

HOW BUY-SIDE FIRMS MAKE PROGRESS



DELIVERING ALGORITHMS TO THE BUY-SIDE

Hedge funds have long been among the pioneers in capital markets, both in terms of their financial strategies and the technology needed to drive execution of those strategies. And with greater amounts of institutional money now flowing to hedge funds as part of asset diversification by the buy-side, hedge funds are increasingly pressured to exploit any and all opportunities to achieve Alpha.

In trading, quantitative hedge funds have been among the first to develop and exploit unique proprietary algorithmic trading strategies. But the ongoing “care and feeding” of algorithms—needed to ensure that they deliver differentiated and profitable returns—is a continual challenge for firms that have limited IT resources. Taking a unique algorithmic concept and turning it into an executable strategy can be daunting and time-consuming.

CHALLENGE

Gain the sophistication and differentiation that its inhouse-developed algorithms offered while minimizing the demands on limited IT resources

SOLUTION

Progress® Apama® Algorithmic Trading Platform

BENEFIT

Implemented strategies unique to its business without t expensive IT resources; implemented risk management as an integral part of its trading scenarios

This case study reviews the efforts of a hedge fund that has used the Progress® Apama® Algorithmic Trading Platform to deliver the requisite sophistication in its trade execution, without dependence on the commoditized algorithmic offerings of prime brokers.

BACKGROUND

This hedge fund operates a diverse set of funds that encompasses a broad range of trading and investment goals supported by equally diverse trading strategies. At one end of the spectrum, the fund trades on macroeconomic movements like the interest rate benchmarks issued by different central banks or government updates to various economic indicators. At the other, it executes relative-value arbitrage plays to exploit short-term pricing inefficiencies.

To support its sophisticated trading operations, the firm had made a significant investment in its trading infrastructure—both with respect to staff and technology—and was managing a mixture of internally developed and packaged software solutions. The fund traded primarily through direct market access (DMA), using FIX connectivity provided by brokers; vendor-supplied, multi-asset front-ends, and packaged order management systems. Market data was delivered through Reuters.

Prior to Apama, the hedge fund's use of algorithmic trading varied. Oftentimes, equities trades executed on the fund's behalf by its prime brokers used market benchmarks like VWAP. The use of such algorithms was made transparent to the fund, thus enabling their use to be reported to investors.

Additionally, the fund was able to invoke certain broker-supplied algorithms directly through a multi-asset front-end. Last, the fund had developed certain custom algorithmic strategies that leveraged its prime brokers' DMA access over FIX. The primary goal of its internally developed algorithms was to disguise trade strategy via execution maneuvers like clipping.

Despite the varied algorithmic usage, the fund sought out new capabilities to address challenges with its existing operations.

Among the concerns:

- > The broker-provided algorithms did not offer the level of innovation sought by the fund and were too inflexible to adapt to the specific trading models that the fund wished to implement.
- > The hedge fund sought algorithmic capabilities that would reflect its unique trading style, including the use of arbitrage and multiple asset classes—specifically, futures and foreign exchange—within a single strategy. The algorithms available from the brokers were restricted to equities.
- > The fund’s own strategies had been created in an entirely proprietary environment and had proven expensive to develop and change. Where appropriate, the fund wished to purchase third-party vendor technology.

DECISION CRITERIA

Reluctant to invest further in expensive custom development projects when the results would not adapt to future requirements, the fund sought a vendor offering that could deliver a cross-asset class strategy development and execution environment. It eschewed totally packaged trading solutions, believing that the vendor-specific algorithmic strategies would likewise prove too inflexible over time. The hedge fund wanted an environment that extended the capabilities of its traders and IT organization, leveraging their trading and technical strengths yet minimizing the effort needed to build new or modified strategies from scratch.

As part of its evaluation criteria, the fund defined several trading strategies as benchmarks against which it would measure the performance of various offerings. There were three distinct strategies: an equities-specific trading algorithm, a foreign exchange strategy, and a third strategy combining equities and FX. Additionally, the fund wanted to evaluate the possibility of incorporating risk within its trading strategies. Rather than execute post-trade risk determination, the fund sought to understand the feasibility of conducting

A 90-day proof-ofconcept confirmed Apama had the functionality, tools for strategy development, and integration facilities.

pre-trade risk analysis as an integral part of the composition of the algorithmic scenarios.

After a vendor evaluation and proof of concept, the fund chose the Apama platform. Its evaluation found that Apama tools could shorten the time needed to develop and deploy new strategies. It also found that the Apama platform was open to any type of asset class, thus meeting the firm's goal of developing both FX and cross-asset trading strategies. And, last, it determined that it could use Apama to implement strategies that perform very low-latency, pre-trade risk calculations, ensuring that trade execution was not impeded.

THE APAMA PLATFORM

Development of the new trading strategies has been a joint effort led by senior members of the hedge fund's IT staff who work with the firm's traders to incorporate their requirements within new algorithmic strategies. As part of this process, the fund's risk staff also provides input on setting trade limits that apply to the different trading scenarios. Risk thresholds consider the trader, the individual asset, and the overall portfolio.

Traders monitor strategies via Apama dashboards that provide an interface that empowers them to instantiate, parameterize, and manage

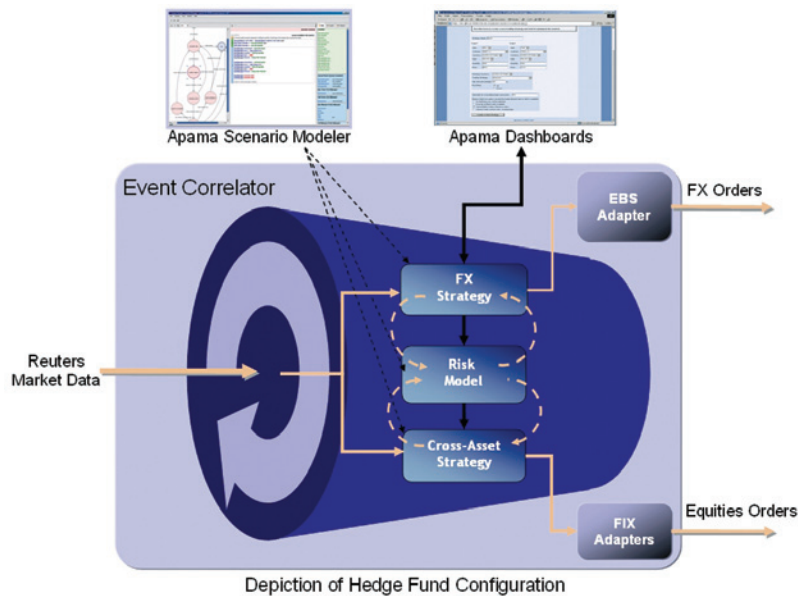


Figure 1:
Depiction of Hedge Fund
Configuration

strategies. If risk thresholds are exceeded or orders placed by a strategy are denied, the trader and overall system manager are notified via alerts.

The Progress® Apama® Event Correlator (*illustrated in the Figure 1*) provides the core algorithmic trading and risk assessment execution functions, with risk assessment successfully integrated as part of pre-trade analysis function. Apama executes this automated risk assessment with extremely low latency, minimizing impact on the processing time required to take an order from an executing strategy, through assessment, and on to the liquidity pool.

To further assure that risk policies are accommodated, the risk evaluations are logically distinguished from the trading strategies in the Apama architecture. The modular Apama design enables algorithmic strategies to be assembled from component blocks. A common, shared risk block (a Progress® Apama® SmartBlock™) can be integrated within different trading scenarios. The modular design mitigates the issues associated with potentially rogue strategies that might modify risk parameters and circumvent fund policies.

As illustrated, the configuration provides several different points of integration. Among the packaged Apama adapters is one for EBS that gives the fund access to FX liquidity. Access to broker DMA for equities and futures trading is through a packaged Apama FIX adapter. Last, a separate packaged RMDS adapter provides the fund with access to a Reuters data feed.

“...the fund has found the right balance between a solution and custom development ... it can quickly implement strategies that are unique to its business”

RESULTS

Through the Apama platform, the hedge fund has successfully implemented a number of different trading strategies, addressing both its initial evaluation requirements and going well beyond. It has effectively replaced the benchmark VWAP strategies (previously accessed through a broker) with strategies developed and executed in Apama.

The fund has also deployed automated cross-asset strategies that deliver algorithmic functionality that matches the fund’s trading strategies. For example, if the fund wishes to trade a foreign denominated equity and

hedge the FX position that results, that entire scenario can be captured within the Apama environment.

And most importantly, the fund has successfully implemented risk management as an integral part of its trading scenarios. With risk addressed within the trading applications, the fund can ensure that intraday trading activity is matched by intraday risk evaluation. The fund effectively pre-empts any actions that run contrary to its established risk thresholds. And it avoids the end-of-day reconciliation of trading activity/risk management that might demand remedial trading to rebalance portfolios as is common with many funds.

SUMMARY

With Apama, this hedge fund has effectively found the right balance between packaged solution and custom development. Apama delivers the platform and tools that leverage its internal trading and technology strengths to deliver a sophisticated array of new trading strategies that transcend what is available from packaged solutions. With Apama, the fund is not constrained to standard broker-provided algorithms. It can quickly implement strategies that are unique to its business without the encumbrance of expensive IT resources.

PROGRESS SOFTWARE

Progress Software Corporation (NASDAQ: PRGS) is a global software company that enables enterprises to be operationally responsive to changing conditions and customer interactions as they occur. Our goal is to enable our customers to capitalize on new opportunities, drive greater efficiencies, and reduce risk. Progress offers a comprehensive portfolio of best-in-class infrastructure software spanning event-driven visibility and real-time response, open integration, data access and integration, and application development and management—all supporting on-premises and SaaS/cloud deployments. Progress maximizes the benefits of operational responsiveness while minimizing IT complexity and total cost of ownership.

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