



Transforming front office risk management in capital markets

DXC and ActiveViam share over 10 years of experience and hundreds of projects successfully deployed in cloud environments. We have recently been working together to implement and support large scale front office solutions in Tier 1 and Tier 2 financial services firms. The goal is to bring together the relevant expertise in the two organizations to help accelerate the modernization of financial services analytics and make the power of Atoti available to all organizations that may benefit from it.

This white paper examines the key challenges faced in front office risk management within capital markets, and how DXC and ActiveViam can jointly address these for clients in a modern, scalable and innovative way. There are many market challenges facing clients today, with geopolitical, economic, technological and interest rates among many other risks that have flared up in recent years. Effectively managing risk in the front office is critical to the way in which capital market participants manage their operations, with potentially significant downsides to mismanagement.

Sell side organizations can easily have in excess of \$100M Value at Risk (VaR) on their traded portfolios, and market volatility can spike almost instantaneously in the world of ever more connected markets.

DXC and ActiveViam have combined their expertise to evaluate these challenges and demonstrate how their shared capabilities can help clients implement robust front-office risk management solutions that create a competitive advantage.



Customer pain points in the front office

In today's volatile and fast-moving capital markets environment, front office risk management faces significant challenges. Traders and risk managers now require continuous risk and P&L calculations; overnight or intraday batches no longer suffice. These underlying challenges may seem relatively trivial in isolation but when combined create complex and time-consuming issues. Failing to address these can reduce front office productivity, leading to lower revenue and competitiveness in the market. The underlying challenges include:

Fragmented data ecosystems:

Firms often struggle with siloed systems and data sources, leading to inconsistencies and inefficiencies in risk measurement and pricing. Firms also find it difficult to construct management reports aggregating timely risk and Profit and Loss (P&L) across asset classes that are managed in different silos. The fragmentation goes beyond systems: data may also differ fundamentally, with valuations produced using varying models, curves, and accrual calculations. Many firms book their swaps and asset swaps in one system, but manage their FX and credit derivatives in another, making real-time risk and P&L difficult to evaluate.

Lack of real-time insight:

Front office teams require real-time visibility into risk exposures to make informed trading decisions. End-of-day, delayed or batch-mode risk calculations hinder responsiveness and risk breaching trading limits during the day.

High infrastructure costs:

Legacy systems often require costly maintenance and lack the scalability needed for modern analytics and simulation workloads. The architectures are often unsuitable for deployment on-cloud, leading to excessive cloud hardware costs. Lack of flexibility in on-premises infrastructure can also lead to capacity constraints during periods of extreme market volatility, whereas cloud native solutions can scale rapidly with demand.

Limited what-if analytics and stress tests:

This can hinder trading optimization, as risk engines often generate metrics in rigid, inflexible ways. Traders need risk bucketing for hedging strategies, often done in ad-hoc spreadsheets. Uncontrolled Excel use also leads to calculation errors. Effective P&L drilldowns—from high level aggregated views to individual trades—are essential for delivering the level of detail required for the most accurate decision making.

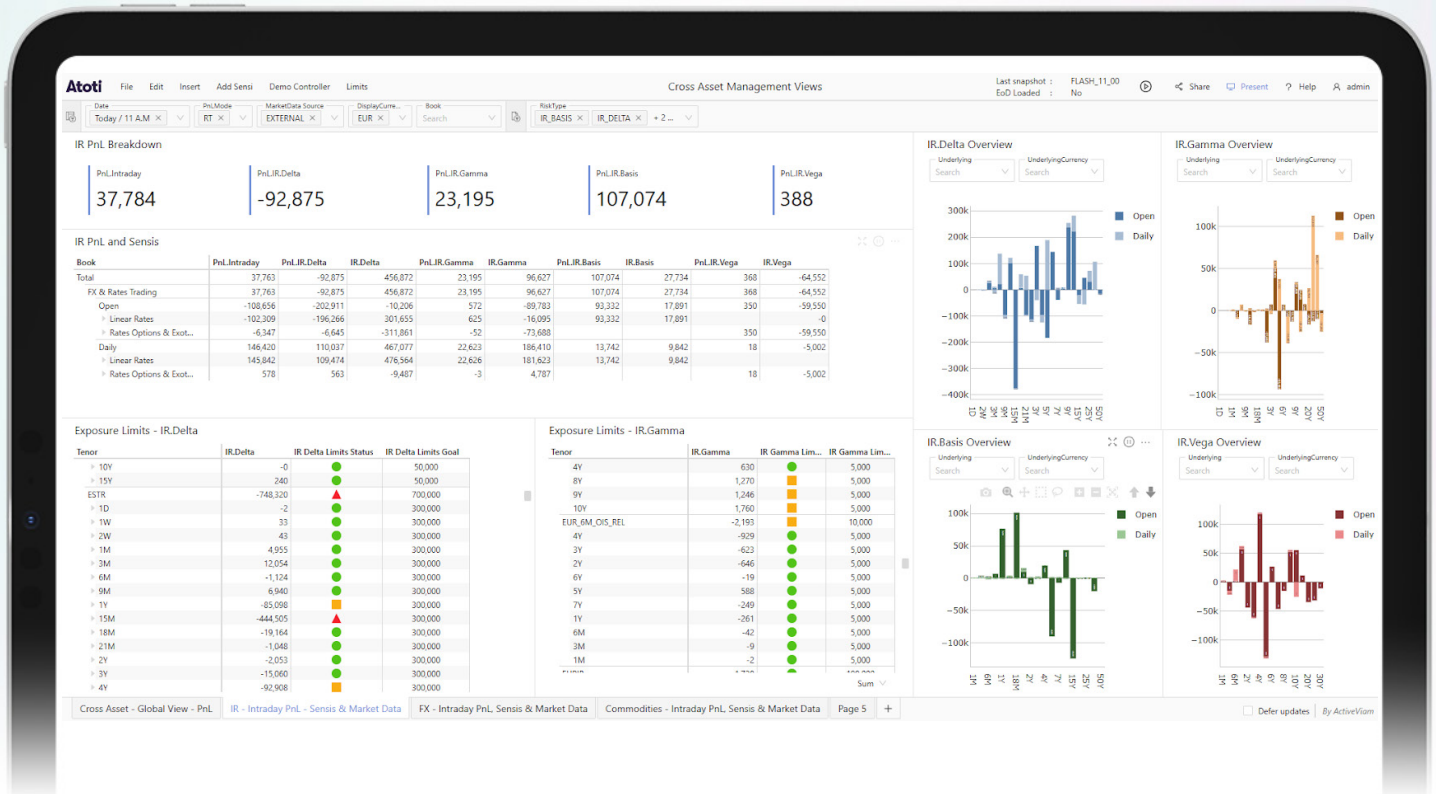
Increased regulatory pressure:

Ongoing changes in global regulatory frameworks (e.g., FRTB, Basel IV, MiFID II) have increased the granularity and transparency expected in front office risk reporting.

Complexity of multi-asset portfolios:

The proliferation of structured products, derivatives, and cross-asset strategies adds complexity to risk models and makes timely aggregation of exposures more challenging. Macro hedging and hedge accounting become more complex with mixes of linear and non-linear derivatives, and asset correlations can break down during stressed markets, adversely impacting hedging strategies.

Atoti UI dashboard showing P&L explainers, and limit consumption and status for delta and gamma



When applied to everyday tasks, these underlying challenges often multiply, compounding the issues firms face. For example, reconciling P&L estimates with end-of-day revaluations is complex and error-prone. Risk is inherently multi-dimensional—with many curves, tenors and risk factors—and it's impossible to hedge effectively without an agile tool to re-bucket and re-project risk onto alternative bucketing structures, or map multiple curves to target curves as needed. Missing trade or market data updates can result in incorrect valuations and risk profiles, and disparate data sources delay risk position consolidation.

Traders operating near their limits risk breaching them when the official end-of-day calculations are done if intraday and real-time aggregation or limit monitoring produce differing or inaccurate results.

This can often mean a more cautious approach to trading than could otherwise be taken with accurate and timely data, thereby artificially limiting business growth.

Addressing these challenges

Atoti, ActiveViam's risk aggregation and analytics engine, provides a unique solution by addressing delayed P&L visibility, opaque risk impacts, and inflexible analytics. It offers sensitivity aggregation with real-time data feeds for immediate P&L visibility, flexible P&L explainers, and risk rebucketing for hedging strategies.

Atoti also provides consistent real-time dashboards and limit monitoring with push notifications. It can handle the data volumes in a front office and can ingest real-time market data feeds to drive real-time re-estimation of intraday P&L and trade feeds to capture new business and corrections. In global deployments Atoti can also handle concurrent processing of regional end-of-day processing.

Key benefits of Atoti for the front office include real-time P&L tracking, granular P&L explainers, sensitivity aggregation for optimized hedging, and dynamic drilldowns for investigating P&L at any level.

It also supports optimized decision-making, stress testing, what-if analytics, rigorous approval and reporting, and it future-proofs the organization.

Atoti differentiates itself with true real-time P&L and risk analytics, on-the-fly P&L recomputation, granular P&L explainability, high-performance in-memory processing, dynamic what-if, stress and scenario analysis, real-time interactive dashboards, seamless integration, and scalability across trading desks and asset classes.

Python developers can set up and populate Atoti cubes directly from notebooks like Jupyter. From Python, they can define complex measures, create insightful visualizations, and deploy projects to production. The real-time OLAP cube, designed for complex non-linear aggregation, is enhanced with user-friendly features tailored for Jupyter. It can run on a laptop, a server, or in any cloud environment, making it easy to share dashboards.



DXC and ActiveViam — driving front office transformation

DXC and ActiveViam combine their respective strengths in systems integration, cloud modernization, and in-memory analytics to provide robust solutions for front office risk management.

By working in tandem, DXC and ActiveViam deliver unique value propositions to capital markets institutions:



Accelerated time to value:

Pre-integrated frameworks and industry-specific blueprints enable faster deployments, reducing risk and improving return on investment timelines. DXC's leading systems integration practices provide significant expertise across the most commonly deployed trading platforms globally. We efficiently integrate disparate data sources into the target solution to reduce time to value.



Scalability and flexibility:

Our joint solution scales dynamically to support market volatility, increasing trade volumes, more complex products, and expanding regulatory requirements. Flexible commercial models and managed services also allow clients to focus on their business rather than running solutions directly.



Cost efficiency:

By reducing reliance on legacy systems and batch processes, the combined solution significantly lowers the total cost of ownership (TCO).



Strategic advisory and support:

DXC brings global consulting and managed services expertise, including on-site and local language support across all major trading centers globally.

ActiveViam continually invests in product innovation and roadmap alignment with client needs. DXC has helped clients address their organizational challenges, with different departments having co-ownership of various parts of the risk management stack—from front office, credit risk and market risk or finance. Industry best practices and advisory can help bring alignment on requirements, golden sources of data, and approaches to ensure a holistic view is taken.



Eliminate spreadsheet risk:

Excel has been used by many organizations as a quick, tactical solution to provide intraday risk exposure and end-of-day reconciliation metrics. However, when it comes to cross-asset, enterprise-wide consolidation, spreadsheets quickly reach their limits. They introduce well-known challenges such as version proliferation and customizations, data lineage and auditability issues, and a lack of consolidated views. Operational risk can, in turn, create significant reputational risk. Atoti's rigorous approach to data security, consistency and integrity makes the Atoti UI a far superior solution.

Atoti supports both on-premises and cloud data sources and can be deployed in either—or both—environments. This hybrid capability is especially valuable for ad hoc historical analytics.

In the long term, Atoti drives cost efficiencies by tackling the cross-domain risk problem with a single dashboard that aggregates market, credit and liquidity risks.

Future AI innovations in front office risk management

Artificial Intelligence (AI) is poised to redefine the future of risk management in the front office. Here's how emerging innovations will further enhance the DXC and ActiveViam offering:

1.

Predictive risk analytics:

Machine learning models can forecast potential market shocks, enabling proactive hedging strategies and reducing VaR exceedances.

2.

AI-enhanced scenario generation:

Advanced AI can generate realistic stress scenarios that go beyond historical events, improving robustness of stress testing frameworks.

3.

Natural language interfaces:

Front office users will increasingly interact with risk systems via natural language queries, democratizing access to complex analytics.

4.

Intelligent data quality management:

AI tools can automatically detect and correct anomalies in trade and pricing data, ensuring the integrity of risk calculations.

5.

Automated model monitoring:

AI-driven validation systems can monitor and recalibrate risk models in real-time, ensuring continued accuracy and regulatory compliance.

Future AI innovations for front-office risk management have the potential to create significant competitive advantages for those ready and prepared to embrace them. These benefits can only be realized by having the right foundations in place, supported by systems capable of leveraging these innovations. Financial institutions must act now to clean up front-office data, break down silos, and implement the systems needed to capitalize on emerging trends in front-office risk management. Future-ready solutions—like those provided by DXC and ActiveViam—will unlock the full potential of your front office for sustainable, profitable growth.

About the authors



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Chris has been part of the Atoti story for many years and has worked closely with many of ActiveViam's customers around the globe in various technical and managerial roles deploying complex front office projects. Chris has worked in the financial software industry for over 30 years and holds a degree in Physics from Oxford University.



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Mark has over 15 years' experience across London and Sydney, focusing on the application of cloud-based solutions to trading and risk technology in capital markets. Working for Excelian and then DXC, he helped to significantly grow the Digital Consulting practice in Australia before moving to ANZ, where he ran the Market Risk Technology team and led a cloud acceleration program within ANZ Institutional. Mark relocated to London in 2021, joining DXC to drive the as-a-Service transition across Banking and Capital Markets.

About ActiveViam

ActiveViam is a fast-growing financial data analytics solution provider. Built for and trusted by leading financial institutions, ActiveViam delivers active intelligence for complex financial analytics. It combines unrivalled technology, continuous innovation and exceptional people to unlock the power of real-time and granular data at scale. Designed as a high performance semantic layer, ActiveViam's flagship product Atoti, enables clients to implement built-in front-office and risk business solutions while accessing customizable technology. ActiveViam is in the world's leading financial marketplaces, with a presence in London, New York, Singapore, Sydney, Hong Kong, Paris, and Frankfurt.

For more information, please visit activeviam.com or follow on [LinkedIn](#)

About DXC Technology

DXC Technology (NYSE: DXC) helps global companies run their mission-critical systems and operations while modernizing IT, optimizing data architectures, and ensuring security and scalability across public, private and hybrid clouds. The world's largest companies and public sector organizations trust DXC to deploy services to drive new levels of performance, competitiveness, and customer experience across their IT estates. Learn more about how we deliver excellence for our customers and colleagues at [DXC.com](https://dxc.com).