do not have to allocate specific executions to individual accounts.

Conclusion

By providing DMA, the sell-side community can reduce the cost to trade, increase transparency and also more fully integrate the buy-side into the trading process which in turn will help lead us towards the desired goal of complete STP from front to back.

As DMA trading becomes more prevalent in Japan, so we will expect to see a consolidation of unique DMA specifications amongst both buy- and sell-side firms in much the same way as we have seen for Sales Trader managed FIX orders. DMA will revolutionise the buy side in much the same way that broker intervention FIX did for the sell side just a few years before it. **FIX**