The OMS as an Algorithmic Trading Platform: *Five Critical Business and Technical Considerations*

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As algorithmic trading emerged as a must-have in the active trader’s arsenal, many buy-side asset management firms became convinced that an execution management system (EMS) was equally essential. An order management system (OMS), the reasoning went, was critical for core trade blotter, portfolio accounting, and compliance functionality. But to handle the escalating transaction speed and order-fill volumes generated by algos, as well as the increasing fragmentation of liquidity in the market, a firm needed a lean and powerful dedicated system whose sole raison d’être was getting orders to and from the market quickly. As recently as 2006, an EMS was considered “the only way to go” for serious algorithmic trading.

In some circles, that’s still the conventional wisdom. But the wisdom lags the reality. OMS technology has evolved significantly in recent years, and the leading systems have made quantum strides in speed, scalability, and overall performance. Today, the OMS continues to function as the hub of the trading desk while also providing a truly robust algorithmic trading platform. In fact, today’s most advanced OMSs incorporate a wide selection of algorithmic strategies from multiple providers.

In many cases, the algo capabilities integrated into a comprehensive OMS may reduce the number of applications a trading desk must use to get orders effectively to the market. Specifically, the tight integration of algorithmic strategies may allow firms to reevaluate the need for an EMS, depending on their trading styles. And using the OMS for algorithmic trading overcomes the integration, workflow, and latency issues that often arise between the OMS and EMS.

Whether an OMS can serve as a firm’s sole algorithmic trading system depends on a number of business and technical considerations, including the type of firm (traditional or alternative), the trading style, the algorithms the firm needs, the brokers with whom it does business, and the desired trading venues. This article is intended to set forth some of the key considerations and criteria for making an informed decision about the feasibility of using an OMS for algorithmic trading.

EMS VERSUS OMS: KEY DIFFERENCES

EMSs emerged as a result of the increasing speed, size, and complexity of the trading environment. The concept of separating the execution function from order management caught on particularly with hedge fund managers and other very active traders. It appealed to market participants pursuing sophisticated strategies and using such tools as algorithms and dark pools to parcel and time large trades to manage their market impact. Deploying algorithmic trades requires an ample amount
of processing power that, until recently, was beyond the traditional capability of an OMS. The stand-alone EMS meets the needs of traders who want direct market access (DMA), enabling traders to drive trades to any “floor” of their choosing. EMSs also accommodate users with a high volume of intraday trading into and out of positions, as well as technical indicator trading that depends on rapid assimilation of real-time market data to drive trades.

The OMS, in contrast, serves as the hub of a trading operation, allowing a firm to centralize operations and bridge the gap between the trading process and its comprehensive investment workflow. On a single, central platform, traders can exchange information with the portfolio accounting system, receive investment decisions from portfolio managers, plot and stage orders on the trade blotter, access liquidity directly, and communicate orders to multiple liquidity destinations through industry-standard FIX messaging.

Unlike an EMS, which is wholly dedicated to execution, the OMS also enables the trader to allocate trades among portfolios, then efficiently and easily communicate post-trade information to the back-office and settlement systems. Today’s most advanced systems also incorporate pre- and post-trade rules checking and portfolio composition monitoring for compliance. And OMSs are becoming increasingly sophisticated in their portfolio modeling and construction capabilities. These are features that the EMS lacks, and firms that have tried the “EMS-only” route have run up against its limitations.

The delivery of EMS capabilities can be problematic as well. The EMS is often provided by a broker with a vested interest in receiving order flow, which essentially locks in the trading relationship with that broker and the algorithms it provides. Firms that work with multiple brokers or want access to different algorithms will often need more than one EMS. In contrast, an OMS allows access to multiple brokers of a firm’s choosing, utilizing the industry-standard FIX protocol. And while some broker-dealers have gotten into the business of providing OMS capabilities to buy-side firms, most systems on the market are broker-neutral.

OMS AND EMS INTEGRATION

A majority of firms that use an EMS also have an OMS, but the integration between the two is often a challenge. The lag time between trading decision and execution can mean lost opportunities in a market that moves by the millisecond. In addition, if an EMS is not fully synchronized with the portfolio accounting system, compliance checks, and post-trade processing, it raises the risk of disruptions throughout the entire investment management process. An OMS, as the hub of the trading desk, provides a solid platform for ensuring that trades are moved effectively through the firm’s workflow, reducing the risk of errors and delays that impede the process.

These integration issues would suggest an opportunity for an all-in-one solution that combines the comprehensive and flexible capabilities of the OMS with the EMS’s processing power for complex trading strategies, seamlessly integrating portfolio construction with algorithmic execution. Given the broad scope of the OMS, compared to the narrowly defined role of the EMS, such a solution is more likely to come from the OMS side than the EMS. Indeed, judging from the capabilities of today’s most advanced OMSs, that transition is already underway.

FIVE CRITICAL CONSIDERATIONS

When comparing an OMS to an EMS—or to competing OMSs—for purposes of algorithmic trading, there are five key criteria to consider from both a business and a technical perspective.

Unification and Integration

An advanced OMS unifies trading and non-trading functions within a firm while connecting with the universe of outside liquidity and algorithm providers. By integrating algorithms and algorithmic trading capabilities directly into the OMS, a firm achieves a seamless, end-to-end trading workflow. Through a single system, portfolio managers and traders have access to portfolio-level data and built-in modeling capabilities for decision making and order generation, combined with the ability to move those orders rapidly into the marketplace using algorithmic strategies. This eliminates latency issues, reduces the risk of errors, and positions the firm to respond instantly as opportunities occur or market circumstances warrant.

From a technology perspective, the OMS should be able to “talk” directly to the portfolio management system, whereas the EMS needs a “translator.” Direct integration is critical to ensure that the trading desk has a full picture of not only position information but also portfolio-level detail.
The consolidation of position and portfolio information, which is effectively achieved within the OMS, is essential to the investment and trading process. Robust portfolio construction and modeling capabilities—lacking in EMSs—enable the portfolio manager to play an integral role in the trading process from inception, resulting in trade execution that is consistent with the investment strategy.

Adaptability

An OMS should give a firm the ability to use multiple algorithms from several vendors in a single platform, without the disruption of having to learn a new application. By providing access to several algorithmic strategies, an OMS eliminates the need for multiple EMS installations to connect with multiple algo providers. The broker-neutral stance of many OMSs also enables greater flexibility to add new algorithmic trading providers as a firm’s needs evolve.

The more advanced systems on the market today are built on a flexible architecture that allows users to customize the manner in which they receive or transmit data via the FIX connection using “tag mapping”—the matching of data fields between the OMS and the FIX interface. With this advancement a firm can adapt its system to its needs “on the fly” without waiting for the vendor to perform an upgrade. The flexible architecture within an OMS also allows for the addition of new algorithmic trading strategies that plug into existing architecture with little effort and immediate availability.

Speed

The market moves at unprecedented speed today, and firms that can’t keep up will be left behind. Using a fully integrated OMS as an algorithmic trading platform eliminates time-wasting steps and speeds the process from idea to execution, moving orders from the portfolio manager to the markets on a single platform.

The OMS also provides a robust platform for managing the resultant fills back into the investment process and moving transactions quickly through post-trade settlement and reconciliation. OMS architecture has advanced considerably and is no longer the bottleneck to speed and volume that it once was. The most advanced OMSs provide a high-speed memory and relational database architecture to manage the influx of data from trading operations. These systems are built to allow a firm choice and control in implementing the best hardware to meet its need for speed while strengthening the critical backbone of the investment process.

Moreover, because the plug-in architecture of many OMSs allows for rapid integration of new algs or maintenance of existing ones by the OMS provider, it eliminates the time spent evaluating additional EMS vendors for each new algo and allows the trading desk quick access to the newest strategies available.

Scale

Traders today face a widening array of choices of destinations for their orders. With a broker-neutral algorithmic trading platform, traders have no need to limit the counterparties with whom they do business. They can make any connections they want through a single platform, as opposed to multiple applications on the trading desk.

In today’s advanced OMSs, a relational database platform provides the scalability to accommodate ever-increasing trade volume. As noted earlier, a plug-in architecture allows for the ongoing, virtually unlimited addition of new algorithmic strategies. A single, scalable, comprehensive OMS reduces the number of systems necessary to support a variety of trading tools.

An OMS also streamlines the management of the hundreds or even thousands of fills that each algorithmic trade can generate. An EMS has to process fills internally and then transmit them to the OMS, effectively doubling the processing volume. With the OMS serving as the algo platform and linked directly to the trading venues, that step is eliminated.

Architecture

An advanced OMS has a flexible architecture that enables firms to continually add algorithms, dark pool providers, trading destinations, and other trading tools as they become critical to the trader. With the right architecture, new algorithms can be integrated into an existing system from a single provider, without having to wait for a new release or acquire new systems. And the installation can be customized to provide users with strategies only from firms they choose.

A flexible architecture will also deliver benefits that extend beyond the OMS and the trading function itself. It allows the OMS to work as part of a cohesive investment
process, integrated seamlessly with the other critical functions of the firm, chiefly portfolio accounting, compliance, and post-trade reconciliation.

**AN INTEGRATED, BROKER-NEUTRAL, SINGLE-PLATFORM SOLUTION**

Does all this mean that the EMS is headed for obsolescence, and the OMS can replace it in all cases? That's not likely in the near term. The EMS serves a vital role for very active traders pursuing complex strategies, notably hedge fund managers and traders engaged in arbitrage, and quantitative strategies. A majority of traditional asset management firms, however, should take a close look at the algorithmic trading capabilities of today's OMSs relative to their workflow needs, and carefully consider whether they need to add or keep an EMS.

Beyond looking at the products, firms should also take a close look at the providers. Does the company behind the system have a track record of technological innovation? Does it have a clear understanding of the firm's operational needs and trading workflow? Does it have the resources and expertise to provide ongoing support? Does it have a clear roadmap for the future of its OMS? And is it willing and able to reinvest continually in trading workflow and system enhancements to keep pace with a changing trading environment?

Execution management systems certainly have a place in today's richly varied investment landscape. Today's leading OMS providers, however, can deliver a fully integrated, onsite, broker-neutral trading platform, with built-in algorithms, portfolio modeling capabilities, a flexible and scalable architecture, and FIX-based connectivity to critical liquidity sources, from sell-side desks to dark pools. For many firms seeking to reduce the tools on their desks without compromising their trading capability, that may be just the algorithmic ticket.

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