



White Paper

Collateral Optimization





Achieving a Competitive Advantage with Collateral Optimization

Collateral optimization has taken center stage in the OTC derivatives market, as new regulations such as Dodd-Frank and EMIR continue to drive reforms, and have generated a new central clearing model. As higher collateral requirements impact financial institutions, eligible assets will be in shorter supply. This means that the ability to optimize existing collateral will quickly become a highly valued and sought-after service, helping companies to reduce their funding costs. Those financial institutions that offer a bespoke collateral optimization service will be able to optimize client assets more efficiently, ultimately differentiating themselves from competitors.

Breaking down your silos

Many financial institutions have already invested heavily in IT systems to automate individual elements of their collateral management process such as inventories, collateral eligibility, reference data, or trading systems.

However, firms should invest in developing an enterprise-wide optimization strategy. Issues to address include: driving greater firm-wide efficiency, enhancing front-to-back collaboration, alpha generation in a revenue constrained/low interest rate environment, asset/collateral transformation and ensuring liquidity buffers for LCR and NSFR.

Regulations are now introducing new timing complexities when fulfilling margin calls, making it important that the optimization function also be operated by the front-office. The existing siloed collateral management systems, often located in the back-office are now proving inadequate to the task of delivering effective and efficient collateral optimization.

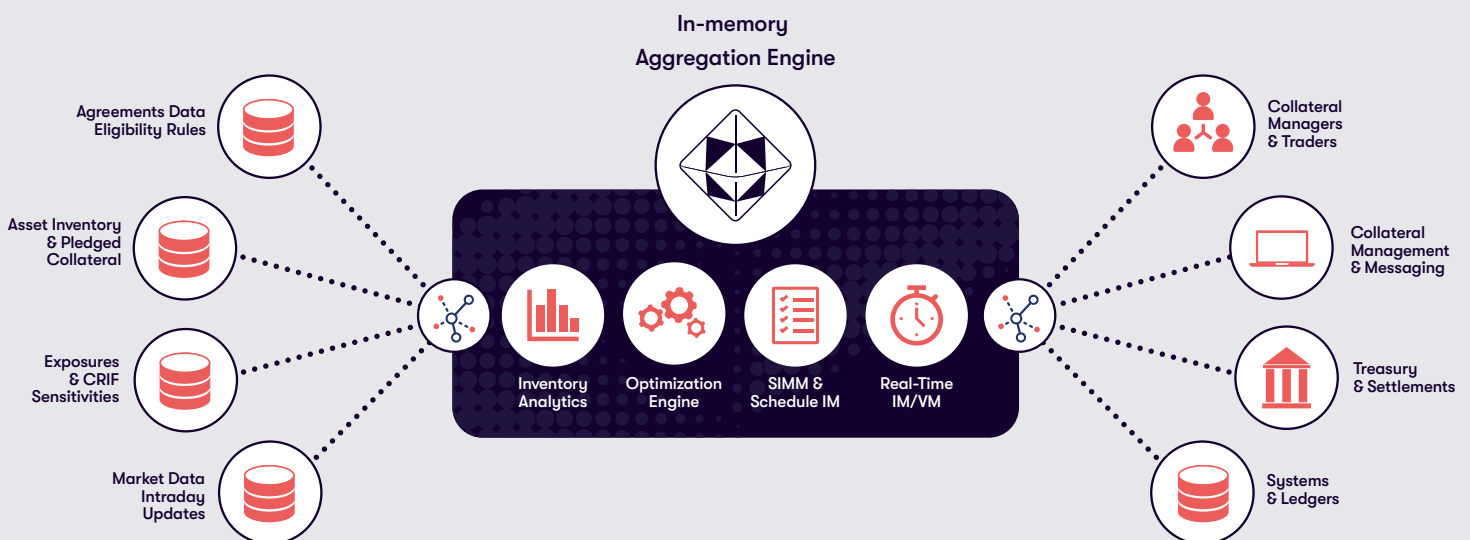
Time for a fresh approach: Non-disruptive optimization with a small footprint

So what are the options available? Throwing away existing systems to start from scratch with the purchase of a new packaged application that claims to have enterprise-wide optimization capabilities? What would be the cost of such a huge project and would it be available in time?

At ActiveViam, we propose a different approach to taking full ownership of collateral optimization models, which takes into account your time-to-market objectives, cost constraints and future requirements.

Beyond “cheapest-to-deliver” ActiveViam provides What-If scenarios and multi-algorithm calculations that allow users to analyze various models and to determine the best optimization strategy.

➤ The ActiveViam Eco-system for Collateral Optimization





Enterprise-wide collateral optimization framework

With our in-memory aggregation and analytics framework, IT teams can build a bespoke and dynamic collateral optimization layer that complements existing underlying systems, providing users with a common analytics platform— whether in the back, middle or front-office. Using ActiveViam as the backbone to collateral optimization efforts provides a range of business benefits:

➤ Cross-silo collateral optimization

ActiveViam provides agnostic, firm-wide cross-asset aggregation, ensuring users have a real-time, consolidated view of collateral exposure, inventory and collateral. Information is updated incrementally as soon as underlying data changes (new trades, FX rate change etc) and available to multiple users who can access this data simultaneously.

➤ Instant ‘What-if’ Analysis

The front-office needs to assess on an intraday basis different data sets to then be able to evaluate and improve the optimized configuration and inventory of collateral. ActiveViam allows users to interrogate collateral data at any level and perform instant ‘What-if’ analysis to evaluate alternative optimization scenarios.

Examples include:

- Cherry-picking assets, excluding portfolios
- Ratings changes and market shift analysis

- Re-running optimization across parameters
- Setting priorities between different portfolios/inventory
- Strategic asset withdrawal

➤ Leverage existing investments

With ActiveViam, you do not need to reinvent the wheel and rip out existing systems. ActiveViam seamlessly integrates with underlying systems in a fast and non-intrusive manner.

➤ Aggregation, optimization and analytics

Existing collateral systems were built for operational workflow processes, and lack the intelligence to aggregate and optimize large volumes of complex and dynamic data. The cutting-edge technology underpinning ActiveViam pulls data from multiple data sources, in any format, plugs in your business logic as well as optimization algorithms, and then builds a bespoke, powerful, future-proof, optimization framework.

ActiveViam enables firms to perform deep-dive and scenario-based analytics to understand their margin exposure and cost-of-trading and actively monitor and forecast initial margin levels to ensure limits and thresholds are managed.

➤ **Achieve a short time-to-market**

ActiveViam is a flexible framework that comes with pre-built optimization algorithms (such as “CTD”, Cheapest to Deliver) to help ensure the deployment of collateral optimization applications in a matter of months. Over time, your business and IT teams can enhance it with their own algorithms as collateral strategies evolve. This is a significant advantage compared to packaged software solutions, whose algorithms are set in stone

➤ **Real-time alerts and monitoring**

ActiveViam provides value-added monitoring and event-based decision-making in real-time. It goes beyond traditional CEP (Complex Event Processing) software, ensuring better informed decisions through more advanced business logic. ActiveViam manages rules that trigger specific actions. An example of this would be rules that exclude certain assets when clearing cut-off times are reached, ensuring maximum optimization efficiency.

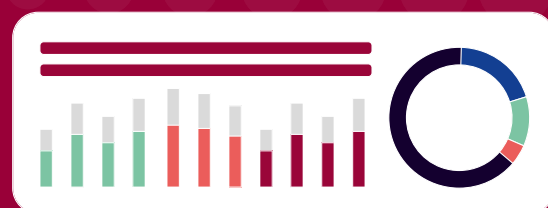
➤ **Improved intraday visibility for the buy-side**

While many asset managers now need to comply with daily margining for uncleared derivatives, only a small subset truly have collateral optimization and inventory management embedded into daily processing. At the same time, prime brokers now require more transparency and more frequent intraday margin calls to ensure that exposure is properly

collateralized during periods of market volatility. Buy-side firms will need to have proper workflow automation and asset allocation tools in place to ensure collateral liquidity/availability and to forecast potential margin calls based on current market conditions.

➤ **Full ownership and control**

You can plug in your own rules and logic to build a bespoke solution: collateral eligibility, haircuts, substitution rules and concentration limits. As a result, the optimization layer is 100% tailored to your specific requirements – this level of customization cannot be achieved with packaged solutions.



Frequently Asked Questions

How does ActiveViam's technology approach differ from packaged solutions?

- You have **full ownership** of your ActiveViam project (including the algorithms) so you can easily react to new in-house, client and regulatory requirements. This means that you are not dependent on your software vendor doing it for you!
- ActiveViam is a **non-intrusive technology** that fits seamlessly into any infrastructure and connects to all of your existing data sources. This is particularly important because it can be difficult to collect all of the data required for efficient and effective collateral optimization.
- **In-memory computing** technology allows you to get instantaneous responses, even if you are running optimization across an entire portfolio. Packaged solutions are limited to running optimization at a desk/cost-center level during the day, and rely on cumbersome overnight batch results for enterprise-wide global optimization.
- ActiveViam does not impose any predefined data model. ActiveViam will perform aggregation across heterogeneous data sources with the guarantee that, if any underlying data is updated, ActiveViam is instantly updated as well. This ensures a true **"Collateral Optimization Service"**.

Why is it more cost-effective to build a collateral optimization layer using ActiveViam?

- You already have the data required for collateral optimization. However, consolidating this information represents a major challenge, with a high cost attached. For example, trade exposures can come from different sources at different levels of aggregation. ActiveViam is designed to **collect, enrich and aggregate** this data, applying netting at any level, and turns the data into a clean input for the collateral optimization algorithm. Similar problems exist with cross-silo inventories.
- As a **flexible component**, ActiveViam can provide a collateral optimization service to any existing user interface which communicates via a web portal. Alternatively, you can deploy this service via a simple web browser, integrating our easy-to-use interface; or access the service from Excel.
- It is a **cost-effective solution**, easy to implement, but also scalable with minimal cost of ownership.

What are ActiveViam's unique capabilities?

- **Simulations:** Each user (or each client) can perform their own “What-If” analysis and get results instantly. Simulation results can be shared and analyzed across multiple users because ActiveViam offers a true collaborative platform.
- **Real-time:** ActiveViam features the only incremental aggregation/optimization engine available today, meaning that global portfolio optimization can be run intraday and on-demand.
- **Ownership:** Fully own, control and adapt optimization frameworks without restraint.

How quickly can a collateral optimization layer be implemented using ActiveViam?

- Assuming that the necessary underlying data is available, we can build a prototype using your data and our own CTD (cheapest to deliver) algorithm in 2 to 3 weeks. It's important to note that because you have full ownership of this solution, you don't have to go for a 'big-bang' approach - business and IT teams can adopt an **agile release cycle** as optimization knowledge and requirements grow over time but typical project implementations take between 4-12 weeks.

I would like to speak to an ActiveViam expert about Collateral Optimization, please.

Contact me

```
39 class Button extends React.Component {
40   render() {
41     return <button
42       className={this.props.className}
43       style={this.props.style}
44       onClick={this.props.onClick}
45     >
46       {this.props.children}
47     </button>
48   }
49 }
50 class Button extends React.Component {
51   render() {
52     return <button
53       className={this.props.className}
54       style={this.props.style}
55       onClick={this.props.onClick}
56     >
57       {this.props.children}
58     </button>
59   }
60 }
```



About ActiveViam

ActiveViam provides precision data analytics tools to help organizations make better decisions faster.

ActiveViam started in 2005 with the vision of leveraging in-memory technology to create an analytics platform where businesses could leverage the largest data sets without restrictions, keep them up-to-date in real time and use them to empower their decision makers.

Our goal at ActiveViam, is to let organizations not only make decisions faster, but better; to not only reach their data, but their potential; to not only see their data, but find their way into the future.

ActiveViam is a privately owned company with offices in Paris, London, New York and Singapore.

For more information please visit: www.activeviam.com

LONDON

6th floor,
Shaftesbury House
151 Shaftesbury Avenue
London WC2H 8AL
Tel: +44 20 7836 8820

NEW YORK

550 Seventh Avenue,
19th Floor
New York, NY 10018 USA
Tel: +1 646 688 4442

PARIS

46 rue de l'Arbre Sec
75001 Paris, France
Tel: +33 1 40 13 91 00

SINGAPORE

80 Amoy Street
#02-01
Singapore 069899
Tel: +65 6816 4988

HONG KONG

21/F, On
Hing Building,
1 On Hing Terrace
Central, Hong Kong