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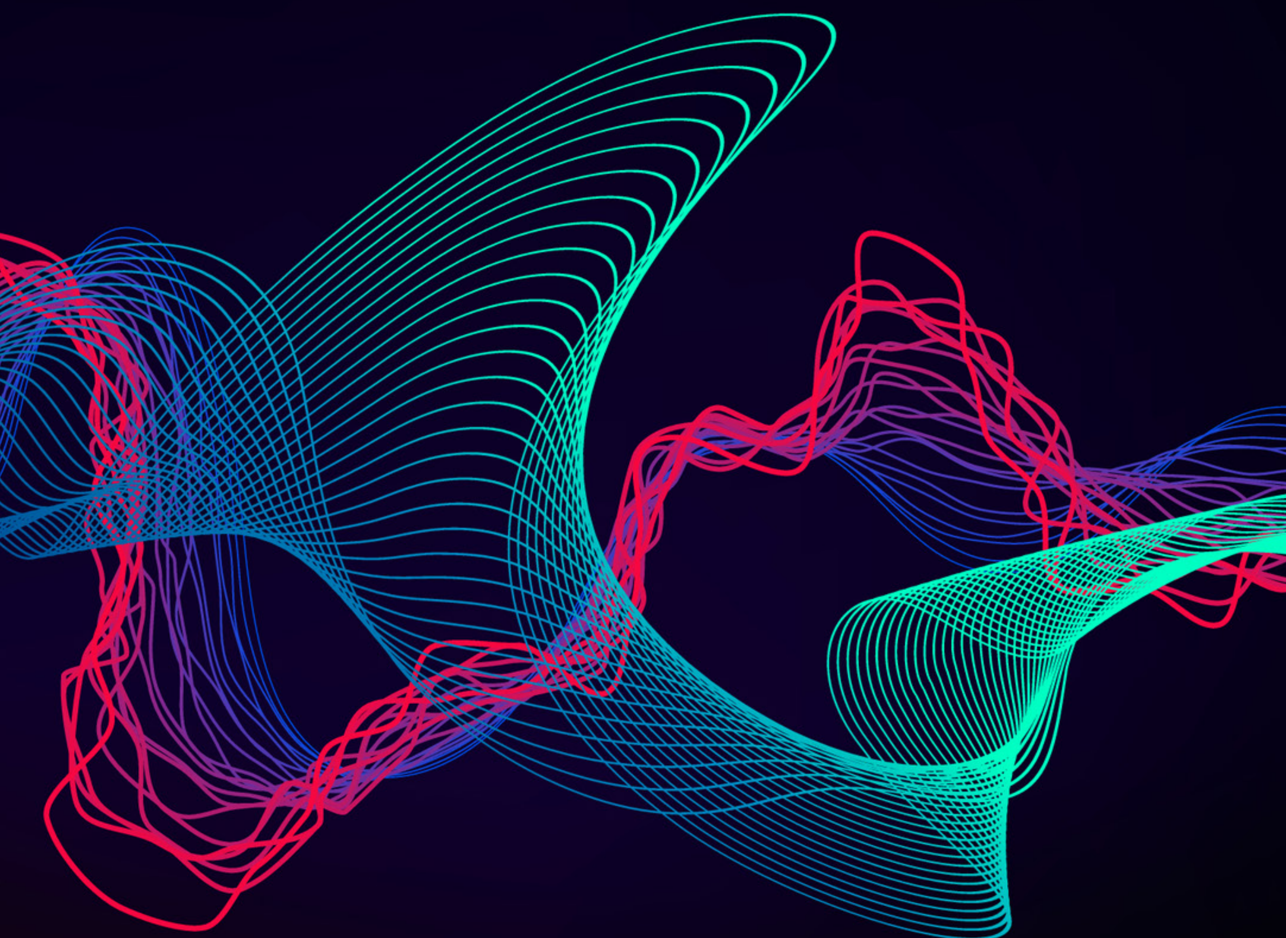

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Breaking waves

With all eyes on the fast-approaching go-live of SFTR, not to mention the arguably bigger challenges posed CSDR, you could be forgiven for momentarily letting the collateral world pass you by. However, change is afoot and you ignore it at your peril.

The SLT Collateral Annual 2019/20 updates you on the Uncleared Margin Rules (UMR) and how technology may be the key to successfully navigating the final two waves of implementation.

Collateral sector heavyweights also highlight the importance of learning the lessons from those that struggled with the first three waves of UMR and warn against letting the noise around other industry events distract from the significant task that soon-to-be in-scope firms face in 2020 and 2021.

Elsewhere, it is argued that collateral optimisation is the final frontier of the securities finance space and that those who take steps to maximise their collateral efficiency now will be handsomely rewarded with major margin savings, among other new revenue opportunities.

The SLT team would like to thank our sponsors who made this comprehensive review of the collateral landscape possible and we hope that for those that do not live and breathe this world every day it can be a faithful guide to current and upcoming trends and events.

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Published by Black Knight Media Ltd
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Contents

The drive for efficiency
Bhavna Haswani and Ed Bond, of J.P. Morgan, offer a market-focused view of collateral trends in Asia Pacific

page 8

UMR – Navigating the waves
Gareth Day, product owner for Pirum's CollateralConnect, offers an introduction to the final two implementation stages of new Uncleared Margin Rules

page 12

UMR: Initial margin and thresholds
Shaun Murray, managing partner of Margin Reform, offers a guide to the final two phases of the Uncleared Margin Rules now due in 2020 and 2021

page 18

Optimising collateral trade costs
EquiLend's Alvin Oh and Iain Mackay discuss the final frontier of securities finance optimisation: collateral complexities; and reveal details of a new collateral platform

page 22

REGULATORY WARS PHASE V: THE FINTECH STRIKES BACK

PAGE 26

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Contents

Margin savings through optimisation

Matt Wolfe, of Options Clearing Corporation, outlines how clearing members can use collateral to offset risk in their derivatives portfolios and realise significant margin savings

page 30

Don't settle for second best

Jason Ang and Trevor Negus break down how the SmartStream collateral solution meets the demands of modern securities lending market participants

page 34

Enterprise-wide optimisation

Bimal Kadikar, of Transcend Street, breaks down why firms should centralise their collateral management infrastructure

page 40

Collateral crunches

Broadridge's Martin Seagroatt looks at how regulatory reform has created new risks for the buy side around sourcing and mobilising collateral

page 44

Microservices: an à la carte approach to collateral

Alan Sheehan, of Calypso, explains the value of combining microservice solutions with seamless integration to core platform

page 48

Squaring the collateral triangle

David Lewis, of FIS, discusses how regulations will have more of an effect on our business now, and in the near future, than they have ever before

page 52

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The drive for efficiency and optimisation

Bhavna Haswani and Ed Bond, of J.P. Morgan, offer a market-focused view of collateral trends in Asia Pacific

Across Asia Pacific, we are witnessing an inflection point as market participants are able to move beyond regulatory implementation to create efficiencies and harness innovation to support future growth. With increasingly sophisticated collateral usage being driven by ongoing market and regulatory change, institutions are adapting to the new paradigms that affect their financing and collateral priorities. This includes the ability to leverage innovative structures intended to expand access into emerging markets and asset types.

At a roundtable hosted by J.P. Morgan, the discussion centered on four themes: inter-entity structures and integration; digitisation and big data; pledge; and the growing demand to finance Asian assets such as local government bonds. We will now explore these in more detail:

Globalisation will continue to drive inter-entity structures and integrated trading

The focus on collateral globalisation and decentralisation has created a more balanced distribution of activity across regional desks. This is driving fundamental changes that include:

- Increased balance sheet allocation to Asian legal entities, with more cross-border trades and the addition of new market participants. Balance inflows have prompted operating model revisions in order to accommodate and better integrate with Asian requirements.
- Increased onshore financing from broker-dealers, who had traditionally utilised a single centralised global financing hub. Trades involving Asian assets are moving from Europe to Asian entities where

they are executed with regional counterparts, utilising cross-entity structures to take advantage of liquidity and reduced settlement cycles.
- A shift in trading behaviour, even for trades that continue to be booked in a European entity. Increasingly, the management and execution of Asian assets are handled locally through Asian desks.

According to the roundtable participants, firms that have already consolidated their fixed income and equities businesses and created an integrated collateral trading desk have improved inventory management, interoperability and asset class liquidity. Consolidated desks can reap benefits that include more flexibility in meeting both existing collateral demands and new requirements stemming from non-cleared margin rules and cleared trades.

For institutions spanning multiple entities/ jurisdictions, the ability to access a single platform that provides a unified view of global collateral deployment and utilisation across the enterprise can be particularly beneficial in meeting interoperability and optimisation goals.

- The ability to back-fill (or top-up) trades with available assets supports full collateralisation in accordance with collateral schedules.
- Onshore financing, in combination with a global, optimised triparty collateral program, allows broker-dealers to efficiently mobilise their collateral across markets and asset classes.
- The ability to reuse collateral can support liquidity and collateral velocity across legal entities and with counterparties. Enhancements to allow further reuse will only increase the ability to move collateral along a chain, however, the growing use of pledge would restrict the ability to reuse collateral under those structures.

Digitisation and big data will be critical to driving future optimisation

Sources and uses of collateral are increasingly critical factors in front-office decisions, making the ability to optimise collateral based on specific institutional parameters and priorities an imperative. As firms look beyond simple collateral allocation and seek to make their collateral work harder, digitisation and big data efforts are expected to play a significant role:

- The digitisation of key operational and legal information will help facilitate a faster, smoother exchange of data inter-entity and with external counterparts, to speed programme establishment and support collateral velocity.
- The adoption of digitised collateral schedules will create additional efficiencies by simplifying schedule updates and improving workflows between collateral providers, receivers, and agents. The introduction of self-service options will allow schedules to be reviewed and updated more efficiently.
- Big data and improved data analytics will facilitate more detailed reporting and become a guiding factor for future trading decisions. We expect to see automated, consolidated data fields from different trading venues; pre-trade analytics on consolidated asset pools to assess the best sources for collateral; optimised allocation algorithms to evaluate usage; and the introduction of streamlined and automated workflows–particularly in onshore markets such as South Korea, Taiwan and Japan.

Pledge will be key to driving global capital efficiency

The market welcomed the release of standardised International Securities Lending Association pledge documentation in March 2019 and an increasing number of pledge supported transactions are now being negotiated with counterparts. Roundtable participants believe that pledge will be more widely used on a global basis as lenders and borrowers become more familiar with the structure, benefits, legal documentation and commercial considerations. They observed that:

- Risk-weighted asset (RWA) benefits and related capital efficiencies are expected to increase the number of trades being supported through pledge structures.
- Pledge structures typically can attract higher spreads or increased haircuts; however, the RWA benefits for dealers mostly outweigh increased premiums.
- Collateral providers are discussing the right level of premiums to be paid and seeking transparency on market pricing to make informed decisions.

Asia was an early adopter of the pledge structure, which has been used since 2012 as a way to address regulatory requirements limiting title transfer movements. Onshore pledge transactions are particularly popular in South Korea, Japan and China. J.P. Morgan currently supports pledge in Hong Kong, Japan, Singapore and South Korea, and China A shares via the Stock Connect.

Desire for full asset utilisation drives demand for Asian bonds

Roundtable participants noted that the days of letting an asset sit idly on a balance sheet have passed: if you are trading in a particular market, you need to be able to finance those transactions. In order to fully utilise their assets, broker-dealers are looking for broader access to Asian bonds—and we are starting to see some market changes in response to demand:

- With the third largest bond market in the world, the expected inclusion of China bonds in leading indices like FTSE and MSCI is anticipated to boost liquidity and build investor appetite to utilise them as collateral. Market participants want to understand how triparty solutions can help to finance these assets, given the current market infrastructure restrictions such local currency control, prohibition of securities borrowing/lending and 'no-trade transfer' rules.
- As high-quality assets, Japanese government bonds (JGBs) continue to dominate Asian fixed-income collateral. However, inventory remains restricted given the substantial holdings that remain with onshore and regional banks. Triparty solutions have been instrumental in easing access to onshore assets and mobilising them for use by the global broker dealer community.
- Singapore, Thai and South Korean treasury bonds (KTB) are increasingly in demand by dealers seeking to finance these assets and generate additional yield. For example, KTBs can be used to segregate initial margin, and can be also used as collateral under a pledge structure using the J.P. Morgan triparty platform.
- Overall, our participants were upbeat about the collateral outlook for Asia, pointing to balance sheet inflows, increased liquidity, additional buy-side entrants, and new structures and asset classes. Further efficiencies are expected as digitisation efforts bear fruit, improving workflows and enhancing the ability to fully optimise global collateral usage. We would like to thank our roundtable participants for so generously sharing their experiences and observations.

Put our experience to work

As an experienced triparty agent with a long history of providing collateral solutions in Asia Pacific, we see first-hand how markets are evolving and work closely with industry groups and market participants as they adapt. As our clients balance local and global collateral deployment, we deliver flexible solutions supported by significant investments in technology—helping providers and takers optimally manage collateral in changing markets.

Bhavna Haswani
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collateral management
J.P. Morgan

Ed Bond
Head of trading services
for Asia Pacific
J.P. Morgan

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Uncleared Margin Rules – Navigating the waves

Gareth Day, product owner for Pirum's CollateralConnect, offers an introduction to the final two implementation stages of new Uncleared Margin Rules

The Uncleared Margin Rules (UMR) regulatory directive originated as a result of the 2008 financial crisis and seeks to reduce systemic risk in the non-centrally cleared over-the-counter (OTC) derivatives markets, by ensuring appropriate collateral is available to offset losses caused by the default of a counterparty. Implementation of the new rules has been looming large over the financial industry horizon since 2016 when its phased implementation commenced. Over the next two years the final stages of this regulation will capture a significant number of firms as the thresholds for applicability get increasingly lower. This document concentrates on the

market concerns, challenges and possible solutions to facilitate a smooth transition.

UMR brings the treatment of uncleared OTC derivatives into a similar line to centrally cleared derivatives where daily initial margin (IM) and variation margin (VM) along with default fund margin are posted to CCPs. Despite the relatively small number of central counterparties (CCPs) the share of central clearing has grown considerably over the past decade, predominantly in the more vanilla OTC derivatives such as interest rate and credit default swaps. Netting efficiency along with counterparty credit risk are the main benefits for clearing members of a CCP, leading to lower associated collateral and capital requirements. While the industry continues to expand the product breadth that can be centrally cleared many of the more complex non-linear interest rate, credit, and foreign exchange products currently remain ineligible for central clearing and are thereby captured under UMR. Therefore, while the regulators have driven the move to central clearing, it is widely accepted that a significant number of OTC derivatives will remain uncleared. This brings a new level of complexity to processing of collateral related to OTC derivatives. This will be much more challenging given the volume of counterparts, lack of pre-settlement reconciliation tools, and number of collateral venues, be it triparty or third-party custodians, all requiring connectivity and the relevant infrastructure to support the processing flows.

It is unclear when the UMR regulations were first devised and brought in. Whether the assumption was that the five separate waves would equate to five gradual phased increments – each capturing roughly a similar number of in-scope counterparties annually. If that was the plan it certainly has not worked out that way.

Such is the inequality in this weighting, especially when considering many of the latter in scope institutions are typically less experienced and less resourced to implement such an operationally intensive, mandatory directive. On 23 July 2019, wave five was split by the regulators into two with an extension of one year for the final implementation.

Even with this concession there remains a heavy imbalance in the required onboarding and set up over the next two years.

Watch out for the waves!

Those that experienced any of the pain of the first three waves will acknowledge the lead time, effort, and resources required in order to be properly prepared.

Firstly, in-scope firms need to consider whether they trade in-scope products. Every entity within each Firm will need to have a full understanding of the UMR rules within each jurisdiction to comprehend the potential applicable rules to their trade portfolio.

Once firms complete the detailed analysis of in-scope products, entities, clients and the distinct rules that apply, they need to concentrate on legal documentation. All pertinent legal agreements will need to be individually re-papered. This includes, but is not limited to, new credit support annexes (CSAs) covering initial margin, in which firms agree how they will calculate IM, thresholds, and

	Wave 1 Sept 1st 2016	Wave 2 Sept 1st 2017	Wave 3 Sept 1st 2018	Wave 4 Sept 1st 2019	Wave 5 Sept 1st 2020	Wave 6 Sept 1st 2021
AANA* threshold	>$3 trillion	>$2.25 trillion	>$1.5 trillion	>$0.75 trillion	>$50 billion	>$8 billion
Est. number of in scope Entities	27	6	12	70	360	725

*AANA - aggregate average notional amount

how they are going to segregate and reflect regulatory and non-regulatory IM. There are also a lot of time consuming know-your-customer (KYC) and anti-money laundering (AML) steps firms need to go through.

Under UMR, all firms calculate for each entity the regulatory daily IM using one of two methods, the most widely adopted being the International Swaps and Derivatives Association's standard initial margin model (SIMM). Fortunately, external help is available via market participants who specialise in SIMM calculations, portfolio matching and reconciliation.

Furthermore, firms need to consider where and how they are going to post collateral to cover daily IM. To-date, waves one to three have utilised triparty as the preferred method of collateral posting. Those with full connectivity to these venues find triparty offers many advantages. Ease of instruction of the IM amount and timely messages back on the un/matched status of these triparty required values (RQVs). Allocation of collateral to the long box should be business as usual and the resulting triparty 'optimisation' runs provide a degree of asset allocation ordering. These allocations can then be fed back by the triparty agent and consumed internally by each participant's in-house exposure management, collateral management, and reporting systems.

However, many wave five and six participants historically do not possess this level of triparty connectivity and therefore have a difficult choice to make. Either spend significant time and resource fully integrating and testing with one of the main triparty providers or take the less onerous but possibly more costly path and choose a third-party provider (where a relationship between the two parties already exists). This route offers less integration effort and set-up, but a firm needs to weigh up whether this is offset by the more operationally burdensome long-term nature of daily bilateral collateral movements.

Collateral schedules detailing the eligibility rules and limits will need to be agreed, drafted, signed and implemented. These then need to be input (digitally or manually) into each firms exposure and collateral management systems, and with schedule numbers likely to be in the thousands, inevitable pressures will bear on in-scope firms, triparty providers and third-party custodians alike.

Visibility of both the collateral posted and collateral received is a must. Best practice dictates that each Firm should then reconcile the eligibility of the two-way collateral against in-place collateral schedules.

Effective post trade front-to-back operations reconciliations and controls also need to be carefully considered, implemented and resourced. Overnight, as firms suddenly exchange additional margin on a more regular basis, more disputes are likely to arise – all of which need to be captured, monitored and resolved in a timely manner. The SIMM calculation, posting of collateral, and reconciliation thereof should all be completed within one business day. The two-way integration between derivative trades systems, creating the IM obligation, and with downstream collateral management systems has to-date proved problematic. Firms need to ensure sufficient profit and loss granularity exists to pass the cost of collateral back to each originating derivative desk in order to accurately calculate the fully loaded trade cost.

Optimisation of the collateral posted is arguably the most difficult problem to solve. What collateral should each firm look to post and how much of each asset grade. Wave five and six firms need to understand the capital costs of each asset, the limitations of posting cash, and have the visibility and ability to transfer higher grade assets for cheaper to deliver eligible alternatives. Segregated assets that cannot be re-used can be a huge drag on cost for the business.

Is help at hand? Technology as a Solution

Technology is potentially the enabler that will help firms comply and meet these regulatory demands. Various external fintech providers can and do offer effective solutions across the UMR spectrum. Pirum is one of these providers.

As a cloud-based, software-as-a-service provider, Pirum has created a network of connectivity across the various market infrastructure providers within the margin and collateral ecosystem.

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To Mitigate: To understand the topic alleviate the issue, diminish the impact and solve the problem.

To Transform: To change in thinking, in form, in appearance or structure and in application.

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Pirum has full connectivity to four major custodians and triparty agents both within the international and US domestic markets, which enables our clients, their counterparts and their outsourced collateral agents to share the benefits of connectivity, real-time data updates and seamless collaboration across our network.

Our clients benefit from a control perspective by utilising a consolidated view of their margin requirements, where real-time data from the network is used to monitor and process the coverage of exposures in an accurate and timely manner. Daily RQV or exposures are sent via straight-through processing and are monitored via message status updates received in real-time from each agent custodian within Pirum's exposure services including ExposureConnect.

Our network is further leveraged by clients in terms of interoperability. By streamlining and automating the full margin lifecycle and by turning complex, manually intensive tasks into efficient, scalable and controlled workflow processes that can be shared with their counterparts and outsourced agents.

Pirum's collateral management system, CollateralConnect, provides users with full visibility into the collateral posted and received against RQV exposure liabilities. It contains fully-integrated, digitised schedules providing a one-stop shop as all collateral schedules are housed in a standardised format within a single system. Inventory can then be independently checked against the relevant collateral schedules, applicable rules and limits. The system offers reporting and monitoring of collateral inventory and venue requirements which can be fed back to our client's infrastructure from a compliance, risk and regulatory reporting perspective.

Finally, these networks are being extended to support other vendor services offering the ability to customise a firm's solution to its requirements including outsourced SIMM calculation providers, third-party trade valuation agents, industry reconciliation services, specialist settlements services, asset servicing and optimisation services.

Numerous benefits can also be gained from this cloud technology in terms of cost-effective deployment and maintenance, speed of integration, flexibility of upgrading, security controls and infrastructure; all of which are outsourced to the service provider rather than locally hosted and maintained.

Calmer waters ahead?

The splitting of the September 2020 wave into two has created some much-required breathing space. The Basel Committee have agreed to this extended timeline in the interest of supporting the smooth and orderly implementation of the margin requirements, however, concerns remain.

The significant number of counterparties coming into scope in these final two phases will create an unparalleled rush of demand on resources across participants and service providers in a compressed time period. To-date, regulatory IM has been largely confined to the interdealer market, yet even those with such available resources, expertise, advanced in-house systems, global connectivity, implementation have struggled.

Experience seen to-date suggest some industry participants underestimated the time to market. The effect of being non-compliant impacts a firms' ability to trade non-centrally cleared derivatives, limiting their options for both taking on and hedging risk. It is therefore essential that firms look to automate as many of the flows as possible and leverage the connectivity that is already well established within the wider collateral ecosystem.

Gareth Day
Product owner, CollateralConnect
Pirum Systems

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Uncleared Margin Rules: Initial margin and threshold management

Margin Reform's Shaun Murray offers a guide of what to expect from the final two phases of the Uncleared Margin Rules

Following recent industry advocacy which suggested that for phase 5 of the new margin requirements for non-centrally cleared derivatives, initial margin requirements may be a step too far and would simply shift risk to other areas, The Basel Committee for Banking Supervision and The International Organization of Securities Commissions (BCBS-IOSCO) have waded into the debate with a series of statements on the matter.

In March, BCBS-IOSCO stated that "significant progress has been made to implement the framework for margin requirements for non-centrally cleared derivatives. A further statement on the 23 July further reviewed some of those advocacy requests culminating in the committee agreeing:

A one-year extension of the final implementation phase of the margin requirements for non-centrally cleared derivatives

The committee went on to clarify what this means, which can be simplified to:

- Phase 5 will go-live in September 2020, with an increased aggregate average notional amount (AANA) threshold of $/€50 billion.
- Phase 6 would go-live in September 2021, with the original 2020 Phase 5 AANA threshold of $/€8 billion.

The BCBS-IOSCO committee goes on to make two additional key points:

- That if you amend legacy derivative contracts, solely to address interest rate benchmark reforms (IBOR), then you are not required to apply margin requirements for UMR; and
- For phase 5 and 6 where initial margin (IM) documentation requirements will involve CSA/CSD's, custodial and operational arrangements, that if you are not going to exceed the frameworks $/€50million group IM threshold, then you needn't be expected to complete all the documentation However, as a covered entity, you are expected to *'act diligently'*.

Since the BCBS-IOSCO statement, ISDA has already reviewed the impact and estimates that "c.350 firms will now be in phase 5 and c.750 in phase 6. Of the relationships expected to be in-scope for the revised phase 5, approximately 28 percent, may breach a $50 million IM threshold within the first two years of their regulatory obligation and therefore need to complete all documentation requirements and custodial arrangements".

The individual regulatory bodies all need to clarify whether they agree with the statements made by BCBS-IOSCO and support the position which is essential to avoid market fragmentation. In this article, we will give our thoughts on the 'act diligently' wording from BCBS-IOSCO and what this could mean with regards to the actions you should be taking.

Initial Margin: What is the impact?

The collecting and posting of regulatory IM for UMR purposes will be new processes for phase 5 and phase 6 and present a unique and challenging set of circumstances. For those impacted, they need to consider myriad regulatory requirements, an industry-driven calculation methodology, two-way IM posting, new and old technology providers and independent custody agents who will segregate their collateral.

The custody element is significant. Every affected entity that is required to exchange IM must have a third-party custodial agent that can legally segregate the assets they pledge, to protect the counterparty with whom they trade, should they default.

In the event of insolvency, the client would utilise those assets to make themselves whole. To support this process there is a huge three-way documentation exercise between the entity, its client and the custodial agents on both sides.

Initial margin: What are the considerations?

Collateral technology innovation over the past five years has hastened the industry's move towards a more efficient processing model. Automation has increased, and more tasks are now receiving straight-through processing (STP) with an onus on management by exception. It is clear though that the new market environment for collateral and specifically for IM purposes has focused on the global systemically important banks (GSIBs), the next largest banks and the buy-side firms with the biggest derivative portfolios.

The counterparties that have not been exposed to the new processes are less likely to have assessed their existing or future operational environments and are likely to be operating in a fragmented and disjointed fashion to some degree.

Noting the significant amount of regulatory cohesion that will be required for any further advocacy efforts to be effective, the problems for the industry remain. There are several weighty challenges to be addressed, for which some experience and know-how to implement will be essential.

A number of these issues have been widely discussed across the industry and having context on how you may solve them is important.

One of the key issues for phase 5 and phase 6 is the ambiguity surrounding the monitoring and management of UMR-related thresholds and 'acting diligently'. Threshold exceedance brings a substantial challenge for the bilateral participant and the custody agent and involves many different parts of an organisation.

First threshold: AANA management

Firstly, and most importantly, is the threshold that determines whether your entire group, that is, all your group of legal entities (as defined in the rules) trading non-cleared derivatives, needs to be concerned with UMR, otherwise known as 'self-disclosure'.

Across your group, you are required to calculate the AANA over a three-month period. Your regulatory body expects you to calculate whether the total notional of executed non-cleared derivatives exceeds the prescribed thresholds for phases 5 or phase 6.

What should you do if you are above the threshold and therefore subject to UMR?

Initially, you should review all avenues to understand whether there is a way to reduce your AANA below the threshold, some of these considerations could be as follows:

- Review your trade inventory to ensure that every product that can be cleared, is cleared. Usually, it is demonstrably cheaper to clear, than to maintain non-cleared derivatives.
- Work with your sell-side dealer panel to

understand whether portfolio compression can be enabled to reduce your risk profile and subsequently your AANA.

- Consider novating large notional trades or a portfolio of trades.
- Bilaterally terminate transactions with individual brokers.
- Remove trading branches from IM CSD's to reduce multi-jurisdictional compliance.
- Review Intra Group (IG) trades and determine whether all are necessary for risk management purposes. (IG trades only count once as part of the AANA calculation).
- Consider utilising risk simulation strategies, offsetting tools and exchange-traded derivatives, to manage portfolios more effectively.

When you are satisfied that you have exhausted all options and remain over the AANA threshold then you need to commence the legal and operational journey to compliance.

Second threshold: IM management—the basics

The second threshold is about the bilateral exchange of IM with both parties pledging once they have exceeded the IM threshold. Unlike VM, this calculation is not on your mark-to-market (MtM), but the IM sensitivity calculation of your portfolio.

A critical component of acting diligently is understanding whether you are going to exceed the €/$50 million IM threshold with your trading counterparts and therefore need to commence with the documentation requirements for IM and custody.

The €/$50 million threshold is allocated per group and not per legal entity. The allocation is very simple for a one-to-one trading relationship, you can utilise the whole €/$50 million threshold. If you are part of a group structure where different entities are trading derivatives with the same client, you need to be very specific and deliberate on which entities will utilise the threshold. Regulations require an independent third-party to segregate the two-way collateral that is pledged.

What does margin reform suggest you consider as part of that deliberation?

- Which group entities trade non-cleared derivatives, are they a branch or subsidiary?
- Are all entities required to continue trading non-cleared derivatives, or can equivalent economic objectives be achieved utilising alternate instruments?
- Can all entities use the Standard Initial Margin Model (SIMM) for their existing portfolios?
- Who has oversight and visibility on any additional trading relationships versus that banking group?
- Who is responsible for the increased funding costs for IM should you breach the threshold?
- Determine your critical trading relationships and decide whether non-critical relationships could be managed under the threshold to avoid the immediate necessity to document.

Let's assume that before the negotiation process commences you have understood where your risk lies and have constructed your preferred allocation. What happens if your dealer disagrees? What happens if they want to stop trading with you out of certain entities or jurisdictions? Does your legal documentation playbook cover these types of exceptions and the management process to solve them?

Multi-managed clients: The not-so-basics

As thresholds are allocated at group level, legal entity identifiers (LEIs) are the standard data codes across the industry to enable client identification. If a client executes non-cleared derivatives through multiple asset managers, the €/$50 million threshold must be shared or allocated across those managers.

At the point of the legal negotiation, the dealer, client and asset manager, need to understand how that is going to happen so the €/$50 million threshold is not exceeded. This is not a slam dunk, it needs pro-active discussion, analysis and decision, therefore, what are the questions to ask?

- You are an end client, impacted by UMR and execute through multiple asset managers. Will you advise each manager how much of the €/$50 million they will be allocated to face MR bank group?
- You are an asset manager are you expecting your end client to tell you the threshold you will be. allocated in the IM negotiation with MR bank group?
- As a dealer, how are you expecting to deal with this scenario during the negotiation process.

We believe these three unanswered questions potentially neutralise some of the benefits of the BCBS-IOSCO statement and ongoing clarifications from regulatory bodies especially where there is a multi-managed angle.

This is an industry problem which means collaboration is needed to recognise the issue and determine how the process can be managed during the negotiation period. At Margin Reform, we are aware of one technology provider diligently working to deliver an IM threshold monitoring service (IM-TMS) which could be transformative for the future of threshold management e.g. 'variable thresholds. If you were to exceed the €/$50 million threshold today then you would be in regulatory breach and required to manage that.

Security and custody: What can be learned?

Various industry bodies have been collaborating with the dealers, buy-side and custody agents to create solutions that increase automation and efficiency for the challenges that the industry faces when dealing with segregated regulatory IM. The five main areas of concern have been.

- Onboarding has been slow, manual and mainly paper-based.
- Automation replacing the use of faxes and portals to achieve higher STP.
- Reporting: the reconciliation of collateral balances has been slow and reporting poor and cumbersome.
- Same day settlements: ensuring that collateral settles on a T+1 basis, as per regulations.
- Market utilities: improving interoperability between the buy and sell side, and increasing STP.

Conclusion and opportunity

Even with recent advocacy efforts, counterparties who are phase 5 or phase 6 should have started work to understand what their IM journey looks like. Most of the processes that will be needed to support IM will not be well known to the majority of these firms; therefore the decision-making process is difficult when one considers challenges like SIMM calculation, backtesting and benchmarking, IM segregation, triparty or third party and the governance and control environment.

There is evidence that suggests many of the impacted entities are still going through the stages of discovery on the complexity of the UMR IM requirements.

To educate themselves they must cultivate knowledge through those that have already gone through the process and the industry vendors who have experienced the issues through the previous phases of IM.Cementing that understanding is going to be critical for institutions. They need to be able to mitigate the risks, problems and issues that present themselves as they build, develop and execute on an implementation plan.

They also need to utilise the external levers available to them and give themselves the best opportunity to end up with an efficient, robust and integrated operating model that transforms their internal collateral and margin capabilities.

One aspect that does not go away, though, is that of control and oversight. One must question whether the statement from BCBS-IOSCO to 'act diligently' is something that groups with large subsidiary structures or end clients working with multiple asset managers understand or can cope with. Based on the very complex nature of everything we have highlighted, maybe, the certainty of proceeding under an assumption of a zero-threshold for IM exchange is preferable to a situation that leaves much ambiguity.

Shaun Murray
Managing partner
Margin Reform

Optimising the cost of a collateral trade

EquiLend's Alvin Oh and Iain Mackay discuss the final frontier of securities finance optimisation: collateral complexities; and reveal details of a new collateral trading platform

Can you see your assets? Can you see your obligations? Are you managing your regulatory needs appropriately? Being able to view inventory and collateral obligations with certainty is a basic need of a collateral manager, however, it is not as easy as it may seem.

At a time when the securities finance industry is driving for technology solutions to manage the new paradigm of increased regulatory oversight, the perception that a collateral trader can view their obligations on an intra-day basis across business silos (yes, they still exist) and utilise available inventory is misunderstood—just don't mention Excel spreadsheets!

The history of the securities finance market has meant that a proliferation of internal and external systems has evolved over time for differing needs to manage what has become an increasingly complex business within a bank's infrastructure and for its underlying clients. Creating solutions to enable clients to manage these without extensive internal investment is EquiLend's ambition.

With most other areas of trading and post-trade within the securities finance industry now optimised and, in many cases, automated with full transparency through systems like EquiLend, one of the final functions within the industry to become truly optimised is collateral. The most prudent market participants are now considering not just borrow rates and revenue generated but evaluating the total cost of a collateral trade in order to maximise their efficiency.

Discussions about collateral use among counterparties and with technology solution providers such as EquiLend are more prevalent than ever. This stretches across various areas, from front-office trading, to the middle and back office, about the overall efficiencies in which collateral is being used.

Collateral trade workflow consists of three areas, each of which faces its own challenges when considering optimising the costs of the trade. Across these three areas, in order to achieve a truly optimised process, firms must:

Inventory management: Understand their long or short box and identify the costs of using that inventory;
Trade execution: Be aware of who the appropriate counterparts are and be able to execute these trades in an automated way;

Lifecycle Management: Maintain a frictionless trade by leveraging straight-through processing (STP) for settlement and achieve a real-time view of exposure positions.

Unlike a traditional stock loan transaction, funding and financing trades are much more complex; especially since they often involve termed funding. These trade structures are high-touch, and are often massive in notional value, in the range of a few hundred million dollars per trade. Today, there is also little transparency in the market where these instruments are traded. This involves an arduous process of counterparty outreach, a manual negotiation process, as well as a tedious operational process in the maintenance of these trades. This results in a challenge for firms looking to accomplish optimisation in the three areas mentioned above.

From collateral upgrades and downgrades to cash financing trades to equity for equity workflows, the various types of funding trades are fundamentally different from regular 'name-specific' stock loan transactions. Each of these transactions consists of multiple underlying pieces of collateral, for which they are subject to all the usual post-trade operations, including mark-to-market, corporate actions, etc.

EquiLend is ideally placed to help firms solve these collateral challenges. Just this year, we have begun implementation of a variety of services to support clients across their inventory management, trade execution and lifecycle management functions to streamline the collateral process and to calculate the true cost of doing a collateral trade. EquiLend's new solutions in this space include:

Inventory management

EquiLend Spire, offered by EquiLend and powered by Stonewain, is a state-of-the-art platform and technology-driven hub for securities finance firms of all types, including agent lenders, prime brokers, retail brokers, beneficial owners and collateral managers. EquiLend Spire's order and inventory management module serves as a dashboard for trading, trade support, controls and book management. The feature-rich module includes

box reporting, monitoring functions and identifies easy-to-borrow collateral positions, among a range of other capabilities, providing full transparency into a firm's long and short positions. As a result, users gain a clear picture and control of their inventory, enabling them to identify the cost of using that inventory. This is particularly insightful in the opaque collateral trading industry.

Trade execution

EquiLend's Collateral Trading platform is an extension of Next Generation Trading (NGT), our flagship trading platform that facilitates securities lending transactions between counterparties. Collateral Trading offers a similar concept of a bilateral trade negotiation platform, allowing suppliers of upgrade securities to broadcast inventory to their counterparts, and also for clients looking to upgrade their collateral to initiate upgrade requests to the suppliers. This will streamline the market discovery process that takes place manually right now. By using the platform, clients can quickly reach out to multiple counterparties to seek liquidity and to broadcast upgrade intent.

The first phase of the release, due in Q1 2020, will support collateral upgrade and downgrade trades, with subsequent releases adding functionality for all types of funding trades.

Lifecycle management

Firms are increasingly interested in understanding how operationally efficient their counterparts are in post trade. As they become more aware of their collateral costs, firms desire to monitor the operational performance of their counterparts to ensure these costs are kept at a minimum. Specifically, the areas they are looking at are:

- Reduced manual intervention with regard to trade booking
- Settlement efficiency
- Overall reduced latency in post-trade management, including triparty and bilateral trades

EquiLend Exposure provides a real-time overview of portfolio management that exists between clients. It tracks settlement of trades and collateral throughout the day. Helping clients manage their inventory, the system reduces their exposure and identifies problems quickly. This allows resolution of these issues to be addressed immediately and provides a level playing field for all user firms. Gone are the days that clients will trade with counterparts with the biggest balance first—if a middle-tier client is more operationally efficient, they will now get the business.

All three solutions—EquiLend Spire, EquiLend Collateral Trading and EquiLend Exposure—offer seamless interaction and connectivity for firms looking to optimise their collateral trading. Each may be used in isolation to complement a firm's activities in this space, while together they work harmoniously to power a collateral trading desk, offering businesses complete insight and control in this once-opaque market.

Please reach out to us if you would like to discuss our solutions for driving down costs and streamlining your collateral trading.

Alvin Oh
Global product owner, trading
EquiLend

Iain Mackay
Global product owner, post trade
EquiLend

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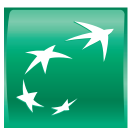

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REGULATORY WARS
PHASE V
THE FINTECH STRIKES BACK

A long time ago in a galaxy far, far away ... it is a period of civil war. Rebel fintech spaceships striking from a hidden base have won their first victory against the Galactic Regulatory Empire. Vermeg's Helen Nicol and Richard Gomm report

The above sounds like fiction doesn't it? However, for many institutions the Uncleared Margin Rules (UMR), represent the regulatory equivalent of the Death Star depicted in the Star Wars films of yesteryears. The ultimate weapon with the power to destroy market liquidity and collateral mobility that has firms fleeing at warp speed in the Millennium Falcon like Han Solo and Chewbacca.

UMR represents a regulatory explosion which has the collateral pool shuddering at the concept of an unprecedented demand for collateral comprised of high-grade assets and an increase in haircut provisions. While it is noted that increased collateral requirement in the market means greater safeguards against default, conversely the ever-increasing demand for high-grade collateral also has an inherent destabilising market factor. Buy-side institutions have limited access to large inventories of high-grade collateral which gives rise to the phenomenon known as 'collateral scarcity'. The current economic climate coupled with stressed market conditions only exasperate this notion which, in the collateral world, means higher margin call volumes, an increase in the number of margin disputes and adverse operational capacity implications.

Since the 2008 financial crisis, regulators have made huge strides towards stabilising the global financial system via

regulatory reform. This has essentially created a new galaxy of regulations, consuming all forms of high-grade collateral in the market, leaving a trail of fewer and fewer smaller institutions and buy-side firms in its wake as a direct result of the new and all-encompassing collateral requirements. Additionally, liquidity ratios and capital requirements are coming under increasing pressure from regulators, all of which are fuelling the regulatory implosion and ultimately creating a collateral and regulatory blackhole.

However, institutions that were due to be impacted by UMR phase 5, are now breathing a huge sigh of relief after the Basel Committee and IOSCO announced a one-year extension. Firms with an aggregate average notional amount (AANA) of greater than €8 billion, but lower than the interim €50 billion threshold, will now be required to exchange initial margin (IM) in September 2021, 12 months later than the original mandated date. However, despite the stay of execution for many firms, it is prudent to continue the journey in space and time towards regulatory compliance. Streamlining IM requirements is much greater than purely choosing between schedule-based (GRID) IM and standard initial margin model (SIMM) calculation methodology. Firms need to take a strategic, rather than tactical approach maximising automation, connectivity to triparty agents and central counterparties (CCPs) optimisation and efficient inventory management. This will ensure regulatory compliance, collateral mobilisation giving rise to competitive edge.

For years many firms have considered the move away from siloed processes but have been restricted by the thought of costly, time-consuming, multi-year projects to update antiquated infrastructure. Now, however, the benefits are beginning to come to the fore with opportunity to deliver real cost and efficiency benefits.

Regardless of the size of the organisation automation and the increase in levels of straight-through processing (STP) are a key topic but are often limited by internal processes and old technology. Connectivity to internal and external platforms continues to be an issue.

How to restore order to the Galaxy: Consolidation of CCP clearing operations

Mandatory clearing began for the sell side in 2016 and has rolled out with differing levels of success. CCPs set IM to reflect their estimate of the riskiness of the underlying transactions. For the buy side, one of the main challenges is that they often do not have direct access to the CCPs and therefore need to decide on clearing brokers – several of whom are currently reviewing whether to withdraw client clearing services.

The leverage ratio capital requirements make clearing derivatives on behalf of clients more expensive for the dealer banks. They now have to consider the number of trades they are willing to clear, allocation restrictions, credit and concentration limits and the number of clients they are willing to clear on behalf of.

Fortunately, there are now some new market participants coming into the marketplace that are offering hosted solutions for client clearing, geared towards smaller participants that may not be able to clear through large dealers. By providing a hosted or cloud-based infrastructure, the new participants therefore remove technical burdens and, by providing subscription-based models, ease the cost implications enabling wider access.

Many organisations still operate separate collateral pools to manage margin. Often this means the structure does not enable CCP margin netting and compression to realise collateral and cost efficiencies for revenue generating opportunities and can result in sub-optimal use of collateral inventory. If you include CCP margin calls and settlement liquidity, then there is potential to utilise your triparty collateral arrangements to service a wider pool of business needs.

Firms looking to achieve the benefits and efficiencies of clearing need to choose which CCP for which asset class and consider pre trade margin technologies as to their choice of venue and ongoing margin impact.

Triparty collateral services

Historically, these services have tended to be used to service specific business areas such as securities lending or repo. This leads to the management of separate collateral pools for the majority of institutions, particularly the larger sell-side firms. Now, with the new IM requirements the use of triparty segregation

is expanding to the bilateral over-the-counter (OTC) market. If fed into a cross-asset inventory firms will now have access to view data across multiple business lines for asset selection.

In reality, the industry is still some way from standardisation particularly as every triparty or custodian has a slightly different format for SWIFT messaging, which can make the configuration somewhat burdensome. Clients drive for standardisation is often restricted by the drive for competitive advantage as end users request bespoke calculations, statements, financing and eligibility criteria flexibility. Rather than relying on the cheapest-to-deliver algorithms, clients often demand bespoke rules around optimal allocations. Recent changes have meant more advanced organisations are no longer relying solely on triparty selections as the best use of their assets, choosing instead to make their own decision and include a wider inventory, which includes bilateral asset pools.

Optimisation–pre and post trade

Increased volumes, additional complexity and global regulations mean there is a growing desire to reduce the fragmentation of global collateral pools and aggregate views and control of assets on a cross-border basis. Capital charges and leverage ratios are also driving the requirement for new calculations to be added to existing optimisation methodologies, with cheapest-to-deliver no longer being the only consideration. This creates additional complexity and means collateral and trading platforms must now offer greater flexibility for the data they hold and process, in order to provide visibility and increase transparency linked to the regulatory reporting requirements. As the cost of the bilateral OTC trade rises, there is a greater market requirement pertaining to the use of pre-trade optimisation techniques which previously fell outside of collateral consideration. Firms need to be able to run multiple pre-trade optimisation methodologies across both internal and CCP models (standard portfolio analysis of risk, value at risk, historical value at risk, etc) on both a scheduled and ad-hoc basis, especially in times of market stress.

Numerous vendors now provide access to these tools for those that do not have inhouse solutions.

Collateralisation — money market funds

Regulatory pressures are creating a demand for non-cash collateral as the need to expand the availability pool particularly for cleared and non-cleared derivatives grows. However, some financial entities do not have the infrastructure to efficiently post non-cash collateral for these types of transactions and so are reviewing the use of the money market funds.

Money market funds are already used by a large number of market participants across a range of industry sectors and are more liquid compared to some other options. In the event that a borrower defaults on a loan transaction, collateral receivers may generally liquidate the particular holding of a money market unit on the same day or next day, depending on the cut-off time.

Modern technologies in collateral management

Web giant corporations like Google and Amazon are driving a new wave of advanced technologies and cloud providers making it available to 'regular' IT teams. Machine learning (ML) is behind shopping suggestions ("other people bought …"), targeted advertisements and even the infuriating changeability of airline fares. Broadly speaking, anywhere inferences and predictions can be gleaned from pattern matching, classification and data relationships are useful, ML has an applicability. In the new universe of collateral management this can include: collateral optimisation against predicted trends, choosing securities from your inventory ("other people booked …"), operation optimisation from analysing breaks from STP, the list is endless and limited only by imagination.

In conclusion, since the collapse of Lehman Brothers, fintech companies and their solutions to the above have been the industry equivalent of Luke Skywalker aiding the fight against Darth Vader in the guise of regulatory reform. Therefore, despite institutions being pursued by the Empire's regulatory agents, firms can ensure a smooth flight aboard their starships, custodians of their robust implementation plans ensuring regulatory compliance, collateral mobilisation, competitive edge and ultimately restoring freedom and order to the galaxy.

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Margin savings through collateral optimisation

Matt Wolfe, of Options Clearing Corporation, outlines how clearing members can use collateral to offset risk in their derivatives portfolios and realise significant margin savings

As the world's largest equity derivatives clearinghouse, Options Clearing Corporation (OCC) typically holds approximately $120 billion in collateral, of which at least 70 percent is equities, due to the correlation of equity derivatives and equities. We have an innovative methodology for measuring risk and valuing collateral that allows our clearing member firms the opportunity to post, collectively, billions of dollars less in collateral every day.

Most clearinghouses determine their margin requirements by assessing the risk of derivative positions in an account, which clearing members meet by posting collateral. The collateral's value is typically a haircut using a standard schedule: government securities at 98 percent and equities at 70 percent. OCC includes the posted collateral in the margin requirement calculation, which provides a more accurate risk assessment by looking at the correlation of derivatives and the collateral. In many cases, OCC's methodology will value certain securities at greater than their market value because they reduce the risk of the portfolio.

For many years, clearing members tended to collateralise their accounts according to what was the most efficient operationally. More recently, clearing members have been pursuing more capital-efficient strategies to reduce their margin requirement by posting collateral with the greatest risk offset. Depending on the positions and current collateral, this optimisation of collateral can generate significant savings.

OCC publishes daily files of securities that are eligible for deposit along with OCC's calculated value of each security. These files are account-specific and change daily as prices and the impact upon the portfolio changes. Some clearing members have started processing these files to find the securities with the greatest value and pledging those to OCC. Anecdotal evidence indicates that substituting-in equities that reduce the risk profile of an account may allow clearing members to meet their margin requirements by posting collateral with significantly less market value, in some cases, tens of millions of dollars less. There are second-order savings as well for firms that are shifting from high-quality liquid assets like cash or government securities to equities.

Some firms occasionally check the file and pledge a few highly-effective equities while other firms incorporate these OCC-specific haircuts into their global collateral management and optimisation programmes. There are three challenges to optimisation: gathering a complete inventory of equities available for deposit, determining the internal cost model for using collateral, and the operational process for pledging equities.

Firms are addressing the first challenge by investing in technology and merging related departments so that the department responsible for determining collateral allocations has a more complete picture of the inventory. The challenge of aggregating multiple collateral pools across large multi-national banks is great, but so are the potential optimisation benefits of that combined pool.

The second challenge has its roots in the regulations that followed the 2008 global financial crisis.

Regulators implemented capital and liquidity requirements designed to strengthen banks. Within the context of collateral, banks needed to set aside more capital to address exposures arising from collateral being deposited with counterparties. These increased capital costs were pushed down to trading desks whose positions are generating the collateral demands, but these costs are difficult to accurately calculate due to differences related to the type and source of collateral and the regulatory regimes. Over time banks have improved these calculations, which has incentivised trading desks to reduce their costs by using fewer high-quality assets and improving their efficiency.

Regarding the operational process of pledging equities, DTC has a pledge programme for granting a lien over securities. There is a real-time automated link between DTC and OCC for communicating new pledges and releasing pledged positions, but the process for initiating pledges or releases at the clearing member is still often a manual process using DTC and OCC screens. This has encouraged clearing member to optimise for operational ease rather than collateral efficiency. Many firms and vendors are implementing systems to automate this process to improve the velocity of collateral movements and the efficiency of their deposits.

Many firms that addressed some or all these challenges realised significant savings from their first optimisation, and they usually were able to maintain that efficiency with minor adjustments every three or four weeks. Establishing a process of optimising equity deposits at OCC helps to lower the risk in clearing accounts and reduces the amount of collateral needed to cover that risk. This optimisation can reduce the capital requirements for banks and increase the profitability of trading desks.

Promoting resilience and helping clearing members to be more efficient with both their capital and operations are important goals for OCC. We continue to work with clearing members to help them access and understand the tools available to improve their collateral efficiency.

We have several systems enhancements planned as part of our Renaissance Initiative to support operational efficiency, including collateral processing enhancements with greater automation of cash and government security transactions, accepting additional types of eligible collateral and permitting delivery via the Federal Reserve for Escrow deposits, and improvements to enable clearing members to add and allocate letters of credit to their account(s) in one step. OCC is also exploring ways to improve the transparency of collateral haircuts and provide additional application programming interfaces to simulate portfolios of derivatives and collateral to help members better understand, anticipate, and manage the risk of their clearing accounts.

The inclusion of collateral in the margin calculation provides a more accurate assessment of the risk. By selecting collateral that offsets risk in derivative portfolios, clearing members may be able to realise significant margin savings.

Many firms that addressed some or all of the potential challenges realised significant savings from their first optimisation

Matt Wolfe
Vice president of business development
OCC

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Don't settle for second best

Jason Ang and Trevor Negus break down how SmartStream's cloud-based collateral solution has improved to meet the demands of the modern securities lending market participants

In the current regulatory environment, it is essential that organisations have access to systems that address their needs across three key dimensions, namely: Proven and stable; secure; easily accessible.

In recognition of the above drivers, SmartStream have developed their collateral software-as-a-service offering (SaaS) to address these specific challenges.

Proven and stable

The SmartStream collateral solution has been developed with leading global financial institutions to provide industry leading control, compliance and cost control. It is now available in the cloud with SaaS deployment. It continues to aid our clients in meeting time-critical regulatory deadlines, but with reduced costs associated with hardware, maintenance, installation and upgrades. Clients will experience rapid implementation and upgrades while having access to TLM Collateral's proven best-in-class, feature rich functionality. This includes end-to-end workflows and connectivity to handle not only uncleared margin rules (UMR) but also complex scenarios of regulatory arbitrage. Unlike the more traditional modes of deployment, this model is vastly cost-efficient to the end client.

Rapid upgrades: TLM Collateral is developed using the Agile methodology of software creation. As such, production ready software is available every two weeks. However, we do not force our clients to take every upgrade as we understand that there is due diligence testing that our clients may need to do before taking an upgrade. Our clients can opt to take a release only when it suits them. TLM Collateral SaaS is fully aligned with our clients availability and timing.

Quality assurance testing as a service: the quality of our software is very important to us. We understand that software issues not caught during development can cause a lot of wasted time and disruption not only to our clients but to our process as well. We also have to maintain the confidence of the financial institutions that rely on us to ensure that they are in compliance with regulations. To that end, we use a test-driven development as part of our Agile process. We run thousands of automated tests every time our software is checked in, and we collaborate with our clients to incorporate their tests into our builds. Importantly we publish those tests results to our SaaS clients so that they can see how things change, reduce their testing effort, and use it to satisfy their internal compliance needs. For clients who have more specific needs, we can supply personnel who can test on their behalf using their scenarios on their test data shapes. Our clients benefit from our rigorous user acceptance testing (UAT) regime,

which reduces internal costs, build confidence, and shortens time to market.

UAT environments: we supply client-specific UAT environments where importantly data is not comingled. Clients can have access to our latest builds to test and see our latest software enhancements. These UAT environments allow clients to get first sight of what is going on, provide feedback and perform their own testing should they desire to do so. Given that the data again is stored in separate databases for each client, there is no risk of competitors accessing or accidently seeing that test data.

Support: the TLM Collateral Support members have been with the company for more than 10 years now and know our product and clients very well. They are able to help our clients with the software, and be a conduit for new sources of functionality for our product managers. SmartStream has been providing SaaS on the cloud since 2009 and has a diverse international client base that includes investment banks, hedge funds, asset managers, service providers and retail brokers with users across the globe. We provide hosting in various locations across the world so that we can comply with any local regulatory requirements. Our Singapore clients, who are supervised by the Monetary Authority of Singapore, can fully comply with local regulations to host within Singapore. Whereas our European clients can fully comply with General Data Protection Regulation requirements because we can host in Europe for them.

Leveraged expertise: SmartStream has an innovations lab which pioneers artificial intelligence and machine learning applications. TLM Collateral Clients benefit from the innovative efforts of our data scientists as they collaborate with our product experts to bring online practical strategies for collateral management.

SmartStream is always looking at improving and incorporating innovative technologies and practices to improve the user experience and we envision ourselves as a company that continually invests to provide quality software for our clients.

Secure

Segregated data: in an effort to provide cloud-based solutions in a cost-effective manner, most cloud offerings take advantage of comingling of data, and consequently rely on inherent application and database security to protect the data assets of their customers.

SmartStream have chosen a different approach for the collateral solution and intentionally segregate each client's data in a totally separate database. Our clients in the financial industry all understand the dangers of data breaches where proprietary data might be accidentally shared or seen by another party or competitor. Smartstream take the security concerns of our clients as being paramount, particularly in light of recent breaches in comingled cloud incidents.

Security: the on-demand (SaaS) team operate with a robust information security framework. They have intrusion detection systems, distributed denial of service protection, and all appropriate web application firewalls. Furthermore, each and every client instance is fully hardened and client's environments are regularly scheduled for penetration testing. SmartStream is ISO27001 certified. We also have SOC1 Type two, SOC2 Type two and SOC3 certification and are compliant with the latest European Banking Authority regulation around the requirement to perform audits on the physical locations of the data centers.

We partner with Amazon Web Services (AWS), the largest cloud services provider with the most mature product offering like AWS Shield and AWS Cloudwatch. This means we can offer instant scalability and active disaster recovery management.

With our experience in cloud deployment comes robust business continuity planning and disaster recovery tests which are run on a regular basis. Our data centre staff comprises of Certified AWS practitioners with years of experience. Clients no longer have to worry about the daily management of the platform as that is transferred to SmartStream. SmartStream provides the management of the hardware, reduce the need for local database administrators, and reduces the need for application support personnel. All this allows our

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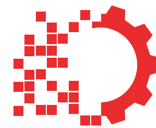

DIGITAL TRANSFORMATION

clients to focus on running their business and revenue generation as they leverage our expertise to help lower costs and risk.

Easily accessible

By providing our solutions in association with AWS, we provide our clients with quick and easy access to an environment that satisfies their control, compliance and cost requirements. Furthermore, it gives access to a mature and battle-tested collateral system that meets all regulatory requirements, and is connected seamlessly to the market

Connectivity: the collateral environment today requires connectivity to the whole over-the-counter (OTC) derivatives ecosystem. We partner with companies and service providers to provide agreement creation services, standard initial margin and sensitivity calculation services, margin call messaging services, reconciliation services, and clearing services. We also have public application program interface that enable our clients to seamlessly connect TLM Collateral to their upstream and downstream internal systems permitting essential STP and automation.

Compliance and UMR: TLM Collateral is up to date with all the required functionality for BCBS/IOSCO Uncleared Margin rules including phase five and phase six. Our experienced product managers who comprise of former industry practitioners participate and speak at various working groups, industry conferences while soliciting feedback from both our buy and sell-side clients to build consensus around interpretation and execution of these regulations.

The software has best-in-class workflows, as well as a sophisticated agreement warehouse allowing for complex variation margin and initial margin agreements with advanced eligibility and concentration limit features. Complex trade matching rules can be accomplished efficiently and templates of agreements can be stored to quickly onboard similar credit support annexes.

TLM Collateral is not limited to uncleared over-the-counter derivatives, as we also support cleared derivatives, as well as repo and stock borrow loan. There is also advanced reporting and management information dashboard capabilities to help monitor and report externally and internally.

Don't settle for second best

Collateral management is a business critical function. If not done correctly it can affect a firm's reputation, and their bottom line. Firms should insist on the best. Do not accept commingled data. Do not accept poorly tested software. Do not accept forced upgrades. Furthermore do not accept limited functionality, Speak to Smartstream.

Jason Ang
Collateral management program manager
SmartStream

Trevor Negus
Product manager
SmartStream

HQLA^X

An innovative market solution to mobilise collateral

New Technology - New Efficiencies

Interoperability across custodians without moving securities

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Reduction in intraday liquidity requirements

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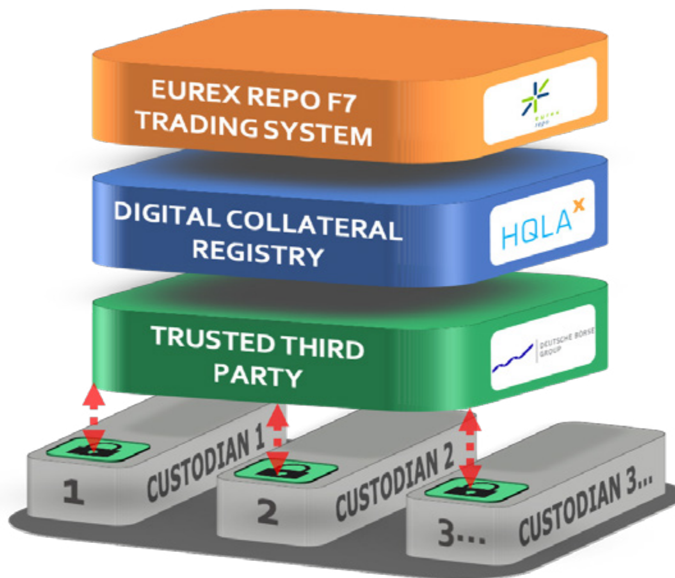

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Enterprise-wide optimisation: Yes, it's possible!

Bimal Kadikar, CEO of Transcend Street Solutions, breaks down how and why all firms should be aiming for a centralised and optimised collateral management infrastructure

At Transcend, we have the benefit of discussing some pretty major issues that banks continue to face in meeting their strategic objectives for optimising collateral, liquidity and funding. Some are looking to overcome one hurdle at a time, such as securities lending, or specific products such as derivatives, and go from there. But most, if not all, also have their eye on a bigger prize: centralisation. Whether that is an immediate strategic priority or one that is a few years out, collateral optimisation is a key part of the journey.

What are some of the key challenges that firms face?

Evolving market structure changes, such as competing regulations, have been the primary driver for firms evaluating their collateral and inventory management capabilities. They need to rethink their processes and policies across the firm to compete more effectively, meet requirements and improve their balance sheet. However, fragmentation of liquidity, funding and collateral resources within and across business lines remains prevalent. This is largely due to legacy organisational and operational structure within the bank. Traditional silos – repo, securities lending, over-the-counter derivatives, exchange-traded derivatives, treasury and other areas – actually tend to drive similar processes to fulfill similar needs, but for different aspects of the overall business. This is not only inefficient and duplicative, but then thousands of collateral and funding decisions are also made in silos, without a purview, or even a defined objective, to optimise across the firm.

This lack of internal coordination is magnified by the complexity of orchestrating other parties such as triparty agents, central counterparties (CCP), exchanges, etc – and on a global scale – preventing enterprise-wide harmonisation.

How do you define optimisation?

Optimisation is a process that ensures firms are taking a coordinated approach to identify the trading and collateral allocation decisions that will drive maximum efficiency across multiple dimensions including funding costs, risk, balance-sheet, headcount expense, transaction fees and client experience etc. For example, it's possible to optimise collateral pledges to a triparty agent considering haircut, tenor, among other things, and that is a very valid business case. But, real-value scales exponentially when you consider different margin centres, such as derivatives and across businesses (equities + derivatives + fixed income), and include a wide variety of conditions in the same optimisation routine. So, the potential bottom-line results are maximised when implemented firm-wide. Optimisation is achieved once the data, processes, systems (including third parties) and workflows are connected, coordinated, transparent and collectively smarter.

What are the advantages of optimising collateral management?

With an optimised collateral management framework in place, users across the organisation can determine the best sources and uses of collateral that meet obligations while minimising risk and cost in a coordinated fashion. They can evaluate and act on a variety of different optimisation scenarios to drive efficiencies across business areas such as repo, securities lending, derivatives margining and CCPs.

Collateral optimisation can also drive workflow improvements and automation. For example, rules-based or algorithmic recommendations can automatically flow into downstream systems for straight-through processing (STP), thereby reducing time to process and error rates.

Collateral optimisation also promotes collaborative behaviours. It is a journey not a destination. Once users in one part of the business gain a holistic understanding of collateral and liquidity across the organisation, they can make better decisions with the wider perspective of what will best benefit the firm. And, going forward, they can be more adaptive to changes in the market or regulatory landscape.

What steps are required for collateral optimisation?

Capturing the tremendous amount of data from typically disparate systems is a key foundational step towards optimisation. This sounds complicated but is quite achievable, even firm-wide with the right technology. This includes capturing and coordinating data with rich attributes across:

- Multiple products: swaps, repo, securities loans, commodities, forwards, derivatives, loan purchases and sales, and other securities contracts
- Front-to-back businesses: margin centres such as prime brokerage, futures commission merchants, treasury, operations, risk and securities finance, across different legal entities and regions

- Third-party relationships: triparty agents, CCPs, depositories, exchanges, etc
- Legal agreements
- Positions, trades and references data

The data must be integrated, linked and harmonised, powering a holistic view of all positions, obligations, inventory and liquidity on one platform that all users can view to make the best decisions, deploy optimal collateral in real-time and access liquidity on-demand while complying with requirements.

How to determine the best collateral and funding options

Today's firms increasingly demand advanced real-time analytics to drive decision-making, from front-to-back, although in most cases the back office has a system completely independent of the front office. Sophisticated algorithms enable flexible scenario testing across multiple parameters, such as funding and liquidity costs or types of collateral assets. Clients can also incorporate their own proprietary analytics to maintain their competitive differentiation. Because of the connected data, scenario testing is highly comprehensive and considers all requirements and obligations, such as legal terms. The recommendations engine then not only determines the optimal use of collateral but can connect to downstream systems for automated STP workflows, such as connectivity to booking systems.

Different approaches to optimisation

Some firms are taking a calculated approach to optimisation.They might start with one business, assess the outcomes and benefits, and then decide to scale further with the confidence in achieving even greater results. Other firms are committed from the beginning to pursue enterprise-wide optimisation, especially if they are planning a centralised funding strategy. Other firms are backing their way into optimisation. For example, if a client is subject to qualified financial contracts (QFC) recordkeeping regulation, then they can take advantage of the connected data and processes that must be put into place for compliance. Once that is achieved, they can reap the benefits of making optimal collateral decisions across the firm.

How does optimisation help with compliance?

Optimisation ensures that the firm is fulfilling its obligations by meeting terms of legal agreements, which are mapped to the workflow and incorporated into the algorithms and analytics. Collateral validation tools ensure appropriate uses of collateral and support compliance. With a comprehensive view into all collateral activity, firms have a real-time assessment of its positions and are able to prepare for stress events. QFC recordkeeping, one of the most complex regulations in effect in the US, goes hand-in-hand with optimisation as they both require connecting and linking multiple data and systems to make optimal decisions and to make compliant reporting possible.

What specific results have current clients that implemented a collateral optimisation solution seen?

Large global bank one:

The US operations of a large global bank struggled to answer a seemingly simple question: "How much cash and collateral do we have in real time, where is it and how fast is it moving?" Without this knowledge, the team was held back from making more informed, strategic decisions and were burdened with inefficient, manual processes for compliance. They lacked visibility into the entirety of their inventory of cash and securities, especially the positions across repos and hundreds of nostro accounts for moving their clients' money. Transcend worked with the firm to identify data across 12 distinct systems. Using Transcend's inventory management technology they saw immediate results in terms of efficiency and reducing funding costs.

Large global bank two:

A major bank, which was one of the first global systemically important banks subject to QFC recordkeeping compliance in the US, worked with Transcend to connect more than 50 different systems and prepare for the stringent and on-demand reporting requirements. With all the data now linked across the firm and providing a holistic view of collateral, positions, obligations, agreements and more, the firm is able to drive better decisions, automate workflows and continue to comply effectively with the regulation.

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Collateral crunches:

How the next crisis could impact the buy side

Broadridge's Martin Seagroatt looks at how regulatory reform has created new risks for the buy side around sourcing and mobilising collateral and evaluates scenarios that could occur in the next recession; and how technology can help

We are now in the late stages of the economic cycle. The current bull market following the great recession has lasted 10 years. While unemployment is low in most major economies and global growth is holding up, there are numerous headwinds that could trigger the next recession. Trade wars, Brexit, geopolitical tensions, slowing growth in Europe and high levels of corporate debt are just some of the factors that are a cause for concern, with recent market volatility an indicator of their potential impact.

Moreover, interest rates are already at historic lows and developed economies are more indebted than in 2008. This leaves central banks and governments with fewer policy levers to pull to stimulate growth in the event of a deep recession.

The system is safer but risk has shifted

Despite all of this, the banking system is now a great deal safer than in 2007/2008, due to regulatory reform in the wake of the global financial crisis. However, these reforms have also moved risk to new and different areas of the financial ecosystem. This could result in several unintended consequences, particularly for the buy side.

The growing importance of collateral

Counterparty risk has been mitigated by increasing collateralisation of derivatives trades and a shift to trading derivatives via central counterparties (CCPs). Banks and broker dealers are more robust than in 2008, with improved capital and liquidity profiles and lower leverage due to Basel III.

But these developments now move risk to the buy side, who need to source high-quality collateral in greater quantities. This has led repo and securities lending markets to become a key mechanism for the trading and the mobilisation of collateral through collateral upgrade/downgrade trades.

For example, a pension fund may not want to hold large quantities of cash to collateralise its derivatives portfolio. One alternative is to repo out corporate bonds in exchange for cash to post to the CCP/futures commission merchants (FCMs)/clearing broker, or lend equities in exchange for government bonds.

This creates new and complex interconnectivities. In recent years the buy side has already experienced difficulties accessing this liquidity when repo rates spike due to sell-side balance sheet reporting periods. But what happens in the event of a deep recession or market panic?

What could happen in a crisis?

The first table shows (see figure 1 overleaf) a list of risks that could have serious consequences in a crisis. While it is difficult to predict exactly how events in a crisis would unfold, it also shows some of the causes of those risks and the potential impacts for the buy side.

How to mitigate these risks

Macro prudential measures: some of the risks discussed above would benefit from macro-prudential measures to reduce their likelihood and impact. This could include some level of buy-side access to central bank funding or closer management of repo rates by central banks. The Federal Reserve's recent discussions around its overnight standing repo facility highlight the increasing focus on this.

Risk for the buy side	Cause	Impact
Rollover/maturity mismatch risk	• Long-dated derivatives transactions secured with collateral sourced in short-term repo and lending markets • Providers of collateral transformation services reduce funding in the event of a crisis to preserve capital/balance sheet/ liquidity	• Increased cost of collateral for the buy side • Disruption to asset allocation strategies • Need to sell assets (corporate bonds or equities) to raise cash for margin • Need to unwind derivatives trades
Market risk/eligibility risk on collat-eral	• Collateral drops in value due to market conditions (corporate defaults, equity market corrections) • Counterparty eligibility schedules tighten • Haircuts increase • Sell side engage in fire sales of Level 2 assets and non-HQLA assets to bolster regulatory ratios • Fire sales of collateral to raise cash for margin or because of counterparty defaults • Rising cost of HQLA (government debt squeeze as demand for margin increases, wider flight to quality)	• Downward spiral in asset prices due to fire sales and defaults • Harder to source eligible collateral to meet margin calls
Concentration risk	• Risk concentrated with smaller number of counterparties (CCPs/ FCMs/clearing brokers) • Concentration of counterparties providing collateral transformation services • Concentration in specific types of collateral (asset classes, industries,regions)	• Single point of failure and weak links in the financial system • Difficulty sourcing collateral • Collateral exposure to specific countries, asset classes, industry sectors and wrong way risk
Operational risk	• Need to source and mobilise collateral rapidly to meet margin calls • Fragmented internal systems and market infrastructure • Lack of automation and straight-through-processing (STP) around the margining process • Poor integration between the derivatives collateral function and securities financing desks	• Settlement fails • Difficulty reacting quickly to meet margin calls due to manual processing
Systemic risk	• Liquidity crunch in securities finance market • Interconnectedness of counterparties and concentration of risk in CCPs with multiple overlapping members.	• Cascade of financial institu-tions facing insolvency • CCP failure

Market infrastructure: a less fragmented market infrastructure, particularly in Europe, could help to mobilise collateral more quickly with less friction. Target2-Securities and the Central Securities Depositories Regulation (CSDR) should help to improve settlement discipline and reduce operational risk. However, CSDR's impact on trade economics may also reduce repo market activity when it is needed most as a way to mobilise collateral.

Firm-level technology systems: as a technology vendor, Broadridge has seen a significant number of buy-side firms implementing new collateral management systems. This has gone hand-in-hand with a more joined-up approach to derivatives collateral management and securities financing activity.

In some cases, firms have created new central funding desks and physically moved their derivatives collateral managers to sit beside the repo and securities lending desk. Some securities finance activity has also been brought in-house by larger buy-side firms as it grows in importance in the collateral management process.

To support this, they have implemented technology solutions that can harmonise front-to-back office functions across business lines. These solutions can help to mitigate some of the risks discussed above. (see figure 2)

Risk for the buy side	How technology can mitigate
Rollover/maturity mismatch risk	• Gain a clear view of derivatives collateral needs versus securities finance activity in a single system • Facilitate the use of securities finance as a way to source liquidity • Gain a picture of the tenure of financing activity
Market risk/eligibility risk on collateral	• Automated, up-to-date feeds of counterparty eligibility schedules • Clear views of availability liquidity and eligible assets across the firm • See where assets are located, held in custody or rehypothecated • Ability to quickly source, mobilise, optimise, and allocate eligible collateral
Concentration risk	• Concentration analysis and sophisticated concentration schedules • View of counterparty concentration across all collateralised trading
Operational risk	• Derivatives collateral managers and the securities finance desk have a single view of collateralised activity • Ability to source and mobilise collateral rapidly with minimal manual processing to meet margin calls • STP through integration with market infrastructure (CCPs/clearing brokers/FCMs/triparty agents/electronic trading platforms/reconciliation solutions) • Reduction in settlement risk through integrated settlement messaging and tracking workflow

Microservices: An à la carte approach to collateral management solutions

A microservices architecture offers an on-demand consumption model that can scale dynamically and upgrade frequently. Alan Sheehan, of Calypso, explains the value of combining microservice solutions with seamless integration to core platforms

Driven by new regulatory requirements such as the uncleared margin rules (UMR), and a need to optimise collateral usage to lower funding costs, the collateral management process has become more expensive and more challenging, with financial institutions obliged to consolidate information, exposures and inventory across all assets. The business models they use now differ considerably from those typically seen just a few years ago.

Financial institutions must be able to manage collective inventory positions, optimisation, capital and balance sheet usage, regulatory compliance, eligibility and availability simultaneously across fixed income, equities, derivatives and even foreign exchange and commodities. The requirement to adapt quickly to shifting global regulatory changes and to manage changes in deadlines without disrupting core business activities continues to demand agility in collateral management.

The ability to view collateral requirements across the firm is a major departure for traditionally siloed businesses. Margin exposures for clients are often netted, even across products. As such, the exposure information must be centrally collected, processed, reported and managed. Information needs to be in one place and consistently recorded and analysed.

Utilities, including triparty services, have taken a progressively larger role in collateral management, bringing a need for connectivity and integration if firms are to achieve an effective end-to-end process flow.

Collateral management really has become a bit of a juggling act.

New rules, new tools

The demand for collateral management tools has grown exponentially over the past decade. More recently, small and medium-sized buy-side and sell-side participants have joined the party courtesy of the additional UMR phases, which have broadened the audience for collateral management systems. Without a budget in the millions, these system buyers need access to simpler, cost-effective solutions, but they also need to be able to adapt to meet future changes and they need scalability.

Satisfying the needs of smaller market participants has resulted in big changes to system architecture that have in turn impacted technology and the market more broadly.

A brief history of collateral technology

The first wave of investment in collateral management infrastructure was often done internally, with technology departments bolting systems onto their existing infrastructure. Later, vendors started to displace internal system development with next generation software architecture, integrated with existing settlement, books and records, risk and trading infrastructure. Cheaper than an internal build, it allowed for the latest functionality to be incorporated, and was quicker to deploy. In all these models, one single piece of software delivers a full suite of functionality.

The upside is that this gets the job done, while the downside is that new upgrades, implementation and service changes keep costs relatively high.

Financial institutions have struggled for some time to find a way of deploying and maximising value from their collateral management systems. After all, who wants a stand-alone black box vendor system that is costly to integrate, upgrade and maintain?

The emergence of cloud-based platforms has gone a long way to fixing the servicing and update problem, but it has on occasion resulted in a less flexible, ‘take it or leave it’ solution. Systems built as modules with organised suites of functions were an improvement, but still buyers were paying for functionality that they didn’t necessarily want.

The core problem remained: how can a system provide only the functionality needed, be economical to buy, run and maintain, yet still be expandable when change is required?

Enter microservices

A microservices architecture consists of small, independent business services with well-defined, well-documented and stable representational state transfer application programme interfaces. Services can be independently consumed to meet specific business requirements, starting with the smallest scope required to realise business value and growing to leverage more and more services as business needs change or legacy systems are retired. Each service can be upgraded on its own schedule to support its own rapidly changing requirements, all without requirement an overhaul of the whole technology ecosystem.

Inventory Management

This is a very attractive proposition for firms facing UMR compliance requirements, for example. At Calypso we are seeing an increase in the number of firms driven by regulations to implement margin and collateral management solutions immediately, but longer term, looking to simplify and consolidate their current system infrastructure to a single vendor.

Collateral and consolidation

The ability to combine individual services is good, but it is the integration of services that provides the full value of any solution, and this holds true for collateral management. Since collateral management requires a significant amount of information to be exchanged, processed and returned, consolidation and seamless integration is increasingly important. Integration to the front office for 'what if?' margining, to securities financing for inventory management and optimisation and to the back office for settlement processing and agent bank connectivity, including triparty agents.

Plus, the ability to consolidate your securities financing transactions and post-trade collateral management in a single solution brings the added benefit of simplifying Securities Financing Transactions Regulation (SFTR) requirements.

The importance of connectivity

As noted earlier, the role of utility services and triparty agents in collateral management has increased: AcadiaSoft MarginManager has become the de-facto standard for collateral messaging to which all systems must integrate. Full integration with triparty agents is required as more and more collateral movements are made through these agents, who provide the necessary regulatory segregation model.

Empowering financial institutions to maximise the value of these platforms will make collateral management more efficient and less costly by providing easy access to the collateral that is available to pledge, a simple way to hold and transfer that collateral, and efficient reconciliation via a common messaging protocol.

Why microservices matter

Calypso sees microservice-based business solutions as key to making collateral management more flexible, efficient and less costly for a wide range of users.

We firmly believe that the move to microservices will bring agility, efficiency and substantial cost savings that will have a direct impact on the evolving collateral management landscape.

Each microservice provides a different function, yet they connect to act seamlessly with each other. Not everyone will need each function and clients can buy what they need. Updates can be performed by function and be backward-compatible. Regression-testing of any upgrades or additional functionality to individual microservices (always one of the more labour-intensive, risky and expensive aspects of changing any system) will become a narrower exercise and hence more efficient and less costly.

Calypso was built using an event-driven architecture and as such the transition from modular to microservices was a natural one.

The market often associates microservices with cloud-hosted solutions. We appreciate, however, that cloud deployment may not be the right answer for every situation or every institution. That is why our collateral management solution is deployment-agnostic and our clients decide whether to deploy on-premise, hosted, or hybrid, depending on their specific requirements and regulatory constraints.

Be future-ready

Forward-looking decision makers need to know the trajectory of technology delivery and understand why new technologies such as microservices matter. This understanding will impact investments in new business ventures, profitability and readiness for regulatory change. The beauty of microservices is to offer decision-makers the opportunity to start small with a new solution and expand incrementally at their own pace, with much less disruption and at a lower cost.

We clear the path

OCC has the largest centrally-cleared stock loan offering in the world with approximately $80 billion in cleared loan balances. Over the last 25 years, OCC has built an innovative and unique U.S. program for securities lending transactions where OCC steps in as the counterparty (with a two percent risk weight) and guarantees the return of stock or collateral. We continue to enhance and expand access to our stock loan program in order to offer clearing solutions and capital efficiencies for our members and the entire securities finance industry.

As the world's largest equity derivatives clearinghouse, OCC is committed to providing market participants with high quality and efficient clearing, settlement and risk management services. As a Systemically Important Financial Market Utility, we work to enhance our resiliency in order to reduce systemic risk, increase market transparency, and provide capital and collateral efficiencies for the U.S. capital markets.

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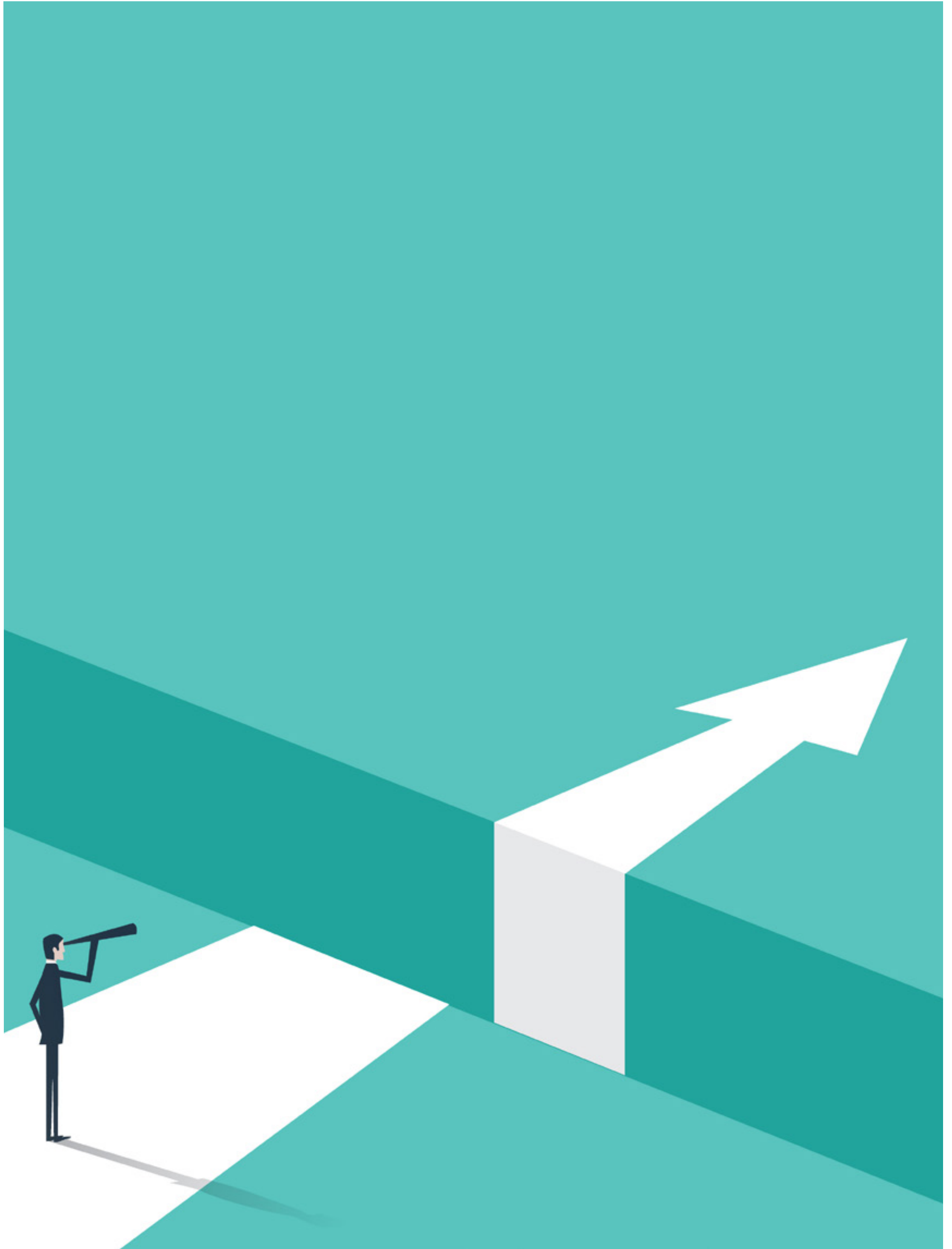


Squaring the collateral triangle

David Lewis, of FIS, discusses how regulations will have more of an effect on our business now, and in the near future, than they have ever before

Regulations have always shaped our industry, that is their nature. However, it is probably fair to say that they are having more of an effect on our business now, and in the near future, than they have ever done before. Many column inches have been written about Securities Financing Transactions Regulation (SFTR), and now we are on the road to implementation in April 2020, the new requirement for the securities finance industry to report to a regulator is finally on the horizon. SFTR is, of course, all about transparency and bringing the world of shadow banking out into the sun, delivering on the Transparency Directive handed down by the Financial Stability Board (FSB). Combine the effect of SFTR with other forces at play in our market, including the other new regulations coming into force or already in place, then we see an influence on the market that is much wider than perhaps the original individual requirements intended.

Looking at a number of these regulations, a common thread becomes evident. Just like many other segments of the financial markets, regulators are looking to regulate out risk as far as is possible—in the same way, health and safety commissions look to protect the public from harm. Risks cannot be eradicated, of course, because without it, returns make little sense; but they can be minimised, and this is what a number of regulations are aiming at. Central Securities Depositories Regulation (CSDR), Fundamental Review of the Trading Book (FRTB), the various incarnations of Basel and, of course, SFTR, all have common factors either directly or indirectly affecting the way collateral is managed or reported.

The need for additional capital under Basel III has driven many banks to reorganise their balance sheets as they move to meet the new requirements applied to them. This has had an effect on the securities finance market as borrowers look for high-quality liquid assets (HQLA) to improve their balance sheets. However, in a report by the European Banking Authority (EBA) on the progress of Basel III implementation released this month, it is indicated that across the 189 banks questioned, the capital requirements would rise by an average of 24.4 percent. This translates, in the report's terminology of "conservative assumptions", to a capital shortfall of some €135 billion, including €91 billion of common equity tier one. Looking at large global banks, it is clear that they are carrying the larger part of this increased obligation, as medium-sized banks are looking at an average rise of just 11 percent of the capital or around €1 billion. Small banks fare even more favourably at just 5.5 percent and around €100 million of additional capital required.

In its recommendations, the EBA advises that Basel III reforms are introduced by the European Commission with regard to the "calculation of exposure values of counterparty credit risk exposures stemming from securities financing transactions (SFTs)". This would suggest that the need for HQLA is unlikely to be diminishing any time soon.

In an article, published by the Financial Times on 22 May 2019, Manmohan Singh, a senior economist at the International Monetary Fund, explained how collateral velocity is once again on the increase. Collateral velocity, first measured effectively in 2011, is the ratio of the total pledged collateral received by large banks that is eligible to be reused, divided by the primary collateral sourced from financing activities, including repo, securities lending, prime brokerage and derivative margins. In simpler terms,

the ratio indicates the level of reuse of collateral due to financial intermediation between banks and non-banks, something regulators are keen to understand, and which can be seen reflected in some of the data requirements we see in SFTR.

Having dipped significantly from around three in 2017, velocity was calculated at around 2.5 between 2010 and 2011, immediately post the Lehman default and the ensuing financial crisis. Collateral velocity continued to fall, dipping to a low of 1.8 in 2016 as regulations and a general aversion to counterparty risk saw collateral pledged fall from $10 trillion to around $6 trillion. It could also be argued that quantitative easing by several central banks was also sucking up a lot of HQLA supply. Since 2016, however, it has been on the rise: two in 2017 and 2.2 in 2018. This has been caused by a growth on both sides of the equation but with primary collateral rising by only around 10 percent, while the volume of pledged collateral has grown more than three times as fast at 33 percent. While this rise has only closed half the gap that was created by the financial crisis, it does put pledged collateral back over the $8 trillion level.

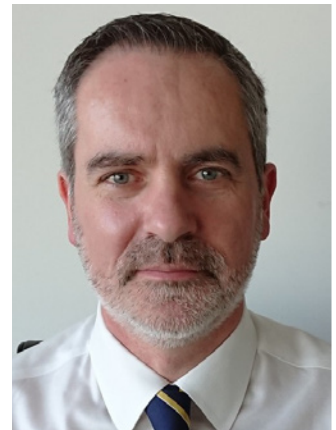
But what does all this mean to the securities finance industry? The rise in primary collateral has been driven primarily by securities lending and prime brokerage activity, reflecting the additional activity in collateral sourcing and supply to meet regulatory changes. It is also indicative of market participants changing the way they trade in order to stay within new balance sheet constraints. What may follow is a loosening of those pressures as central banks begin to reduce the size of their balance sheets and free up the HQLAs that they have taken from the market. Certain central banks have undertaken securities lending programmes themselves, which have muddied the waters somewhat, but that will be offset by the reduction in the quantitative easing programmes.

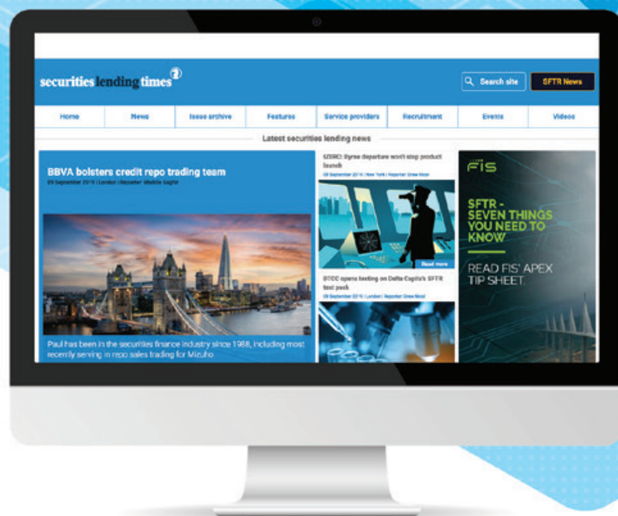
The impact of FRTB has also been felt across the market as capital is allocated towards illiquid assets, and market participants have pushed away from holding anything they cannot efficiently price. This regulation is another potential demand on the capital of banks, bringing further pressure to the market. It is a regulation that is, arguably, easily defended on the basis that it is not unreasonable to expect a bank to hold capital to secure an asset that does not meet a fairly low bar on asset pricing. Anyone who has seen 'The Big Short' will understand the knock-on effect of mispricing illiquid or distressed assets. Such requirements certainly uphold the health and safety objectives of the regulators when they are considering the security of the financial markets.

With multiple regulations bringing numerous layers of complexity to the capital and collateral requirements of the financial markets, the securities finance industry finds itself firmly in the crosshairs, not least because as of April 2020 we will need to be able to report comprehensively on collateral traded and its level of reuse. The roll-out of margin requirements for uncleared derivatives will be another major driver of change, requiring either the posting of additional collateral by hundreds of more counterparties or the move into the clearinghouses.

In either case, the objective of protecting the end consumer and the stability of markets is being addressed. All we need to do now is find all that extra collateral and optimise it across all our businesses.

David Lewis
Senior director
FIS





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Broadridge, a global fintech leader with $4 billion in revenue, provides communications, technology, data and analytics.

Broadridge offers a suite of global, front to back office securities finance solutions for buy side and sell side. This includes integrated or standalone systems for securities lending, repo, collateral management, collateral optimisation, and an end to end transaction reporting solution for the Securities Financing Transactions Regulation (SFTR). Broadridge's solutions help customers to comply with new regulations, increase efficiency, improve strategic decision making and make more intelligent use of capital, balance sheet and liquidity.

Broadridge also offers consulting services to help market participants design their target operating models for SFTR. This service provides a practical blueprint for front-to-back changes to overall architecture, organisational structure, business processes and location strategy.

In addition, Broadridge provides project management, business analysis and testing support to augment firms' internal SFTR project teams and help them comply with the rules in a timely manner.

Broadridge's in-depth expertise in both securities finance and trade reporting regimes including US (Commodity Futures Trading Commission), Europe (European Market Infrastructure Regulation, Markets in Financial Instruments Directive I and II), will enable clients to adapt to SFTR smoothly while minimising operational disruption and reducing the resource impact of complying with the reporting mandate.

For more information about Broadridge and our proven securities finance, collateral management and transaction reporting solutions, please visit our website.

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Calypso's cross-asset product suite and award-winning post-trade processing, collateral and securities finance platform help clients resolve today's complex collateral management needs.

Providing coverage of both bilateral and cleared products, the Calypso Collateral solution helps buy-side, sell-side and service providers to minimise use of cash, and reduce margining and funding costs.

Complete automation of collateral management operations, combined with algorithm-based allocations, enable clients to find the 'cheapest to deliver' collateral and reduce the number of collateral calls and disputes.

Collateral trading desks can use Calypso securities finance to access repo and securities lending markets in order to release contingent liquidity and reduce overall funding costs.

The solution is compliant with new regulatory requirements such as the BCBS/IOSCO Uncleared Margin Rules (UMR) and Securities Financing Transactions Regulation (SFTR).

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End-to-end solution with seamless integration
Centralised, real-time view of inventory
High levels of straight-through processing through configurable workflow
Triparty integration
Connectivity with AcadiaSoft MarginManager
Flexible platform to adapt to changing needs
Deploy on-premise, hosted or hybrid
Microservices architecture
Support for regulations such as UMR, SFTR

Calypso Technology, Inc. is a cloud-enabled provider of cross-asset front-to-back solutions and managed services for financial markets with over 35,000 users in more than 60 countries. Its award-winning software improves reliability, adaptability, and scalability across several verticals, including capital markets, investment management, central banking, clearing, treasury, liquidity, and collateral.

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EquiLend is a leading provider of trading, post-trade, market data and clearing services for the securities finance industry with offices in New York, Boston, Toronto, London, Dublin, Hong Kong and Tokyo. EquiLend is owned by Bank of America Merrill Lynch, BlackRock, Credit Suisse, Goldman Sachs, J.P. Morgan, Morgan Stanley, National Bank of Canada, Northern Trust, State Street and UBS.

EquiLend operates NGT, the securities finance industry's most active trading platform, as well as a post-trade suite for securities finance operations. DataLend provides performance reporting and global securities finance data to agent lenders, broker-dealers and beneficial owners. EquiLend Clearing Services offers central clearing services and connectivity. EquiLend SFTR offers a no-touch, straight-through solution for the Securities Financing Transactions Regulation.

EquiLend Spire is a front-, middle- and back-office platform for securities finance businesses.

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When dealing with complex securities finance markets—from stock borrowing and lending to repo, from securities finance to collateral management—finance professionals need a consolidated view of their positions. FIS Apex Securities Finance and Apex Collateral Management provide you with that advantage.

Making the best use of every opportunity makes best use of capital while remaining focused on the most important priority of all: profit.

Whether on the supply or demand side, FIS' comprehensive range of market data, securities finance and collateral management solutions gives you the efficiency to run smarter operations and the agility to capitalise on opportunities.

To be as efficient as possible in the use of the inventory for funding, yield enhancement and compliance with regulatory capital requirements and collateral management, you need to bring together all of the asset pools for the securities finance business and your collateral requirements across business lines, and across the whole enterprise.

Firms that make this move can increase yields by making smarter decisions around what assets are allocated to lending programs and collateral requirements. Global optimisation allows you to use assets to cover exposures in one jurisdiction with excess balances from elsewhere. And, you can mobilise assets across functions, transforming them into higher quality assets when needed to meet the ever-increasing regulatory demands for collateral.

Efficiency and confidence. The best of both worlds.

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HQLAx is a financial technology innovation firm that leverages R3's distributed ledger technology, Corda, to enhance collateral mobility in the global securities financing markets. HQLAx is creating a fit for purpose, standardised, single marketplace to enable institutional treasurers to:

- More easily fine-tune liquidity metrics for intraday, liquidity coverage ratio and net stable funding ratio liquidity requirements, and
- Better manage margin pledge obligations for counterparty credit exposures.

In March 2018, Deutsche Boerse Group and HQLAx announced a strategic partnership to develop a blockchain solution for collateral swaps in the securities lending markets. The joint operating model will improve collateral mobility across a fragmented securities settlement ecosystem. Unlike in traditional settlement, there is no movement of securities between custodians in the HQLAx operating model. Instead, a digital collateral registry is used to record ownership transfers of baskets of securities, whilst the underlying securities remain static in the custody location of the collateral giver. This helps market participants manage collateral more efficiently and improves fluidity across siloed collateral systems and locations.

Market access to the HQLAx operating model will be provided by the renowned Eurex Repo trading system. A newly created trusted third-party entity, owned and operated by Deutsche Boerse Group, will interface between the distributed ledger technology and legacy securities infrastructure, leveraging well-established triparty collateral management services from multiple triparty agents. The joint operating model will go into production in Europe later this year.

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J.P.Morgan

J.P. Morgan offers innovative solutions to collateral providers and receivers, helping institutions efficiently manage collateral against securities and derivatives transactions and address financing, funding and liquidity requirements.

Banks, broker-dealers, asset managers, insurers, central banks and pension funds can optimise their collateral portfolio with sophisticated analytic and eligibility tools and flexible bilateral and tri-party structures. J.P. Morgan's global capabilities, supported locally, help institutions manage collateral around the world or onshore, in order to meet increasingly complex financing and liquidity requirements.

A leading global custodian, J.P. Morgan operates in approximately 100 markets and provides a comprehensive suite of settlement, asset servicing, tax, FX, securities lending, cash and liquidity products.

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Margin Reform is a boutique practitioner led consultancy that brings a deep and deliberate expertise to the margin, collateral and legal domain. The partners have over 40 years' experience in the collateral domain having held roles in operations, risk, technology, front office and consulting.

Margin Reform help you to decipher your issues, design and structure your approach, and optimise your processes, procedures and governance multiplying your chances of a positive transformation and implementation experience.

Our extensive experience, industry knowledge, and successful partnerships mean Margin Reform is positioned to bring your requirements to fruition in a scalable and structured way.

Areas of expertise:

- Collateral strategy
- Technology
- Client solutions
- Risk and regulation
- Training and communication
- Compliance

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Murex—MX.3 for collateral management and securities finance
For more than 30 years, Murex has provided enterprise-wide, cross-asset financial technology solutions to capital markets players. Its cross-function platform, MX.3, supports trading, collateral management, treasury, risk and post trade operations, enabling clients to better meet regulatory requirements, manage enterprise-wide risk, and control IT costs. With more than 50,000 daily users in 60 countries, Murex has clients in many sectors, from banking and asset management to energy and commodities.

MX.3 reinvents active trading of enterprise asset inventory. It provides funding and collateral trading desks with a real-time view of their equity and bond enterprise inventory. The solution includes tri-party repos with agent connectivity, evergreen and extendible, fee and rebate stock loan, as well as synthetic financing across asset classes. Corporate actions can be executed automatically. Compliance and concentration rules, as well as collateral eligibility checks, automatically apply.

MX.3 for collateral management and securities finance offers a single framework for enterprise-wide margining, optimisation, regulatory compliance and collateral trading. The offering features an enterprise inventory manager for cash, security and physical commodity positions—synchronised in real-time with positions, market data and settlement events. The analytical optimisation algorithm proposes optimal allocations, substitutions or repo booking against margin or funding requirements and user-defined constraints.

The single platform bridges gaps between silos, decreases cost of ownership and increases efficiencies across the chain. Operational processes are rationalised around a single data source. This avoids unnecessary reconciliations between front, back and risk functions.

This solution centralizes collateral processing across entities and business lines for bilateral or cleared over-the-counter trades, repo or securities lending, and exchange-traded derivatives products. The exception-based workflow manager enables intra-day margining and high STP across the collateral chain, including connectivity with key market infrastructure.

MX.3 for collateral management and securities finance supports the mandatory collateralisation of un-cleared trades, it is compliant with BCBS/IOSCO, including Basel III and SFTR, and regional or local jurisdictions, as well as initial margin methods, including ISDA SIMM.

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OCC is the world's largest equity derivatives clearing organisation. Founded in 1973, OCC is a cost-effective, customer-driven organisation that delivers world-class risk management, clearance and settlement services to 20 exchanges and trading platforms for options, financial futures, security futures and securities lending transactions.

It operates under the jurisdiction of the US Securities and Exchange Commission (SEC) and the US Commodity Futures Trading Commission (CFTC). OCC has been designated by the Financial Stability Oversight Council as a Systemically Important Financial Market Utility (SIFMU), which reflects OCC's critical role within the US financial markets infrastructure. In 2018, OCC cleared 5.24 billion equity derivatives contracts, representing its highest volume year ever. OCC stock loan activity in 2018 was up 17.2 percent from the previous year with nearly 1.4 million new loan transactions.

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Pirum offers a secure, centralised automation and connectivity hub for global securities finance transactions, enabling complete automation of the post-trade and collateral lifecycle. Our position within the securities financing market enables clients to seamlessly access counterparts, tri-party agents, trading venues, market data companies and central counterparties as well as assisting regulatory adherence.

Pirum highly innovative and flexible solutions are tailored to fully support the industry's complexities and evolving business processes. Financial institutions from around the world have increased processing efficiency, reduced operational risk and improved profitability by using Pirum across their securities finance business.

Pirum's services include:

- Real-time and overnight contract compare including pre-settlement compare
- Billing compare, billing delivery
- Mark-to-market automation
- Automated returns
- Triparty RQV automation with links to BNY Mellon, J.P. Morgan, Euroclear and Clearstream
- Real-time exposure and margin management
- Automated prepay cash process
- Automated loan release
- Collateral visibility and efficiency
- CCP gateway

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Founded in 2000, SmartStream has evolved from a dedicated reconciliations provider to become a market leading provider of software solutions that deliver automation and control to buy-side and sell-side firms.

The company has grown rapidly, introducing new solutions and winning multiple industry accolades. SmartStream helps organisations make the journey towards digital transformation by providing a range of solutions for the transaction lifecycle. AI and Blockchain technologies are being embedded throughout the solutions, which are also available in a variety of deployment models.

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Transcend empowers financial institutions to rethink how to optimise collateral, increase liquidity and seize new opportunities. Harmonise live positions, transactions and contractual data from across the enterprise to gain a new level of insight. With a modular approach and seamless workflows, connect front-office decision-making with back-office operations to unlock greater efficiency, optimise collateral and drive better results. Founded in 2013, Transcend is a global solutions provider.

Take advantage of our powerful, intuitive and easy-to-integrate technology modules to drive enterprise-wide performance.

Optimise
Inventory Management
Agreements Insight
Margin Dashboard
Collateral Optimisation

Analyse
Sources & Uses
Transfer Pricing

Comply
Intraday Liquidity
Collateral Validation
Stress Forecasting
QFC Recordkeeping

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VERMEG

VERMEG is a specialised software house covering these main market segments in financial services: Banking & Wealth, Insurance and Digital Transformation.

Our business solutions are designed to address the challenges linked to the transformation of the financial services industry. As information system architects, we ensure our clients can achieve cost reductions and time-to-market control in the modernisation of their information systems.

In addition to offering standard software solutions that meet evolving digitised needs, VERMEG provides tailor-made solutions based on our own tools, project and business expertise.

VERMEG has over 1000 employees, with presence in Australia, Belgium, Brazil, China, UK, France, Germany, Japan, Hong Kong, Luxembourg, Mexico, Netherlands, Singapore, Spain, Tunisia and United States. The company supports more than 500 clients in 40 countries.

VERMEG "SOFTWARE EXCELLENCE FOR LEADERS IN FINANCE, TO ACCELERATE YOUR DIGITAL TRANSFORMATION"

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SmartStream

Digital transformation for today's challenging landscape

CONTROLS REGULATIONS REVENUE RISK

Our customers tell us that they need to use transformative digital strategies to remain relevant in today's challenging financial landscape. Strategies that will allow them to improve operational control, reduce costs, build new revenue streams, mitigate risk and comply accurately with regulation.

To help you make the journey towards digital transformation, we provide a range of solutions for the transaction lifecycle. AI and Blockchain technologies are now embedded in all of our solutions, which are also available in a variety of deployment models.

Digital transformation. Reaching the summit just got a little easier.

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SUPPORTING

ALL YOUR COLLATERAL NEEDS

EQUILEND SPIRE
POWERED BY STONEWAIN

Equilend Spire is a best-in-class technology-driven hub leveraging EquiLend's many automated trading and post-trade services to optimize inventory management, cash and non-cash collateral, trade distribution through electronic trading algos and trading desk P&Ls. Users gain enhanced reporting, insight and control to better manage their business.

EQUILEND COLLATERAL TRADING
COMING Q1 2020

EquiLend Collateral Trading is designed for funding or financing desks to effectively trade collateral. The platform will allow for a centralized way for clients to execute and manage trade structures with their counterparties.

EQUILEND EXPOSURE

EquiLend Exposure offers clients real-time visibility and management of counterparty intra- and end-of-day exposure, optimization of collateral usage and reduction of unnecessary costs of settlement for borrows and loans.

EQUILEND

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