

VIEWPOINTS

A Charles River Conversation

Evolution of the Smart OEMS

USING ANALYTICS TO MAKE MORE INFORMED TRADING DECISIONS



A State Street Company

THE CONVERGENCE OF BUY-SIDE ORDER AND EXECUTION MANAGEMENT SYSTEMS (OEMS)

enables firms to collect and aggregate large volumes of trade, price and counterparty data. A new generation of innovative financial technology applications embedded in the OEMS is leveraging that data to provide traders with actionable, real-time information to identify investment opportunities, analyze counterparty exposures, and collaborate more effectively with portfolio managers.

Charles River recently spoke with product specialists Alun Cutler and Vidya Guruju to explore the transformation of the OEMS into a decision support platform for investment managers.



ALUN CUTLER

Director, EMEA Product Management

Alun identifies product enhancements, 3rd party solutions and market drivers. Previously, Alun was a senior business consultant for Charles River, responsible for meeting EMEA client requirements and assisting implementation consultants with workflow design and integration needs. Prior to joining Charles River, Alun held sales and consultant positions at Misys and SunGard Data Systems, served as a fund administrator for Morgan Grenfell

AC Asset Management, and was a derivatives trader at the Nippon Credit Bank.



VIDYA GURUJU

Senior Product Manager

Vidya is responsible for managing and enhancing Charles River's Fixed Income Trading functionality, and prioritizes the product enhancement roadmap by tracking industry developments and gathering feedback from clients. Prior to joining Charles River, Vidya was Director of Product Management at SunGard and Director of Professional Services at Cortera. Vidya has an MBA with a concentration in finance from Babson College and a Bachelor

VG of Engineering in Computer Science, and is a CFA charter holder.

Buy-side trading desks have undergone significant headcount reductions. How is technology helping investment firms mitigate the impact of downsizing?

VG Technology itself played a huge role in buy-side firms being able to justify downsizing. Things that a trader had to do manually, whether by picking up the phone or going to different terminals to gather different market levels, can all be automated these days. The job description of today's trader has a heavy mention of technology.

For technology vendors, being able to provide the right data to traders without requiring them to pick up the phone or access multiple terminals is mandatory. Then, layering a level of analysis on top of it and proposing, ranking and recommending different strategies to the trader has made the transformation a reality. Traders can focus on complex high-touch trades and let automation take care of the low-touch ones.

The growing availability of OEMS technology means buy-side firms are no longer limited to having a separate OMS and EMS. Leveraging the synergies between the OMS and EMS makes compelling sense.

Investment managers are increasingly replacing legacy OMS and disparate, asset class-specific EMS systems with a single, integrated order-and-execution management system or an OEMS. What's driving that?

VG In the past, buy-side firms had to get an OMS and a separate EMS from a different vendor, then stitch them together because they were limited by what the technology had to offer. That worked okay when the life cycle of an order was very sequential.

Now, most firms have much more complicated workflows. On the fixed income side, due to liquidity constraints, the PM and the trader have to decide how best to fill the order under current market conditions. On the equity side, they have to choose which algo to apply to a particular order. So, there is a lot of order amendment happening after the order hits the desk these days. That's just not possible for firms deploying a separate OMS and EMS.

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The OEMS proves its value in another growth area we're seeing, namely multi-asset products. Managing those products entails that the portfolio manager sends packages of trades down to the trading desk. Those trades can't be bifurcated into different EMSs, because this introduces a trading risk and potentially loss of revenue due to different pricing. Firms need to package these transactions together and manage them as a single unit. If one order runs ahead of the other and the markets move, firms have unwanted exposure.

Another driver is the extensibility of OEMS platforms. Rather than traders accessing different terminals, the OEMS aggregates pertinent and actionable information and displays it in an intuitive manner, enabling traders to make timelier and better informed trading decisions.

The OEMS also provides an historical database of trades, orders, counterparties and other relevant statistics. How are firms leveraging these new volumes of data?

AC The launch of MiFID II requires firms to capture a vast quantity of data. They have to be able to demonstrate best execution across all asset classes, which requires capturing huge quantities of real-time data. That data in its own right adds significant value for the firm because they've now got the transparency they didn't have before. Firms that can leverage this information to improve their risk management and alpha generation opportunities will be well positioned against their competitors.

For example, a fixed income trader can instantly determine where and when they last traded a particular name. What counterparties have an interest in that bond, what brokers specialize in that sector, what size have they executed in the past? All of this critical information is now readily available to the desk.

Firms can now give data-driven feedback to their brokers -- what areas they're good at and what areas they need to improve on to retain the firm's business. Having all that data harvested and stored in one location is a definite benefit.

VG The key here is the buy-side firm's relationship with the broker, which is unique to that firm. The firm could have all kinds of market data, market levels, market intelligence, but that may not be the same level that they would get when they execute the trade. They may get better. Being able to marry a firm's own trade history with what they're seeing in the market is key to demonstrating best execution.

Traders are able to evaluate a broker in the context of the instrument that they're trading, understand which broker gave them the better deal than the market level last time, or determine whether a broker does well at these kinds of order sizes. Traders privy to that intelligence before they pick up the phone and call their broker are far better positioned.

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How do trade analytics in the OEMS help improve trader productivity?

AC Trade analytics are key to differentiating high-touch from low-touch orders. Analytics can determine an order's market impact, which algo to deploy under current market conditions, and which venue to route the order to.

Even with high touch orders, analytics can inform the trader on when to start executing, how aggressively to execute, whether to use limit or market orders, and a number of other data-driven recommendations. Essentially, analytics are making traders more productive and better informed.

How are trade analytics supporting closer collaboration between traders and portfolio managers in this downsized environment?

VG Especially on those high-touch trades, we see more discussion happening between the PM and the traders. On the fixed income side for example, more and more traders and PMs are embracing the concept of generics trading, where a PM sends down an order listing the characteristics that he or she is trying to get exposure to, and the trader then figures out how best to fill it based on market conditions.

The trader and PM then discuss and decide on the best course of action. This type of workflow requires analysis to be done on the market data, matching it up with the order you have on the blotter, and being able to say how best each of these different options match up. It's not easy to just rank them. Being able to capture the discussion between the PM and the trader within the system for audit tracking is key. This can't be done without technology and that's where analytics play a strong role, especially in high-touch trades.

BEING ABLE TO CAPTURE THE DISCUSSION BETWEEN THE PM AND THE TRADER WITHIN THE SYSTEM FOR AUDIT TRACKING IS KEY. THIS CAN'T BE DONE WITHOUT TECHNOLOGY AND THAT'S WHERE ANALYTICS PLAY A STRONG ROLE, ESPECIALLY IN HIGH-TOUCH TRADES.

No discussion of trade analytics is complete without discussing transaction cost analysis. How is TCA evolving beyond its roots in equity to serve the needs of multi-asset traders?

AC MiFID II mandates that TCA is applied to every asset class. TCA is relatively straightforward for equities, given electronic quoting and ample liquidity. Applying TCA to other asset classes is more problematic, especially illiquid fixed income markets that are still predominantly voice traded. FX is seeing increased uptake of TCA thanks to equity-like electronic markets and ample liquidity in major currency pairs.

Fixed income is quite challenging unless you're trading highly liquid government bonds. Many bonds don't even trade daily. What is best execution at that point? It actually forces traders to analyze the way they trade in a different kind of way. Where did I get pricing? Is there liquidity? Is it a reasonable price?

It may not even be about price, sometimes the size of the order is more important. If a portfolio manager wants 10 million of a name, but the bids are coming in at half a million, and somebody's willing to do a 10 million block, that's possibly the best execution. The trader gets the risk he's actually trying to get irrespective of the price, which may not be the best price. Firms need to capture all of this data in the background in real-time, in a way that doesn't interrupt the trade flow, so they can analyze it later and justify their thought process to clients and regulators.

Artificial intelligence and machine learning garner non-stop press coverage. Separate the reality from the hype.

AC I was at a conference recently where panelists talked about AI in the EMS. It's a growth area because AI provides for automation, especially for low-touch trades. Still not so sure that we're going to be using Twitter to make trades on the buy-side, because that's where some of these feeds are coming from. But from Charles River's side of it, we talk to our clients. We're looking at what they're doing, how they're interacting with new technology. We're an open platform that allows for these tools to be connected into the OEMS. And we don't necessarily have to build AI and other analytics applications ourselves. We're open to bringing in new technology when it becomes viable.

At the same time, we're enabling our clients to harvest and store this data in a form that the AI can utilize. You can't just bring in an AI tool and assume it's going to work by itself. It needs a big, extensive dataset to work with.

The current focus for most firms is collecting and aggregating sufficient data for AI applications to consume. That's especially challenging when it comes to fixed income data due to reduced trading frequency and far more outstanding CUSIPs than equities.

VG It really depends on what you mean by AI. If you're talking about AI taking over a trader's job, it's not even close. But if you're talking about using technology to harvest the data, mine the data, and come up with recommendations on how best to proceed on a given order, we're already there.

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One way around the problem is obtaining composite prices from different vendors. The more market data firms can bring in, the better the insights that AI and other analytical tools can provide.

AC One of the things we've been doing is making sure the OEMS is capturing data which previously got lost between a separate OMS and EMS, when people recorded trades and price levels on paper. We're making sure that data is captured electronically, in a standard format, so as AI applications become mainstream, they can interrogate a common data set across all trade types and asset classes. Manually recorded data simply isn't mineable, and it's a huge burden for busy traders to maintain that level of detail consistently. So automating data capture in the OEMS is key.

We are seeing a growing ecosystem of fintech vendors building innovative AI and machine learning applications that significantly expand the capabilities of the OEMS. How are these apps improving trade risk management?

AC When traders are managing large amounts of order volume, it becomes impossible to track all of it at once. These applications sift through large volumes of data in real time and produce alerts and charts that capture trader attention when markets shift, or when market microstructure changes.

Sometimes, traders are given latitude by the portfolio manager to determine how best to implement an investment idea given a set of risk parameters. The trader decides whether to gain exposure via swaps, CFDs or some other instrument. Having historical data readily available to guide the trader's decision making process is key.

AS MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE APPLICATIONS GAIN PROMINENCE, HISTORICAL DATA STORED IN THE OEMS WILL BE MINED BY THESE APPS TO UNCOVER PATTERNS AND BETTER INFORM THE TRADE DECISION MAKING PROCESSES.

VG Investment managers can embed these applications in their OEMS without having to depend on the OEMS vendor to develop and maintain these applications. OEMS platforms built on an open architecture facilitate the growth of that ecosystem. Innovative startups and OEMS vendors both remain focused on their core competencies. In turn, the partnership provides significant benefits to buy-side firms.

As machine learning and artificial intelligence applications gain prominence, historical data stored in the OEMS will be mined by these apps to uncover patterns and better inform the trade decision making processes.

AI-based applications that mine trade history can issue recommendations on how best to proceed with a trade – from venue and broker to time of day and average trade size. Even moderately sized orders can generate tangible cost savings from reduced slippage and smarter execution.

How do these apps support alpha generation?

VG Consistently attaining best execution is an important contributor to alpha. AI-based applications that mine trade history can issue recommendations on how best to proceed with a trade – from venue and broker to time of day and average trade size. Even moderately sized orders can generate tangible cost savings from reduced slippage and smarter execution.

We've covered a lot of ground discussing the current state of the smart OEMS. What are your thoughts on the future of this technology?

VG The technology is here and only getting smarter. In the past, buy-side firms were limited by what technology had to offer. They had to get a separate OMS and a separate EMS. That's no longer the case. The concept of an OEMS has gained widespread buy-side acceptance, especially in the context of an enterprise investment management platform.

As AI and other technologies gain maturity, the ability to embed those technologies in the OEMS will be a key differentiator for both technology vendors and their buy-side clients. And the firms that derive the most profitable insights from the massive volumes of data captured in their OEMS will emerge as market leaders.

AC Going forward, I think one of the key requirements for any platform has to be openness. No one has a crystal ball. Markets and regulations will change. New venues pop up. New trading protocols and innovative analytics will emerge.

In order to leverage these new offerings, an OEMS has to be built on an open architecture that allows new venues, protocols and applications to be integrated. Firms need to be able to adapt and move quickly, otherwise they'll be left behind. Partnering with a technology vendor that supports openness is a necessary first step for investment managers.

NEXT STEPS: Read more about Charles River's comprehensive [Order and Execution Management System \(OEMS\)](#) capabilities.

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