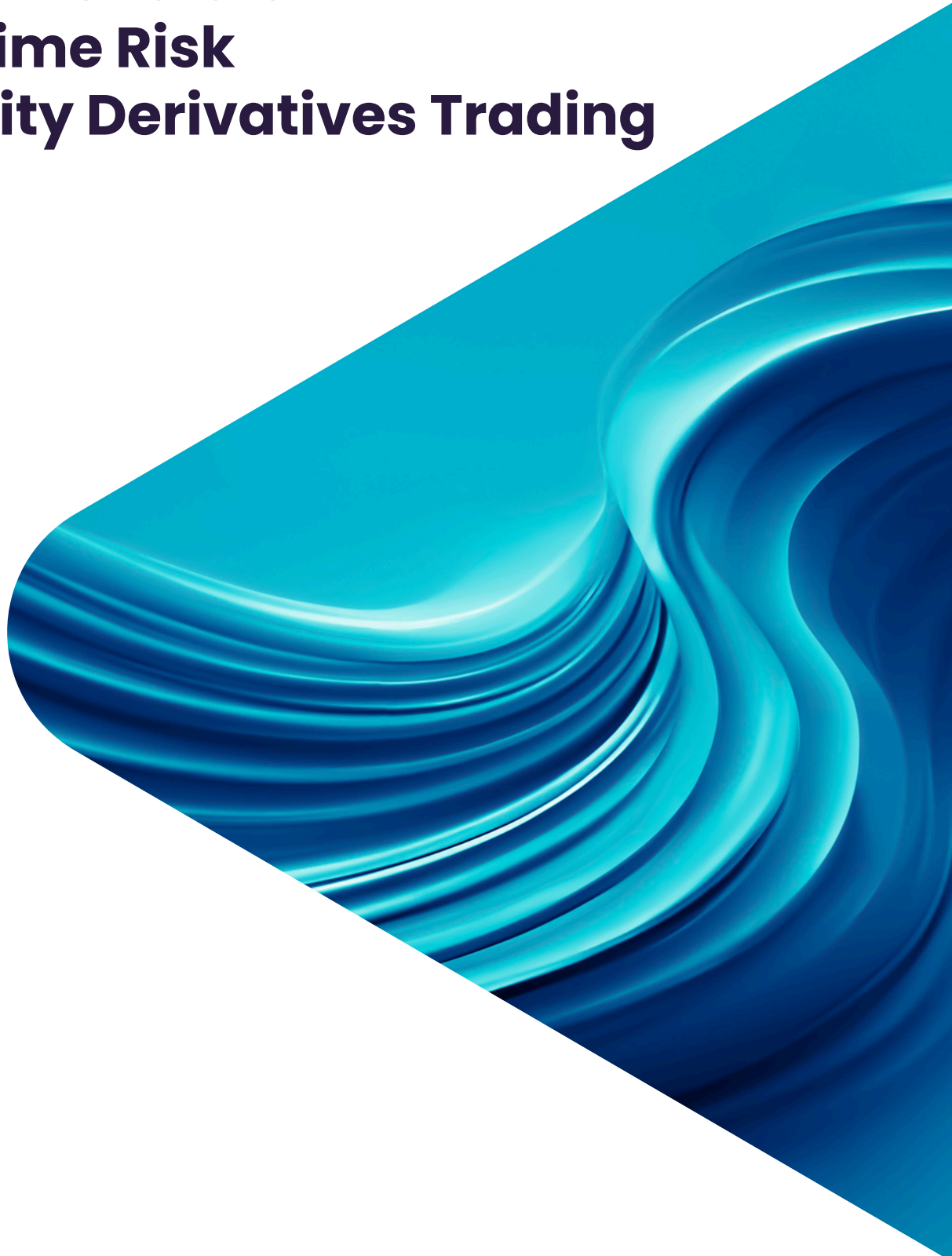




Case study

Societe Generale Real-Time Risk for Equity Derivatives Trading



Overview

Equity Derivatives is the largest front office trading department and one of the most strategic activities at Societe Generale Global Banking & Investor Solutions (GBIS). The Equity Derivatives business relies on technology to meet the decision-making needs of traders who process large volumes of transactions.

To ensure accurate pricing, traders in Equity Derivatives require a deep and precise understanding of their positions' impacts before executing trades. They rely on technology to provide them with insight into portfolio risk and P&L - not just a requirement but a driving force for success in this field.

GBIS set two key priorities for the Equity Derivatives business:



Capitalize on its long-standing expertise to scale activity levels.



Implement a Societe Generale strategic initiative to streamline its IT infrastructure, by consolidating technologies and minimizing independent projects.

Atoti, the industry-leading analytical platform by ActiveViam, emerged as the answer to both challenges.

Already in production at GBIS's Fixed Income and Currencies (FIC) department, Atoti delivers unparalleled real-time insight into risk and P&L at scale, while seamlessly integrating with GBIS's existing systems, including the bank's robust risk engine and proprietary interfaces.



What makes Atoti stand out is that it remains reliable even under the highest pressure and with the largest volumes.

It can aggregate and process data at scale. For FX trading, all the front office production data, every single calculation, goes through Atoti.



*Dhiaeddine Thabet
Project Leader for Real-Time
FIC Fixed Income*

The starting point:

Outdated technology and customization creep

At the heart of the challenges faced by Equity Derivatives at GBIS was a legacy of technological debt and unchecked customization that had accumulated over many years. The pressing issue was that the existing risk system, structured around Excel macros connected to OLAP cubes, was simply unable to meet the demands of a cutting-edge trading department aiming to rank among the top 10 globally.

This sluggish architecture could take minutes to execute queries and failed to deliver the real-time visualizations critical for accurate risk and P&L assessment, as the dataset was updated just three times a day. It was also a recurring pain point for management, who could not have a precise and aggregated view of risk on demand per trader or per desk.

Such a leap could only be achieved if traders were provided with a precise, up-to-date view of risk on-the-fly, with complete flexibility on bucketing and hierarchies.

Bringing customization under control

In addition, Societe Generale was driving a broader initiative to reduce technological discrepancies across its operations and better manage customizations. The situation within Equity Derivatives was characterized by fragmented development, with each regional desk independently modifying systems and traders crafting bespoke macros.

This model had several negative consequences for the department: every desk having their own fork and every trader adding their own customizations was becoming increasingly expensive to maintain.

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- Having key calculations running locally could cause issue with data traceability and auditability.

Crucially, Societe Generale did not want to get rid of such customizations, which provided real value, but to bring them under the control of a centralized IT management. This would allow the bank to bring maintenance costs under control, to retain institutional knowledge and to make select customizations easily available to other users. A decision was made therefore to develop for the Equity Derivatives department, a completely new analytics platform, through a project codenamed TREE, with Atoti at its core.

Atoti: "The obvious choice"

When the Equity Derivatives project started, Atoti had already proved its mettle in the FIC trading arena at GBIS for several years, and had been identified internally as the best aggregation tool for the purpose, showing better performance in benchmarks compared to other platforms.

“Every trader had custom Excel macros plugged onto big OLAP cubes. It wasn't very responsive, with queries taking several minutes.”

*Anthony Gressin, Project Leader
for the new analytics platform
for the Equity Derivatives department*

Atoti was viewed as the only technology platform capable of delivering a real time view of risk over the data volumes involved. The familiarity of GBIS's teams with the product as well as the longstanding partnership between the bank and ActiveViam were also key factors leading to the selection of Atoti as the technological foundation for the new risk management system.

"Laser-precise" risk analysis

Empowering GBIS with unparalleled accuracy, the new Equity Derivatives risk management solution contains all trading risks within a series of redundant cubes scaled to accommodate the number of concurrent users and queries.

Each morning, Atoti ingests millions of data points – risk figures from the risk engine, market data, and GBIS's internal records – classifying them within an intricate framework comprising hundreds of hierarchies.

Atoti gives traders an unparalleled degree of freedom by resolving the complex aggregation calculations involved within mere seconds, all while keeping the dataset updated every second with streaming market data and new transactions.

The benefits also extend to team leaders and managers, who can now easily aggregate risk across traders and desks to have a precise and up-to-date view of risk from the perspective and scale that are relevant to them.

High performance, cost-efficiency and rationalization

Atoti's role as the new lynchpin for equity derivatives underscores a strategic leap forward for both business performance and IT efficiencies. This high-performance solution empowers traders with an unprecedentedly responsive view of risk, delivering data that is unprecedented in its precision and in the quality of current, intuitive and meaningful visualizations. These enhancements translate into a marked increase in daily trading volumes, driving business momentum.

Dhiaeddine Thabet remarked,

Atoti could plug into market data sources and integrate the data live. It was already connected to our UI framework. It stood at the crossroad of the whole data chain. It was the obvious choice.

Anthony Gressin explains,

Risk figures are prepared upstream of the Atoti cubes. Within the cubes we only run post-processors and quick calculations, to reserve as much capacity and bandwidth as possible for trader queries. Products are stored in an analytical structure that traders can freely explore and analyze to gather the insight they need at any particular time.






Dhiaeddine Thabet said,

For risk analysis, this is night and day. Risk visualization is laser-precise: you can scrutinize risk across exactly the right dimensions, the right split.

From an IT perspective, Atoti consolidates disparate local forks into a single, streamlined tool, enabling cost-efficient management and establishing robust frameworks for data quality and access rights. The rationalization of resources translates into economies of scale, especially as Atoti's usage extends to other bank departments, fostering shared expertise and collaboration. With the deployment of Atoti, several other tools are in the process of being decommissioned, leading to further savings.

The customizations that traders rely on are progressively integrated into the platform in a way that is sustainable over the long term.

Before

-  Complex, custom Excel macros
-  Slow, unresponsive user experience
-  No real-time view of risk
-  One fork per desk
-  Haphazard customizations

After

-  Freeform classification and analysis of risk across hundreds of hierarchies
-  Instant responsiveness
-  Analytical cubes updated every second
-  Increased activity volume
-  Single central architecture for all users
-  Global distribution of customizations



A catalyst for change

Atoti's integration into GBIS shows how technology, when wielded with vision and expertise, becomes a formidable lever for deep organizational transformation with minimal disruption.

Atoti's deployment debunks the myth of performance versus cost by demonstrating that strategic investment in technology can concurrently drive operational efficiency and cost-effectiveness.

Atoti's aptitude to apply complex calculations to large volumes of fast-moving data in real time is what made it the obvious choice for the project, but it is the platform's ability for adaptation and customization, combined with the expertise of GBIS's teams, that made it such a transformative asset for both the business, and IT.

Key facts and figures

-  **Data volumes at full capacity:** 80 million lines, representing two days of data
-  **Volumes of streaming data:** up to 50,000 refresh of quotation every second



About ActiveViam

Founded by industry experts, ActiveViam understands the data analytics challenges faced by financial institutions across trading desks, risk, and compliance. ActiveViam pioneered the use of high-performance analytics in finance, helping the largest investment banks, asset managers and hedge funds make better decisions, explain results with confidence, and simulate the impact of their decisions. ActiveViam's mission is to deliver train-of-thought analysis on terabytes of data in the most cost-effective way so clients can explain their results with confidence and model the scenarios that will optimize their business. ActiveViam specializes in risk data analytics for one of the fastest moving and most regulated industries with a presence in the world's leading financial marketplaces – London, New York, Singapore, Sydney, Hong Kong, Paris and Frankfurt.

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