



Capital Markets

MindTree Consulting Ltd.

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Speed v/s intelligence dilemma in building order management system

By Dr. Ashok Hegde

Building an order management system for the purpose of trading is a task easier said than done. One needs to conceptualise how an order gets captured, how it is validated, and how it ought to be sent to the execution venue. In most cases, a java front end, a core processing engine with three-tier architecture, and a quality database would be sufficient to build and deploy such a system. But the key question on which industry players spend millions every year to find an answer to is – how do we create an order management system that will drive competitive advantage? As of now, the industry has stopped at the level of creating an annual event that recognizes those who have spent the most to achieve quicker execution!

Over the years, the method of placing an order at the exchange has been radically redefined by taking advantage of technology advancement and availability. In addition, to reduce process bottlenecks, investment banks have often installed the front end of the order management system at the Asset Manager's cabin – thereby making manual order ticket generation redundant. Faster computing and processing systems fuelled the ambition of investment bankers as well as that of IT managers to aspire for quicker order execution, fractions of milliseconds faster than their nearest competitor. In a world where access to information is of principal importance, the ability to execute orders quickly when information becomes available decides who will exit the party before it gets over and the bill arrives. In that context, latency of a system is viewed as paramount.

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If you flip through magazines read by Wall Street veterans you might notice that many products advertise that they are faster (but not necessarily more intelligent) than their competitors. However, I have never come across an advertisement that proclaims more intelligence rather than improved speed. Even if they are more intelligent, it is always faster execution capability which is highlighted.

The reason for the aggressive pursuit of quicker execution has its root in the structural framework of the 'market place' itself. Markets, except in few emerging nations like India, are defined on price and time priority. The rule to execute an order from the exchange perspective has always been based on price and time. In India and in a few other emerging markets it is further complicated by the introduction of client or professional (proprietary) dimensions. An order placed by a broker on behalf of his/her client takes precedence over the professional or proprietary order. The unanimous conclusion of players the world over is that it is the time taken to reach the execution venue that decides the winner and loser. As always, the winner is declared on arrival by stamping by an exchange or ECN system. Though connectivity into the exchange is well established and stable, the same cannot be said of ECNs. Venues such as OTCs have added complexities due to the structural difference in the way a deal is processed and closed.

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exchange, what is increasingly being forgotten is the need for tighter coupling of order management systems to decision support systems such as analytical systems. Though this initiative has the risk of slowing down the process of shooting an order, better insight into markets will certainly reduce the chances of loss. Taking this logic further in this scenario, insights into market depth becomes a necessary condition rather than a nice-to-have function. Market risk calculation is often considered a middle office function, which in my opinion has a serious limitation. It is my belief that an order management system should have the following functionalities in addition to their ability to provide insight into market depth and possible price impact:

1. Latency – Speed at which an order gets routed has always been an elemental consideration in an order management system and will continue to be so for years to come
 2. Flexibility – How easy or difficult is it to add new instruments or feed price into the system, in addition to the ability to change the processes or rules governing order validation and routing
 3. Analytics – Ability to provide insights into trend, market depth, best possible execution venue, cost of execution, spread, and spread impact
 4. Integration with decision support systems – how the system has been designed to interface with decision support systems
- Providing easy integration to back office functionality and certain middle office processes such as trade message flow, allocation, trade enrichment, and reconciliation

Though achieving speed and functionality will offer significant advantages to an investment bank, a relook into how an order management system needs to be perceived and built may help increase competitive advantage. For gaining competitive edge, the order management application will need to offer the best possible combination of all of the above. It is imperative that the solution be based on a deep understanding of the securities trading process from the front, middle, and back office. A critical success factor for any successful order management system is how quickly it provides depth of insight into market dynamics and moving tickers.

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