THE EXPONENTIAL GROWTH OF COLLATERAL OPTIMIZATION

“Building a high-quality, real-time data layer is considered one of the ‘heavy lifts’ of any collateral optimisation programme,” says Victor O’Laughlen, digital business leader for Clearance and Collateral Management at BNY Mellon, who explores data as a key driver of optimization.

BNY Mellon has a long history of developing, onboarding and expanding optimisation solutions that efficiently allocate collateral across secured funding portfolios. Client demand for our collateral optimisation solutions is high and growing — this owes mainly to the rising interest-rate environment and the material impact it has had on the cost of capital and financing.

In addition, increased market volatility has spurred a desire to automate processes to improve profitability, competitiveness and risk management. Given our unique position in the market, we are often asked whether collateral optimisation solutions should be built in house or licensed from third parties. We preface our answer by addressing two related matters.

First, consider the evolution and support required of market infrastructure providers. After all, clients can only move as fast as market infrastructure will allow. Service providers have been challenged to invest and support clients' collateral efficiency programmes because of the material impact on profit margins. In fact, not all service providers have invested in the capabilities to allow clients to interact with their platforms in a targeted way — for example, real-time portfolio data and real-time eligibility via APIs — to efficiently automate collateral allocations while minimising intraday liquidity usage.

BNY Mellon addressed these challenges early on and will continue to invest to further streamline collateral allocation movements across legal entities and jurisdictions. This will enable further efficiency gains. Mobilising the right collateral inventory prior to allocation is critical, which is why we integrated Euroclear's Collateral Allocation Interface to support clients' efficient movement of assets to our platform to generate additional liquidity.

The second consideration is the Liquidity Coverage Ratio (LCR), an essential element from the Basel III reforms, which are global regulatory standards on banks' capital adequacy and liquidity. It is typically a core requirement of our clients' optimisation objectives, and it remains in focus despite the existence of basic solutions. However, these solutions can miss the enterprise view on 'sources and uses' that are required to optimise effectively.

We demonstrate this regularly in our ECPOConnect proof-of-value analyses with clients. Done well, an enhanced LCR optimisation capability can materially reduce a client's cost of liquidity and free up capital. An enriched 'sources and uses' data layer can also be applied to optimise additional and more complex objectives, such as the Net Stable Funding Ratio (NSFR), as well as be extended to optimise further across various settlement locations. We collaborate with clients to perform these proof-of-value analyses to build their business case to secure the funding and resources to start the project.

BUILD OR BUY THE SOLUTION?

Important elements in the build-versus-buy decision include time to market, properly calculating continued investment and maintenance, a provider that delivers on time and can prove value upfront, and fully accounting for the opportunity cost of not completing other technology projects.

Time to market and technology opportunity costs can run into tens of millions of dollars per annum. Building one's own solution comes down to securing in-house quant expertise, hiring sophisticated developers, sourcing historical, high-quality collateral portfolio data, and building the service for optimised performance. A real tradeoff between accuracy and speed is a key area to consider. Even small underperformance in accuracy can have an outsized effect on cost of funding, and delays in completing the process can miss market cutoffs and important portfolio changes.

BNY Mellon processes over 10,000 complex optimisations a day and must deliver on accuracy, speed and resiliency all at once, given our role in the market and the size of the optimisation problems we have to solve. To efficiently support the market, BNY Mellon operates on a tight timeline of five minutes or less to produce a result - including our largest and most complex dealers.

Therefore, continual investment in performance is table stakes, which is why we recently re-architected our post-trade collateral optimisation service (ECPO) to reduce run times by 75 per cent without sacrificing accuracy. Performance is especially critical because increasingly sophisticated objectives, growing portfolio sizes, de-siloed business units, widening collateral locations and compressing timeframes mean increased complexity in execution.

Resiliency is essential and multi-faceted for collateral optimisers. The solution must always provide an optimal result in a short amount of time. And given a forced time-boxed result, it must also have a fallback option. Moreover, the application requires constant uptime – any failure during critical processing times can put a firm at undue risk. BNY Mellon has solved this via our active-active-active infrastructure where allocations are accurately processed 99.99 per cent of the time. Without this, a firm might need to reserve capital for adverse, 'stress' scenarios.

DATA AS A KEY DRIVER OF OPTIMISATION

Building a high-quality, real-time data layer is considered one of the 'heavy lifts' of any collateral optimisation programme. Investment is required to connect and consolidate data from various internal books-and-records systems as well as external venues like exchanges, and to normalise data with various settlement venues to effectively optimise intraday collateral deliveries, allocations and substitutions. A sophisticated solution should provide an API, and allow pulling input data and processing whole portfolio collateral allocations via a 'target state' directed allocation service, as well as support automated substitutions and allocations across the entire portfolio.

Most settlement venues do not provide this level of service, so connectivity is required in bespoke ways that are costly to establish and maintain. Many fintechs are also providing collateral mobility services, though some require clients to leverage their own infrastructure to execute the actual movements. For this reason, we felt collaborating with Pirum and Baton Systems made sense, given their connectivity with clients and their networked solutions connecting firms to the wider ecosystem.

Once market participants have created that foundational base for data, the challenge then becomes how to source, normalise and continue to maintain real-time data to minimise incorrect data that create 'breaks' in the end-to-end process. Portfolio data will be required across products, desks, legal entities and external service providers. Bringing all this together in a frequency and format that is useful to optimise and mobilise collateral is paramount. This is especially true for executing collateral allocations where settlement fails can occur if data is not properly mapped and so causes incorrect collateral eligibility and concentration limit calculations.

For this reason, BNY Mellon provides a collateral eligibility API, so it is unnecessary for clients and fintechs to consistently map data as it regularly changes due to data vendor changes, harmonising jurisdictional differences and adding new markets. Non-provision of this service gives rise to the challenge of producing quality collateral eligibility output that is consistent despite the various data changes that occur at each settlement location.

Quality data is key in achieving 'last mile' optimisation outcomes that typical settlement venues cannot provide. One example is disaggregating exposures of different trade tenors (and transaction types) from one required collateral value to provide refined eligibility data to fully optimise a portfolio. BNY Mellon charges a fee for our APIs because of the complexity and investment, which is included as part of the base offering for ECPOConnect. Clients should consider these additional data and service fees from service providers in their upfront cost analysis.

THE IMPORTANCE OF COLLABORATION

First-movers invested significant resources in their collateral optimisation platforms 10 years ago in response to Basel III regulations. We consider them great partners — they supported the development of our ECPO service. Through its interfaces (APIs), clients gain greater control over their optimisation function and collateral allocation process, accelerate implementation, reduce process latency, enable straight-through processing, and extend their capabilities as portfolios and settlement locations they aim to optimise growth.

To provide our clients a comprehensive, managed service option, BNY Mellon formed a strategic collaboration with Pirum Systems to market and sell ECPOConnect. The offering integrates two production services that complement each other, while enabling each company to more capably solve a key client task: deliver a turnkey, end-to-end portfolio optimisation solution for their enterprise.

To be sure, much work needs to be done across the evolving collateral ecosystem. Sophisticated first movers are investing materially in their technology platforms many years later to address the complexity and breadth of capability that is required to centralise and automate across the scope of their enterprise and global activity.

We think the industry has yet to fully solve the multi-product, cross-venue collateral mobility challenge, but progress is being made. For example, we see material progress in digitising collateral eligibility data, though not all collateral venues are providing support for this capability in a sophisticated manner — leaving the heavy lifting to clients and fintechs to piece it together, where possible. Furthermore, optimising and mobilising bilateral activity, such as CCP margin, has required participants to develop bespoke technology solutions for each CCP.

In response, we are enhancing our ECPO solution with the help of Baton Systems to deliver this capability via the integration of their Core-Collateral service into our ECPO collateral optimisation platform. Our solution enables clients to access real-time CCP data, automate and post bilateral margin in a more optimal way via our ECPO APIs and our recently reengineered, flagship collateral management platform, AccessEdge.

In conclusion, we suggest comparing providers who will perform a proof-of-value exercise very early in the process to de-risk your investment decision while building your internal business case. Clients generally aim to optimise triparty funding, uncleared margin and bilateral cleared margin in priority. Additionally, a provider that is willing to accept data in any format will limit the upfront cost of standardising your data sets.

Finally, it is advisable to sequence settlement venues where optimisation outcomes can be realised quickly. Clients who choose the BNY Mellon platform often cite its advantages of size, the sophistication of the services supporting their programmes, proven resiliency, and the connectivity we have with various market vendors. There is material value to be had, so getting started is important and the first step is generally the most challenging.

VICTOR O'LAUGHLEN
Digital business leader for Clearance and Collateral Management
BNY Mellon

Contact us at collateraloptimization@bnymellon.com →

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