

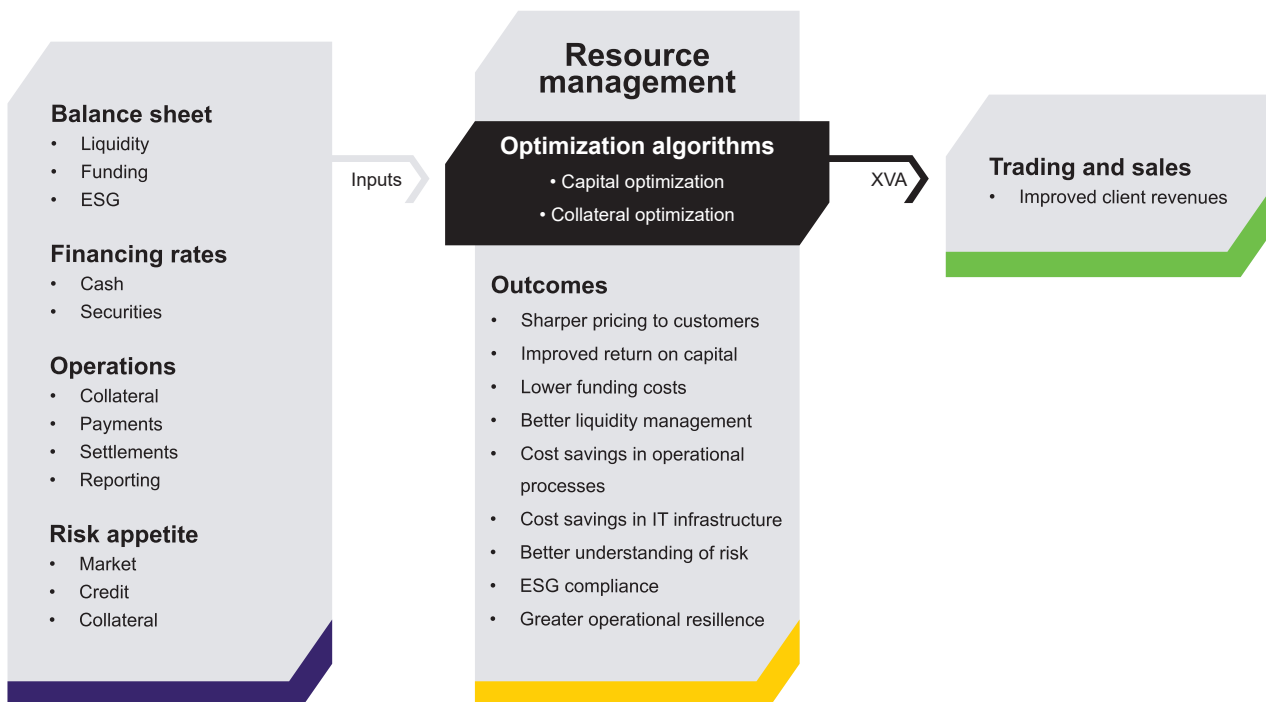
Towards firm-wide resource management

Navigating the new world of capital markets trading and operations

Capital markets trading continues to undergo the repercussions from the global financial crisis (GFC) regulatory reforms. Mandating clearing of over-the-counter (OTC) derivatives and uncleared margin rules (UMR) have ensured that most transactions are now subject to additional margining and reporting requirements. New trading book (FRTB) and credit capital (SACCR) regimes are altering the playing field and taken together with the increased demands for collateral, require a fundamental change in how banks price and manage their positions. Furthermore, rising interest rates, and the increasing cost of collateral — as central banks end quantitative easing — are compelling firms to re-evaluate their trading and operational strategies.



In response, leading banks are bringing collateral and capital optimization together within a new firm-wide financial resource management function. Resource management is typically tasked with collateral and capital optimization within balance sheet, ESG, operational and risk constraints and to price collateral and capital for Trading and Sales desks to drive client revenues.



To support this new resource management function, Operations and Technology departments are having to pivot from a product-centric to a data-centric view, leveraging new technologies such as integrated platforms to manage big data flows and integrate and automate processes.

The revisiting of collateral optimization under a holistic resource management function has emerged as a strategic driver within banks and creates the need for new actionable insight and decision-making views. This article explores these profound shifts, specifically focusing on the opportunities presented by adopting an integrated data platform for firm-wide resource management, particularly collateral optimization. Future articles will explore how this integrated platform extends to capital optimization and operational efficiencies.



Organizational, data, operational and infrastructure barriers

In an ideal world, trading opportunities and risks should be found and managed by looking across the organization and efficiently mobilizing firm-wide resources. Banks are typically organized along individual product lines, with little incentive to collaborate across businesses. This approach has led to trading systems being built in vertical silos around each product line, from trading to back office.

Where functions have required a firm-wide view (e.g., risk or finance), this has only been achieved by building a complex series of point-to-point connections between systems in different product silos. The resultant “spaghetti nightmare” stifles innovation and complicates change due to competing dependencies.

Information sharing is further hindered by each system having its own data model and data definitions, leading to endless reconciliation processes as data is moved from one system to another. The lack of a data-centric approach is a major barrier to realizing the opportunities from firm-wide information flows.

The lack of straight-through processing (STP) is an additional barrier with manual operational processes and endless reconciliations adding to costs and delaying the information flow.

A key complication of these systems is having multiple links to market infrastructure, whether for payments, settlement or custody; frequently driven by vertical product lines each with its own nostro accounts, settlement agents and custodians. This further fragments data flows, leading to inefficiencies and higher costs.

Further, with overall staff numbers reductions and offshoring, infrastructure maintenance and support costs have inadvertently become an unintended barrier to change and collaboration.

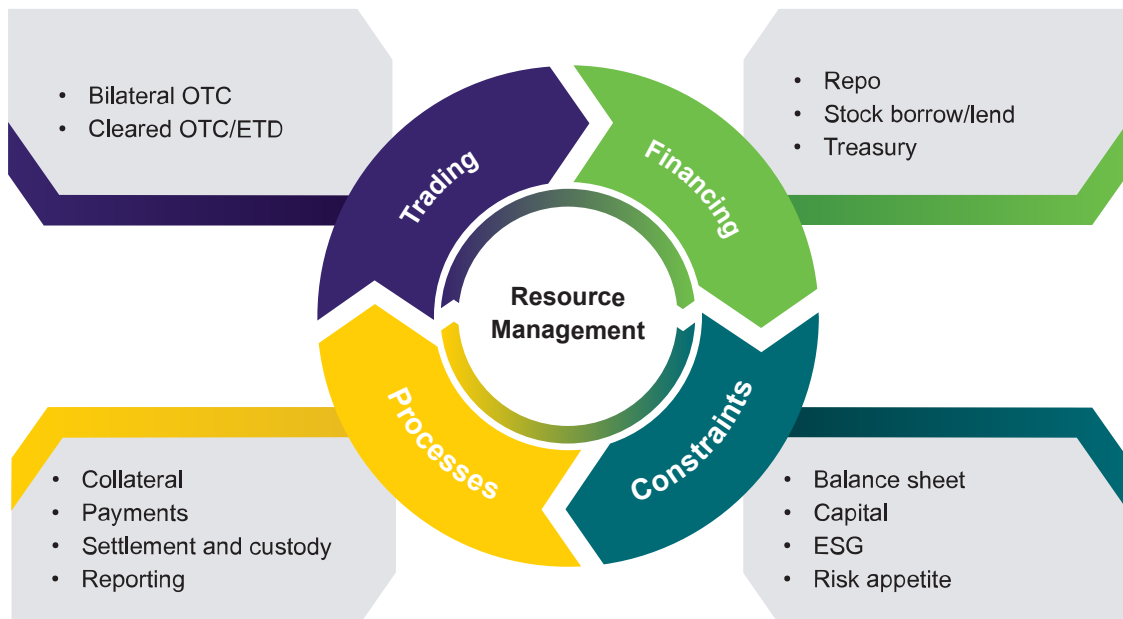
The need for a firm-wide resource management view

For the front office, these problems directly impact profit and loss (P&L) through uncompetitive pricing to clients due to sub-optimal pricing of collateral and capital. They also result in higher direct funding costs from an inability to identify and deliver the cheapest collateral to meet margin calls.

Risk management may have poor oversight of firm-wide collateral and capital. The lack of clean, consistent data inhibits stress testing portfolios and makes reporting to senior management and external supervisors/regulators slow and unnecessarily costly. All these factors can result in conservative limit-setting and potentially missed trading opportunities.

Operational processes remain inefficient, with manual workarounds prone to human error. How many local spreadsheets —, with macros built by staff long departed —, are still being used? How many audit points are outstanding due to late or inaccurate data?

Maintaining and supporting a technology stack ill-suited to sharing data and connecting to innovative new technologies is perhaps the biggest real and opportunity cost. Sharing the costs of connecting to central counterparties (CCPs) and collateral systems by adopting a platform model will bring performance improvements and cost savings.



The catalyst for collateral optimization

There is \$4,000 billion¹ collateral supporting OTC bilateral, cleared and exchange-traded derivative (ETD) transactions, of which \$484 billion is over-collateralization at CCPs. A modest 20% reduction here due to greater insight over margin positions would save banks collectively \$194 million (assuming a 20 basis points cost of collateral).

It's not uncommon for a bank to have assets spread across multiple collateral pools (e.g., CCP, credit support annex (CSA)), processed in multiple systems, across multiple legal entities using multiple payment banks and multiple custodians. Unraveling and streamlining will yield significant additional cost savings.

The UK LDI pension crisis in September 2022 demonstrates these pitfalls. A steep rise in gilt yields, resulted in large unexpected (circa £100 million+) margin calls for individual funds, forcing them to sell gilts into a falling market to raise the required cash collateral. This “dash for cash” was only stabilized by the Bank of England’s² intervention to buy gilts from the market. As a consequence, pension funds are reviewing their investment strategy, increasing access to repo markets and seeking to amend their collateral agreements (CSA) to include more flexibility over eligible assets to meet

margin calls. All this additional complexity requires better technology and a new organizational structure to manage collateral flows effectively.

This shift isn't merely reshaping the firms' trading approach; it's also fostering an environment conducive to disruptive technologies and innovative solutions. A firm's ability to adapt to and adopt these new methodologies will delineate its success in the forthcoming market landscape.

Ernst & Young's Lisa Maus, Mark Nichols, and John Boyle echo this observation³. They write, “The unprecedented environment has resulted in an increased focus on optimization, growing the need to drive efficiency across the business.” They continue, “Collateral optimization presents a significant opportunity to drive greater efficiency. In a revenue-constrained environment, financial institutions have an essential need to make informed decisions to maximize profitability while remaining compliant with regulatory requirements.”

¹ ISDA Margin Survey 2023, CCP PQD 4'22

² *Risks from leverage: how did a small corner of the pensions industry threaten financial stability? – speech by Sarah Breeden (bankofengland.co.uk)*

³ *Collateral optimization: capabilities that drive financial resource efficiency | EY - US*

The emergence of platform solutions

The changes in market conditions and operational prerequisites have exerted immense pressure on existing systems. Firms find their legacy systems, built up over many years, struggling to meet the demands of modern trading operations. The challenge now lies in crafting an open, scalable, flexible and secure architecture capable of accommodating legacy systems and enabling integration with innovative technology partners. This seamless blend of old and new is instrumental in facilitating an efficient and effective trading operation.

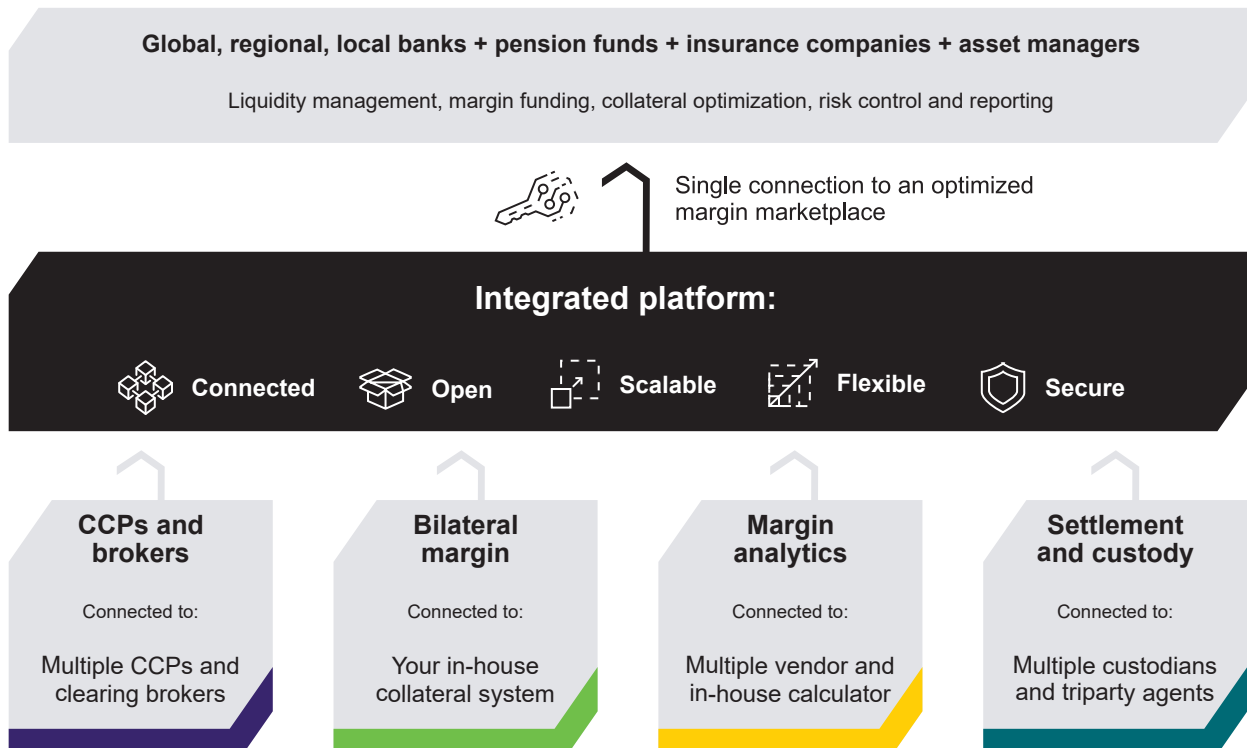
Integrated platforms are transforming capital markets, bringing users critical information and insight at lower cost. These platforms are cloud-native to give scalability on a pay-as-you-go basis. They are built using open-source code to lower costs and reduce vendor dependency. Microservices are used to break down tasks —, linked by APIs —, to enable incremental change

without disrupting the entire system. This flexibility is priceless in a rapidly changing and uncertain market environment.

External connectivity is accelerated through the use of modular ETL processes to extract, transform and load data into the cloud-hosted database. Public APIs allow users to extract data to their internal systems.

All components are wrapped in a security layer with continuous threat monitoring and identify and access management controls, including multifactor authentication.

Platforms can develop into marketplaces due to the scalability and flexibility of their technology, and it's not hard to envisage a margin marketplace developing in which a firm offers up a trade for clearing and other firms bid competitively to clear the portfolio based on their credit risk appetite and liquidity position.



Competitive benefits of an integrated collateral view

Applying this platform business model and technology to financial markets resource management and collateral optimization brings immediate benefits.

Firstly, being able to view firm-wide sources and uses of collateral in one place, plus the ability to apply analytics and market pricing, will enable companies to price transactions more competitively, increasing client revenues.

Furthermore, the same data and information will enable resource managers to reduce funding costs by allocating the cheapest-to-deliver assets to meet collateral outflows, as well as by reducing over-collateralization at CCP and excess liquidity buffers generally.

Risk management will also benefit from access to better quality data to monitor adherence to collateral policy and limits, and for their independent analysis, stress testing and reporting.

Operations and technology will no longer need to maintain and support multiple data feeds to CCP and brokers, resulting in significant cost savings. Ultimately, simplification of the technology stack and operational processes will lead to further cost reductions and improved operational resilience.

As an open architecture, the platform model lends itself to collaboration, attracting best-in-breed partners to accelerate delivery.

This blueprint for the integrated platform accommodates both on-premises and cloud functionalities. It fosters an environment where existing systems and new technologies coexist and interact seamlessly.



Answering the call to collateral optimization

The steps to realizing the benefits from collateral optimization in terms of improved pricing, lower funding costs and better liquidity, on top of operations and technology cost saving and stronger risk management include:

- Create transparency and visibility across firm-wide inventory, margin requirements and collateral eligibility. This requires adopting new technology to deliver the collateral platform with resource management at its center.

Trading is typically spread across multiple CCP and clearing brokers for OTC and ETD positions, and through an internal collateral system for bilateral OTC derivatives, repo and stock borrowing businesses. An active dealer may clear at 10 CCPs, and brokers and will have over 1,000 individual bilateral collateral agreements, each with their own terms and conditions.

All the external (CCP/brokers) and internal systems (bilateral collateral) will need to be connected to the platform, and each source system data mapped to the common data library so a consolidated firm-wide collateral inventory with attendant margin requirements and asset eligibility can easily be seen and analyzed.

Integrate the pricing information from the treasury (cash) and securities financing (bonds/equities) for all collateral inventory to price funding and determine the cheapest asset to deliver to each user of assets.

- Understand and mitigate the internal and external constraints on the collateral assets and margin requirements; be they operational processes around payments, settlement and custody, balance sheet, capital, ESG and/or risk appetite.

For instance, what type of cash or security is eligible for delivery to each CCP and under each bilateral collateral agreement? What is the margin call deadline and what constraints are there around payment cut-off times and security settlement? For example, EUR cash settles between 7 a.m. and 6 p.m. CET. UK securities can settle the same day, but US treasuries settle T+1, with US stocks and bonds T+2, and all may depend on your choice of paying agent and custodian.

Complex, for sure, and not possible without the right technology to manage the data gathering and information insight.

Highlighted partner - Rubicon from Kynec with AWS

Strategic partnerships are a pivotal aspect of this blueprint, and by collaborating with industry pioneers like Kynec and AWS, among others, Luxoft stands to lead this transformation.

Leading the collateral optimization charge as part of firm-wide resource management, Kynec brings decades of leading market experience embedded in its Rubicon AWS-hosted platform.

Case study – Kynec’s Rubicon platform on AWS

Kynec was hired by a leading European bank to provide their XVA desk, together with risk and operations stakeholders, with real-time reporting and insight over their major CCP exposures and collateral positions. Furthermore, this was to be delivered without any impact on existing systems and processes other than adherence to their stringent IT security requirements.

Kynec, with the bank’s permission, accessed each CCP client portal to extract all post-trade reports. Kynec then loaded these files - each CCP using its own technology and data model - into its Rubicon platform and mapped the data to its proprietary common data library in its AWS cloud hosted database. From here, Kynec used API and microservices to construct a series of dashboards, transforming raw data into insightful information for front office, risk and operations. Kynec incorporated a data-mining tool to enable online analysis, and integrated a business intelligence tool so that clients can construct and publish their own reports.

All data is end-to-end encrypted, protected and continuously monitored in line with the client’s requirements. Client access is managed through multifactor authentication.

The client now has complete visibility over its CCP positions, with a high-level consolidated view and ability to deep dive into each CCP exposure and margin position.

They are now well-positioned to add more CCP and brokers, integrate CCP analytics tools and complete their inventory management by adding bilateral margin. In short, Rubicon is on track to be their integration platform empowering resource management.



Future of capital markets trading

The future of capital markets trading lies in the shift toward firm-wide resource management enabled by integrated platforms. This radical transformation promises substantial benefits, despite the challenges involved. The pressure on resources, and collateral optimization in particular, provides the urgency to adopt this new thinking and technology today.

With strategic planning, partnerships, and an eye on the future, firms can navigate these hurdles and position themselves for success in the ever-evolving landscape of capital markets trading. Luxoft stands ready to help firms redefine their operations and strategies for this future.

To learn more about how Luxoft can help your firm in this transformation, get in *touch today*.

About the authors



Robert McWilliam

Founder and CEO, Kynec Ltd

Robert has over 30 years' experience in capital markets before founding Kynec in 2020. His last 18 months at ING were spent in their Innovation Lab testing and refining the Kynec business model. Robert joined ING to set up and lead the XVA desk during which time he was promoted to Managing Director. Previously he built up the CVA desk at ABN Amro and was a member of their Financial Markets Trading Management team. He was initially hired by ABN Amro to setup a collateral management desk before taking on the CVA challenge. At each bank Robert embraced innovative new technologies to drive performance.



Hugh Richards

Ecosystem Strategy, Banking and Capital Markets Solutions, Luxoft

Hugh has gained over 30 years' experience in financial services, investment banking, software company management and market strategy. He brings a unique balance of global business and technology leadership, focused on strategy, execution and innovation change management.



Mark Perkins

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Mark Perkins is Global Offering Lead, As-a-Service Solutions at digital strategy and software engineering firm Luxoft. He has 12 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 Luxoft across London and Sydney, 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 and has joined Luxoft to drive the as-a-Service transition across Banking and Capital Markets.



About KyneC

KyneC is a FinTech SaaS platform founded by XVA practitioners to solve the collateral optimisation problems they experienced in their day to day activities. Our Rubicon platform connects firms to multiple data sources – CCPs, Clearing Brokers and bilateral margin systems – harmonising and orchestrating the data into actionable insights for Resource Managers decision making.

www.kynec.com

About Luxoft

Luxoft is the design, data and development arm of DXC Technology, providing bespoke, end-to-end technology solutions for mission-critical systems, products and services. We help create data-fueled organizations, solving complex operational, technological and strategic challenges. Our passion is building resilient businesses, while generating new business channels and revenue streams, exceptional user experiences and modernized operations at scale

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