

VIEWPOINTS

A Charles River Conversation



The Convergence of Buy-Side Risk & Performance Solutions

HOW ASSET MANAGERS BENEFIT FROM SYSTEM CONSOLIDATION

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River**

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BUY-SIDE MARGIN COMPRESSION, triggered by the rise of passive investing, is forcing institutional asset managers to re-think their front and middle office technology choices in order to reduce costs and streamline operations. At the same time, actively managed funds are under increased pressure to explain their value proposition to skeptical investors, by providing a clear picture of risk adjusted returns in the context of a portfolio manager's decision making process.

These drivers are disrupting the traditional separation of risk and performance technology. Several recent mergers between vendors of risk modeling and performance attribution solutions have focused attention on the synergies between these critical buy-side functions.

Charles River recently hosted a panel discussion with product specialists Katya Taycher and Arun Kumar and Accenture's Warren Sherman to discuss the trend toward system consolidation and how this benefits institutional asset managers.



KATYA TAYCHER

*Director,
Charles River Development*

Katya is responsible for Portfolio and Risk Analytics at Charles River. This includes Quantitative Research, Analytics, Risk, Scenario Analysis and Performance Measurement and Attribution. Katya is a certified Financial Risk Manager (FRM), and holds an MBA in Finance from the University of Pennsylvania Wharton School.

KT



ARUN KUMAR CFA, CIPM

*Product Manager,
Charles River Development*

Arun is responsible for Charles River PMA (Performance Measurement & Attribution) and is actively involved in multiple client implementations for the PMA Module in North America and in Europe. Arun holds an MBA in Finance & Strategy from the Hult International Business School and has acquired CIPM and CFA designations.

AK



WARREN SHERMAN

*Senior Consultant Risk Solutions,
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Warren is a Risk and Treasury management professional, with over 30 years experience in various banking, insurance, and capital markets software development positions. Expertise includes risk simulation technologies, risk modeling, and risk reporting. Recent work involves credit portfolio solution selection to stress test macro factors.

WS

Traditionally, buy-side performance and risk systems have been separate technology offerings. From a buy-side perspective, why did that make sense for so long?

WS These systems were designed for entirely different constituencies within an asset management firm, with separate interests and objectives. If you've ever attended meetings that combined portfolio managers and risk specialists, you're likely to have had a demonstration of those differences, perhaps an energetic one.

While performance is measured much the same as it was 20 years ago, risk modeling tends to track more closely with the latest academic research. So buy-side risk modeling evolves over time, leveraging those innovations. The publication by Fischer Black and Myron Scholes on option pricing and David Lee's Copula model for CDOs are two examples of academic work that had a major impact on buy-side risk and portfolio analytics.

Risk management has become an integral counterpart of performance measurement. Asset managers are looking for technology that combines these capabilities in one system.

We also see this separation on the vendor side.

KT That's right. The industry got started 20 years ago with vendors offering very specific solutions for either risk modeling or performance measurement and attribution. And that mirrored the buy-side's willingness to purchase them. Vendors could grow their franchise simply by focusing on their expertise. The industry has evolved, and those smaller players are now consolidating.

It's hard to find an individual risk solution or performance and attribution solution these days. That's mirroring a strong trend in the industry: asset managers are looking for a single platform that can address all of their needs across the front and middle office.

As Warren noted, risk and performance specialists were often at odds, and there was a large division between those teams in terms of both technology and vision. This has changed dramatically, especially since the 2008 financial crisis, where risk management is now an integral counterpart of performance measurement. So asset managers have started to look for technology solutions combining these disparate capabilities in one system.

Technology vendors also specialized in particular asset classes. Ten years ago, it was difficult to find a single solution that would cover equities, fixed income, money markets, and derivative instruments. That mirrored what buy-side firms expected, where most portfolio managers were focused on a particular asset class. With the rise of multi-asset funds and strategies, that no longer holds true. There's growing demand for systems that can handle multiple asset classes.

What's driving these trends from a functional standpoint?

AK First, the rise of factor-based investing requires a framework where you can evaluate risk, and attribute performance, using a common set of risk factors. This framework provides exceptional visibility into what risks were taken to achieve the resulting investment outcome. It seems obvious that this analysis is best performed on a unified platform using a common data set.

Closer collaboration between the front and middle office is another driver. Traditionally, performance measurement was a middle office function, while risk has been more of a front office function. As the lines blur between the front and middle office, those risk and performance silos disappear. This is a good thing, and improves communication and collaboration across different departments in buy-side firms.

BUY-SIDE FIRMS THAT STILL RELY ON SPREADSHEETS, OVERNIGHT BATCH PROCESSES AND SILOED RISK AND PORTFOLIO MANAGEMENT SYSTEMS NEED TO RE-ASSESS THEIR FRONT AND MIDDLE OFFICE TECHNOLOGY. IF THEY DON'T, IT'LL BE FORCED ON THEM, EITHER BY REGULATORY MANDATES OR A RAPID DECLINE IN AUM AS INSTITUTIONAL CLIENTS GO ELSEWHERE.

Cost pressures and organizational considerations certainly play a role here as well. What's your viewpoint across the industry?

WS Regulatory drivers for increased risk transparency are increasing buy-side compliance costs at the same time that fee compression is hitting asset managers' bottom lines. That's forcing firms to retire point solutions in favor of enterprise platforms.

It also explains the near universal acceptance of SaaS-based deployment. COOs want to minimize operational risk as well as technology costs. It's much easier to have a technology vendor who offers not only economies of scale, but zero downtime, disaster recovery, and most importantly, version control. With the number of advances we are seeing in portfolio construction and risk modeling, asset managers can't afford to be on even a two year old version of software, it puts them at a distinct competitive disadvantage. That's also reflected among the leading risk and performance solutions. I can't think of one that isn't SaaS based.

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What trends are you seeing around system rationalization among Charles River's client base?

KT Cost pressures and fee compression are definitely driving system consolidation. And IT systems are certainly a huge cost. But it's not just the licensing fees. With many of our [Charles River] clients, we're seeing that staffing costs related to implementation and upgrades are actually higher than the licensing fees. And system integration challenges remain the most expensive. When firms upgrade a particular system, they need to consider the many integration points it has to other systems. The more systems that firms use, the more difficult and unmanageable those integrations become.

Firms may have specialists in a particular technology platform, but it's very difficult to find somebody with expertise in all the tools across the organization. So integrations become custom projects that require a lot of maintenance, and are very error-prone. When the people responsible for those integrations leave or move to a different position, the integrations becomes very difficult to maintain. Often, manual work is required, involving spreadsheets or rekeying data between different systems, which has very high operational overhead and increases risk. In total, these issues have driven many buy-side firms to consolidate the number of front and middle systems they use. Increasingly, firms are trying to find one enterprise solution that can fulfill as many of their requirements as possible.

Underscoring Arun's point, the line between the front and middle office is definitely blurring. Portfolio managers, performance analysts, middle office risk and compliance managers want access to the same data and systems so that they can be on the same page.

The line between the front and middle office is blurring. Portfolio and risk managers need access to the same data and systems.

In your opinion, what is the primary benefit of a consolidated risk and performance platform for asset managers?

WS It ensures that everyone is working from the same risk and performance numbers – from traders to portfolio managers and investment committees to the C-suite. People can have a conversation around those numbers without questioning their validity or reconciling results from different systems.

A term that I've heard applied is "operationalizing risk management". Basically, providing transparency and wider access to the data, which obviously is a big theme with regulators.

How does the system consolidation trend impact buy-side data management?

AK A shared, consistent set of pricing, reference and benchmark data is just as important as having a common risk and performance framework. But ensuring that calculations and models are based on accurate and timely data is incredibly challenging.

Clearly, the cost of using multiple applications is another factor that should be considered. If you are using two different applications with the same benchmark data, it can cost you twice as much. And with the ever increasing cost of real time data, it becomes more important to reference a single data source.

Worse yet, a point solution may be contractually linked to a particular data vendor, which introduces inconsistencies into a firm's investment process that need to be reconciled.

Asset managers and vendors realize that performance measurement is very much aligned with risk in terms of data requirements. The ability to use a single "gold copy" of the data minimizes errors, redundant licensing, and the need to reconcile inconsistent results.

**FIXED INCOME MANAGERS
VULNERABLE TO THE
IMPENDING BARCLAYS POINT
RETIREMENT ARE SHIFTING
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TO ACTIVELY REVIEWING
THEIR OPERATING MODELS
AND ISSUING RFI'S FOR
REPLACEMENTS.**

The trend toward unified risk and performance platforms seems to be validated by the recent mergers and acquisitions we're seeing across the vendor community.

WS Certainly seems so. Factset acquired BISAM and FinAnalytica, Bloomberg bought Barclay's POINT, and most recently StatPro acquired UBS Delta. In the world of hosted and integrated environments, bigger is better. And I think it makes sense for vendors to make these acquisitions in order to offer buy-side clients a consolidated platform.

I also wanted to underscore what Katya said about the old "best of breed" application model and the risk of redundant data. Regulations on the banking side like SCAP, CCAR and DFAST exposed just how pervasive this problem was. Different security masters existed across the organization, which created an environment where it was very difficult to gain visibility across the balance sheet or across portfolios. There were different customer identifiers. There were different issue identifiers. Some of those data models had the detailed information that was desirable for some processes, but it wasn't replicated in other ones.

I've seen many large-scale initiatives to create an enterprise data model. One of the big drivers here is the acknowledgment and understanding that a single source of this data provides a number of benefits beyond cost efficiencies.

We've built the Charles River solution completely in-house, rather than acquiring niche vendors and cobbling together disparate code bases.

How is Charles River addressing the need for a consolidated enterprise platform?

KT By combining all required functionality on a single platform serving the needs of the front and middle office, from portfolio construction to trading and post-trade. More recently, we've added the entire suite of performance attribution and risk tools to the platform, including ex-post and ex-ante risk. We've built the solution completely in-house, rather than acquiring niche vendors and cobbling together disparate code bases.

Charles River supports a broad range of portfolio and risk analytics, including sensitivity to interest rates, credit risk and inflation, as well as curve-based analytics and key rate durations. We've also added stress testing and scenario analysis to enable outcome modeling under hypothetical market scenarios.

Our performance measurement and attribution capabilities enable asset managers to look at their portfolio on an ex-post basis and see how it performed on both an absolute and relative fashion, as well as on a risk-adjusted basis, and attribute those returns relative to the benchmarks to allocation or selection decisions.

We support a broad range of global fixed income instruments for over a hundred jurisdictions, covering government bonds, corporate bonds, inflation-linked bonds and interest rates, and bond futures. This helps streamline the investment process for our clients, and enables them to use Charles River across all of their funds and investment styles. This is underscored by the fact that we have clients spanning over 40 countries, including insurers, pensions, sovereign wealth funds and hedge funds.

The platform is built on a shared data foundation. Everybody, from compliance managers to risk managers, portfolio managers, and traders, is looking at the same set of analytics and exposures calculated using the same data and methodologies. One set of assumptions and one set of analytics methodologies underlie all of the tools that we use. That reduces the need to integrate and move data from one system to another, and enables everyone to speak the same language and access the same numbers.

Given the central role of factor models in this discussion, how are they supported in Charles River?

AK The foundation of both our equity and fixed income attribution is based on industry standard return-based attribution methodologies.

But as I said earlier, the trend is changing. There are more complex type investment strategies being devised, and asset managers are increasingly moving towards factor-based investing. That compelled us to come up with our factor-based attribution approach. It's important to note that factor-based attribution is not replacing the traditional attribution methodologies. Rather, using risk factors gives you a much more granular view of the sources of return.

By utilizing a security's factor exposures, as well as the factor returns, we have implemented what we call hybrid factor attribution, leveraging traditional equity and fixed income attribution alongside risk factors derived from the factor models. This provides our clients with a much more detailed view of the sources of those returns.

Our buy-side clients value the flexibility of our platform. Many asset managers have invested significant time and intellectual capital developing proprietary factor models, or partnered with third party vendors that specialize in factor model construction. Our platform enables the seamless integration of any factor model, from any source.

Everybody is looking at the same set of analytics and exposures calculated using the same data and methodologies.

KEY TO IMPLEMENTING AND MANAGING SMART-BETA PRODUCTS IS A TECHNOLOGY PLATFORM THAT SUPPORTS FACTOR-BASED ATTRIBUTION AND PORTFOLIO OPTIMIZATION USING FACTOR MODELS.

Realistically valuing the assets in a portfolio is key to assessing risk and performance. How does Charles River address asset valuation modeling?

KT All of our portfolio risk and performance tools rely on consistent and accurate analytics, and in particular, in our ability to value all instruments, from illiquid corporate bonds, to exotic derivative instruments. That's important not just in terms of providing valuations with current market data, but also to support stress test and risk

analysis. We need to be able to value all the instruments that clients have in their portfolio. With that in mind, we build robust valuation models.

We use industry standard models, such as the ISDA model for valuing CDS instruments, but also support multiple options for instruments where there is no accepted standard. Users can change the model assumptions based on their understanding of the market. Once model parameters are configured, they are used across the platform to help ensure consistent valuations.

Closing thoughts from an industry perspective?

WS In my experience at Accenture, the move toward incorporating factor exposures in the investment process, and doing it on a contemporaneous basis, is emerging as an important conceptual and operational area. Being able to look at a portfolio by risk factors instead of asset classes is a significant advance in both risk and performance attribution. Asset managers, regulators and investors all benefit from a more granular and aligned view of risk and performance.

Secondly, while Dodd-Frank stress tests apply to banks, investment managers increasingly stress test their portfolios to gauge the impact of potential macroeconomic shocks and individual credit events. A significant source of risk that most practitioners missed in the run up to 2008, was that in times of market turmoil, asset correlations go to one. So the ability to do forward-looking risk modeling and anticipate these types of scenarios has been pushed onto banks, and it is increasingly expected for pension funds and insurance companies as well.

Buy-side firms armed with the technology to implement these sophisticated capabilities are well positioned in an era of rising macroeconomic uncertainty, growing regulatory burdens, and increasingly sophisticated investors.

NEXT STEPS:

Visit the Charles River Portfolio Management and Risk Analytics [Resource Center](#) to learn more about our solution.

Contact us to [schedule a demo](#) or visit [crd.com](#).

THE GROWING COMPLEXITY OF INSTITUTIONAL PORTFOLIOS AND PERVASIVE USE OF DERIVATIVE BASED YIELD ENHANCEMENT STRATEGIES REQUIRES NEW THINKING AND NEW MODELS. THERE IS A VERY REAL RISK THAT POORLY UNDERSTOOD CORRELATIONS AND INTERACTIONS COULD RESULT IN SIGNIFICANT LOSSES AT SOME POINT IN THE MARKET CYCLE.



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Investment firms, asset owners, wealth managers, hedge funds and insurers in more than 30 countries rely on Charles River's front and middle office investment management platform to manage more than US\$30 Trillion in assets. Together with State Street's middle and back office capabilities, Charles River's software technology forms the foundation of State Street AlphaSM. The Charles River Investment Management Solution (Charles River IMS) is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. Charles River's growing partner ecosystem enables clients to seamlessly access external data and analytics, applications and

liquidity venues that support the unique demands of their product and asset class mix. Headquartered in Burlington, Massachusetts, we serve clients globally with more than 975 employees in 11 regional offices. (Statistics as of October 2019) [WWW.CRD.COM](#)

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