Liquidity Management Systems: Their Place in Today's Trading Infrastructure Trio

Occasionally confused with a controller's cash management system, liquidity management systems (LMSes) have quickly emerged from infancy to near-adulthood status.

The term was first designated by name in a December 2006 Tabb Group research report, Liquidity Management: Pushing Automated Trading beyond Agency Brokerage, which focused on the need for a comprehensive strategy to manage liquidity. Although order management systems (OMSes) and execution management systems (EMSes) are key electronic trading process components, they did not address how brokers interacted with order flow, sell-side traders decided to leverage capital or firms developed consistent valuation and trading strategies across non-exchange traded products.

Needed was an LMS, which Tabb Group defined as the methodology surrounding how firms automate their trading desk, including the rules around valuation and pricing liquidity, the handling of customer order flow, the matching of internal liquidity and the automated rules and methodologies around provision of capital for internal market making and proprietary trading.

As many firms have come to realize, Tabb Group believed that liquidity management would be the next phase of electronic trading, once customer flow and order-flow tools were adopted. As execution strategies continued to grow ever more complex, execution paths and smart order routing for products that firms wanted to automate within an asset class, such as foreign exchange (FX), equity swaps or sovereign debt, would need to be centralized. As more firms analyzed the impact of one asset product against another and began to trade the capital structure or the global macro-interest rate environment, it would be necessary to view the interplay among currencies, interest rates, credit ratings, credit default pricing, corporate debt, sovereign debt, equities and their derivatives. Liquidity management provides that view.

Already deployed by a number of U.S. and European banks, broker-dealers, ECNs and asset managers, others now ask how you position an LMS versus an OMS, EMS and complex event processing (CEP).

With LMS, OMS, EMS or CEP, pertinent is the architecture deployed and implemented to automate trading activities, be it liquidity aggregation, smart order routing, internal crossing, building dark pools and connecting to multiple execution venues, regardless of whether your firm trades cash equities, FX, fixed income, futures, derivatives, commodities or other asset classes on a single, multi- or cross-asset basis.

Excluding post-trade, there are three large separate jobs to address when designing a trading infrastructure:

• Generation of the trading instruction, whether quote(s) or order(s)

• Management of the execution strategy of trading instruction(s)

• Connectivity to the internal/external venues where the instruction(s) can be executed

The first requires powerful calculation processes to compute output data, including buy/sell, quantity, price, skewing level of a quote and credit limit, from a vast set of input data, e.g. market depths, price levels, historical and real-time time series of prices, volumes, trends, market impacts, P/L,

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open risk, credit limit, inventories, etc. These are complex event-driven processes and CEP does them efficiently.

The second addresses execution strategy of the trading instruction—the LMS part. During its entire lifecycle, it orchestrates the execution strategy of the instruction among internal and external venues according to pre-defined rules. It is a "stateful" process, not an "event-driven process," and it respects the interaction and priority of execution among these venues and guarantees fault tolerance of the entire state-management process.

The third concerns connectors for market data and trading, to "talk" to venues. Apart from the resilience of FIX sessions when used, these connectors are stateless. They know what instructions they have to bring to the venue, not the entire picture of the lifecycles of the primary- and derived-trading instructions. Connectors are mandatory. If there is no connector, there is no deal.

Taking infrastructure a step further, within a same firm, several LMS systems can be inter-connected to manage multi-leg instructions and handle geographical load balance to achieve better speed-of-execution.

Fifteen years ago, hiring the best high-touch traders was the rule. In the years ahead, perhaps the key to a successful execution strategy will lie in being able to deploy flexible, scalable infrastructures that comply with changing asset classes; support evolutionary trading patterns; maximize the extraction of value from the flows while supporting constantly improving rules to generate quotes and orders; and orchestrating the state management of trading executions among multiple internal or external, dark or transparent pools.

Perhaps the first next evolutionary step for LMS is the discussion concerning the differentiation of a CEP, EMS and LMS, the trading infrastructure trio providing firms three new opportunities to cross, assemble and optimize various order flows where profits and margins can be better controlled while volumes being managed can grow securely.

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