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Welcome to the 2022 Global Investor Collateral Guide

By **Ben Challice,** head of securities services trading services, J.P.Morgan

When we reflect on the impact the past 18 months have had on all our lives, it is incredible that as an industry, we have shown a resilience to continue to deliver and innovate at such a significant pace. Arguably, we now stand at the dawn of the most transformative period in the quest of maximising efficiency where the financing and collateral ecosystems are concerned.

From the delivery point of view, phase 5 of UMR brought into scope an array of clients who, all at the same point, had a need for more holistic collateral and financing requirements. This presented the collateral industry both significant opportunities and challenges during the past year, not least the unprecedented documentation and on-boarding efforts.

As we look toward phase 6, market participants will begin to define best practice from their experience of phase 5, but will need to think about additional solutions as clients' needs are likely to shift to increased support for threshold monitoring and comprehensive pre-trade analytics tools.

The year also saw great momentum in the delivery of products and solutions relevant to certain regions and client sectors as firms took a more granular view of collateral, embodied most obviously in APAC where regional nuances of clients' jurisdictions or asset classes have led to development of new and exciting collateral solutions for both onshore and international investors.

With regards to innovation, in 2020, a feature in this Global Investor publication predicted that the 10-year view on the collateral ecosystem would be heavily influenced by digital or tokenised collateral. We see this as a reality already with tangible momentum in solving for transactional inefficiencies. We fully expect the pace to quicken as participants realise the benefits extend beyond purely addressing inefficiencies, to true asset mobilisation.

And as collateral mobilisation and efficiency requirements drive behavioral changes, it is obvious we will see a growing need for data, analytics and automation supporting both pre- and post-trade flows and governance generally. This increasingly brings into focus the subjects of standardisation and technology developments such as APIs and cloud workflow adoption.

All of this and more are deservedly explored in the 2022 edition of the Global Investor Collateral Guide which J.P.Morgan is once again proud to sponsor, as we serve clients across the industry. ■

Regulatory variations demand flexible approach

Different rules across major Asian markets require diligence from market participants.

Clients across Asia are adapting to the pledge collateral version of the global master securities lending agreement (GMSLA) developed by the International Securities Lending Association in 2018 to provides its members with an alternative to the title transfer framework and asking triparty agents to build platforms that can offer valid pledge structures alongside this pledge GMSLA.

One of the challenges firms face in APAC is dealing with counterparties across jurisdictions, time zones and access to eligible collateral observes Michael Poole, head of business development APAC for collateral access at BNP Paribas Securities Services.

"In addition, firms often have entities across different jurisdictions and time zones, which leads to a need to understand regulations across multiple jurisdictions (HKMA, MAS, ASIC, JSFC) as opposed to one central regulatory body such as EMIR," he says.

Larger local and international firms onboarding new phase 5 and 6 clients and having to deal with large volume increases is a challenge, as is their client's inexperience in collateral management suggests Trevor Negus, senior product manager (TLM collateral) at SmartStream Technologies.

"Our experience of the Japanese and Australian markets suggests the increased volumes have presented a need for greater automation,

THE FOCUS IS NOW ON JAPAN GIVEN THE SIGNIFICANT SIZE OF JAPANESE ASSETS CLIENTS WANT TO UTILISE AND ALSO THE UNIQUE REQUIREMENTS AROUND PERFECTION OF PLEDGE UNDER JAPANESE LAW

Rikako Uehara, J.P.Morgan collateral services product management – Tokyo

which is made achievable through connectivity, standardisation, and embracing SaaS deployment," he says.

The nature of collateral management requires that each firm - regardless of location - undertakes a similar set of operational steps. However, Neil Murphy, business manager triResolve notes that in practice there are more challenges in APAC, not just because of a more fragmented geography.

"This is perhaps driven by a lower use of cutting-edge technology, a lag in adopting industry standards, and a reliance on manual processing," he explains. "Trying to meet UMR while still performing standard tasks manually (including reliance on Excel and email for margin calculations, reconciliation and call communications) will create unnecessary headaches and potentially threatens the ability of firms to successfully meet regulatory deadlines."

Recent announcements in South Korea and China regarding enforcement of pledge in the event of a default scenario are a positive market development, which when formalised will boost liquidity.

"In terms of industry issues, pledge as a key driver towards driving efficiency in APAC markets is significant," says Bhavna Haswani, J.P.Morgan collateral services product management – Hong Kong.

Markets such as Stock Connect, South Korea and Japan require pledge to be perfected as per the local regulation and law, explains Rikako Uehara, J.P.Morgan collateral services product management – Tokyo.

"The focus is now on Japan given the significant size of Japanese assets clients want to utilise and also the unique requirements around perfection of pledge under Japanese law," adds Uehara.

One of the drivers for the switch from title transfer to pledge is implementation of UMR for uncleared OTC derivatives.

For APAC markets - predominantly Japan, Taiwan and Australia - consistent growth is expected over the coming year, says Uehara. "Sovereign wealth funds, pension funds and Australian superannuation funds make up the fastest growing segment, particularly as these funds come in to scope for initial margin segregation rules."

Another motivation is targeted structures facilitating financing solutions for historically trapped markets, which are unavailable for financing through traditional transfer of title structures – for example, Korea and Stock Connect.

"In these markets, as per the market regulation transfer of title (off-exchange transfer of assets) is not allowed," adds Haswani. "These markets have enabled Asia to be an early adopter of the pledge structure."

Interest in pledge structures across jurisdictions and collateral markets is gaining momentum. Over the past year, J.P.Morgan has seen significant growth in its tri-party programme, principally collateralising repo, securities lending and initial margin, with repo and non-US securities lending typically under title transfer.

Arrangements where pledge is used as collateral have seen outperformance in comparison with other areas.

As offshore banks and broker dealers continue to grow their China A-share positions, driven by increased access to the A-shares market via Stock Connect, demand to utilise these securities as collateral is on the rise.

"Ongoing improvements introduced by both the regulators and market participants bode well for Stock Connect with investors' readiness to finance their balance sheet", observes Haswani.

Increased investor demand incentivises broader access to China and requires close coordination with tri-party agents to provide effective and efficient financing solutions.

There are market advocacy efforts and industry collaboration to promote cross-border collateral arrangement in the RMB bond market and enabling China assets as internationally accepted collateral.

With increasing demand to finance trapped securities under pledge structure, there is a need for timely liquidation/enforcement processes during a stress scenario, particularly for the pledge markets of Korea and Stock Connect. This is to ensure that along with unlocking the assets, tri-party agents provide end-to-end solutions and confirmation that recipients of these assets are able to effect the enforcement of these securities in restricted markets.

In Korea and Stock Connect securities are moved under pledge, meaning that until the securities are enforced they continue to remain under the pledgor's s title, explains Uehara.

"Since free-of-payment securities transfers constituting a change in beneficial ownership are considered off-exchange trading and therefore subject to regulatory review/consultation in these markets, the collateral securities need to be liquidated while still held under the pledgor's name," she says.

There is significant 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 is being driven by funding benefits, reduced settlement cycles and cross border challenges," says Haswani. "There has also been a strategic move of Asian trades from Europe to Asian entities, taking advantage of liquidity and giving rise to cross-entity structures."

Collateral transport has gained traction across the region with a number of ongoing discussions with buy-side firms who are keen to seamlessly cover margin obligations and preserve trading and lending opportunities.

INCREASED ONSHORE FINANCING FROM BROKER-DEALERS WHO HAD TRADITIONALLY UTILISED A SINGLE CENTRALISED GLOBAL FINANCING HUB IS BEING DRIVEN BY FUNDING BENEFITS, REDUCED SETTLEMENT CYCLES AND CROSS BORDER CHALLENGES

Bhavna Haswani, collateral services product management – Hong Kong, J.P.Morgan

"This tool allows them to mobilise and deploy collateral dynamically between custodians and tri-party collateral agents," says Haswani. "It is expected to gather further momentum as the buy-side gets ready to post margin and thereafter recognise the need to be efficient and effective in their inventory management." ■

Collateral efficiency – the quest for frictionless mobilisation

By **Julie-Anne Atkins,** platform sales executive director, J.P.Morgan

In architectural terms, collateral management could be described as a foundation of the financing ecosystem. Over time we have seen the concept evolve from a simple collateral custody solution to a highly sophisticated risk mitigator, operational cost saver and more recently a driver of collateral into the financing front office through efficiency gains in terms of capital or regulatory binding constraints.

Regulation changes are impacting how collateral is optimised with growing implications for profitability. However, optimisation can only be achieved if collateral can efficiently and reliably reach its intended destination.

A core principle of collateral management is therefore efficient mobilisation. It is achieved (in tri-party) through book entry transfers, generating seamless movement of assets uninhibited by local market physical settlement. Other solutions focus on the concept of consolidation – whether that be data consolidation, operational or margin call outsourcing.

The objective here is to streamline an otherwise onerous operating model, which is often not core to the client's business, whose time could be better spent generating alpha.

Whilst improvements in tri-party mobilisation functionality around legal jurisdictions, time zones, cross products and untrapping certain 'hard to finance' assets have contributed to user revenues, each tri-party venue has largely remained captive in mobilisation terms.

WHILST TRADITIONAL TRI-PARTY AND OTHER COLLATERAL MANAGEMENT PRODUCTS REMAIN SIGNIFICANT CONTRIBUTORS TO THE EFFICIENCY OF A COLLATERAL PORTFOLIO, THE REQUIREMENT FOR SMARTER, COST-SAVING AND OPPORTUNISTIC SOLUTIONS REMAINS COMPELLING.

Despite an ever growing range of applications, there remain scenarios which tri-party has not been able to solve for; legal restrictions, local market nuances or simply the degree of sophistication or critical mass required to realise the full benefits of the tools available.

As the industry evolves, so does the demand for solutions to barriers and inefficiencies. Whilst traditional tri-party and other collateral management products remain significant contributors to the efficiency of a collateral portfolio, the requirement for smarter, cost-saving and opportunistic solutions remains compelling.

Service providers have become solutions providers in this regard, adapting to client demand by converging traditional and siloed structures to offer new and innovative enablers.

Various drivers have and will continue to shape the future collateral landscape with regard to demand for new solutions around efficient mobilisation of assets.

Globalisation

We have seen bifurcation due to factors such as legal entity fragmentation (for example, as a result of Brexit), regional funding models and separate lines of business. Yet the objective of optimising a portfolio remains. Connectivity between legacy systems or architecture continues to be a challenge for global institutions aiming to optimise a global book and the cost of unifying systems has increased the reliance on service providers to find solutions which overcome barriers such as legal jurisdiction, visibility of collateral positions, real time data access and mobilisation.

There are many options ranging from fully outsourced providers to off-the-shelf technology solutions available to industry participants. Tri-party legal structures can address bifurcation between US and UK law, but challenges remain in terms of incorporating other onshore legal jurisdictions such as Japan and Australia.

Tri-party's book entry concept can also provide inter-entity mobilisation by way of reuse functionality within the tri-party provider.

Trapped/unfinanceable assets

Appetite from collateral providers for solutions in 'trapped asset' markets or asset types fluctuates depending on factors such as collateral availability and market volatility.

From a collateral receiver's perspective, support of non-standard collateral can offer enhanced returns in comparison with established collateral types. Emerging examples include real estate and private debt, which – despite being highly bespoke in mobilisation terms – have been compelling from a commercial perspective.

Other asset classes which were previously considered esoteric are now being considered as 'established' in the financing ecosystem. ETFs are a good example, with the risk of changing composition from a receiver's perspective resolved through technology solutions adding a dynamic element in eligibility terms.

Money market fund units could be theoretically considered as attractive in terms of credit, but challenges around mobility have arguably restricted utilisation. Recent work with transfer agents to mobilise restricted shares could pave the way for further development in this area.

It should also be noted that buy side and sell side house trading activities largely drive the financing industry and that financing options can be influenced by the mobilisation options available. The reality is that if an asset can be financed there are tangible capital and leverage benefits. The reverse is also the case and an unfinanceable asset will have negative capital implications, making some investment strategies unviable. New and innovative mobilisation solutions could create broader investment opportunities in the future.

CCP margining

A good example of the marriage of traditional collateral arrangements focused on efficiencies of scale with bilateral arrangements addressing specific receiver requirements is CCP margining.

Firms facing multiple CCPs deal with unique challenges, as they are required to maintain different operating models for pledging or recalling collateral with varying messaging standards and technology connections for each central counterparty.

Most major CCPs require or prefer bilateral delivery of assets (rather than tri-party book-to-book moves) in order to retain full and immediate control of the margin in case of pledger default.

These operational and technology hurdles - which vary among a dozen top tier CCPs and dozens of CCPs globally - are further exacerbated by differing needs for collateralising 'house' margin requirements and underlying 'client' margining requirements.

If the manual mobilisation of collateral was not enough of an obstacle, differing CCP eligibility requirements (ranging from cash to sovereign bonds to equity) make optimisation even more of a challenge. Effective CCP margining requires new and innovative asset mobilisation solutions to eliminate manual processes and sub-optimal management of collateral through collaboration between fintechs, vendors and the major collateral agents.

Digital collateral tokens

The idea of removing inherent inefficiencies of market settlement, whilst still in its infancy, is gathering momentum. Collateral tokenisation and distributed ledger technology (DLT) can remove the need for market settlement through the creation of tokens at the original settled custody location. This enables almost instantaneous, frictionless settlement of fully fungible collateral positions reflected on a blockchain with ownership assigned to a tri-party agent or any bilateral recipient.

Not only would the user have the ability to execute complex financing trades almost instantaneously (or at predetermined times) irrespective of market operating hours, they could also eliminate settlement risk and reduce the cost and credit drain of the transaction. Assets previously not viable or available for use as collateral could be mobilised and restricted markets could become available.

As the concept evolves and matures the industry will dictate the direction that future tokenised solutions take, whether that be mobilising trapped assets, further evolving the challenges around intraday financing or eliminating the inefficiencies in traditional transactions and collateral markets.

In mobilisation terms, the use of collateral in digital token form has the potential to significantly alter the collateral management operating model.

Buy side mobilisation

Outsourcing continues to be a preferred option for the buy-side as the infrastructure required to manage ongoing liquidity, credit and operating risks is often not a core competency or focus. It is these added complexities and costs which are driving the decision to outsource.

Regulatory change - and in particular uncleared margin rules - means optimisation of portfolio assets for cheapest-to-deliver versus eligibility criteria is key, and the growing ecosystem complexity reveals the importance of scale and connectivity.

Multi-line trading services providers are becoming more relevant than ever for buy-side clients such as asset managers, asset owners, insurers and sovereign wealth funds as they contend with cost pressures and regulatory challenges and consider the most efficient and frictionless methods of managing their financing, liquidity and margin requirements.

Conclusion

The range of assets and instruments under the remit of a financing business will evolve with investment trends and asset allocations of both professional and retail investors, increasingly influenced by factors such as next generation investment behaviour (for example, cryptocurrencies and digital assets).

Complexities around collateral obligations, whether driven by regulation or commercial appetite, will continue to materially impact profitability and front office decisions. With these factors considered, providing efficient solutions is paramount.

A key success factor for any service/solutions provider will not only be the innovation, whether it is enhancing traditional operating models or going ‘back to the drawing board.’ It will remain crucial to ensure that robust frameworks around safe keeping (which fall increasingly on the shoulders of the collateral receiver in a post-regulatory reform environment) are maintained so that collateral will always serve its intended purpose. ■

IT WILL REMAIN CRUCIAL TO ENSURE THAT ROBUST FRAMEWORKS AROUND SAFE KEEPING ARE MAINTAINED SO THAT COLLATERAL WILL ALWAYS SERVE ITS INTENDED PURPOSE.

– Julie-Anne Atkins, platform sales executive director, J.P.Morgan

Don't underestimate regulatory requirements

Jerome Blais, head of business development for tri-party collateral services at BNP Paribas Securities Services explores some of the key issues around UMR

How can triparty collateral be more effective than bilateral management when it comes to UMR?
Being equipped with sophisticated optimisation algorithms, tri-party allows each party to allocate collateral in line with their own strategy. More often than not it aims to retain the most liquid assets and allocate them to the counterparty in the most optimal way.

The other benefit of tri-party versus third party or bilateral is that it delivers collateral on the same day, whereas in a bilateral arrangement parties may be subject to market fail.

How would you describe your experience of phase 5 implementation in terms of client on-boarding?
I don't think the market should underestimate the scale of the project and how time consuming these regulatory projects can be. We have seen some media coverage about how there is no real end to phase 5 and that is true, because while the vast majority of our clients started this project almost 12 months ago the multiplicity of parties involved means the market has had to prioritise some relationships and had to organise around prioritising pairings that were going to generate regulatory IM in the early days and are now continuing to activate remaining relationships. So we are not going to see the tail end of phase 5 until the end of the year, although custodians are already in active mode about working with and consulting with clients to prepare for phase 6.

I think the market has been very clear about the amount of work that has to be undertaken to prepare for phase 5 and it will be repeated for phase 6, with some lessons learned. Everyone is aware of the deadlines and how to set up tri-party documentation and for phase 6 it is going to be more a matter of execution than discovery.

What will be the key issues around phase 6 implementation – and how will they differ from those in previous waves?
What we are going to see is a lot more discussion because the sheer number of firms that are going to be captured by phase 6 is going to be dramatically increased, but a lot of phase 6 firms may not ultimately have to post IM.

So for providers the combination of tri-party custody and middle office collateral management and calculation services will probably result in a broader use of what we call IM monitoring services. In some cases this will lead to the setting up of custodial relationships and tri-party relationships, but more often than not this won't be the case because a lot of these phase 6 firms won't need to post IM, at least in the short to mid-term.

The fact that the regulators have allowed these firms not to set up these relationships if they don't breach the $50 billion/€50 billion threshold is a huge relief for all involved. ■

WHAT WE ARE GOING TO SEE IS A LOT MORE DISCUSSION BECAUSE THE SHEER NUMBER OF FIRMS THAT ARE GOING TO BE CAPTURED BY PHASE 6 IS GOING TO BE DRAMATICALLY INCREASED, BUT A LOT OF PHASE 6 FIRMS MAY NOT ULTIMATELY HAVE TO POST IM

Managing the next phase

Uncleared margin rules have focused attention on issues such as data quality and management, the robustness of margin models, how to calculate margin on exotic instruments, and best practice for tracking collateral ownership transfers.

When it comes to best practice for data quality and management under UMR, automation is key explains Michael Poole, head of business development APAC for collateral access at BNP Paribas Securities Services.

"Firms need to ensure they have robust STP mechanisms in place from trade capture, IM calculation and margin call agreement to sending instructions and settlement of securities to tri-party agents, leveraging industry leading market utilities," he says.

"Times of high market stress highlight the need for a front to back STP chain to ensure nothing falls down in the process without forgetting that in some jurisdictions this initial margin data has to be reported to the trade repositories alongside the trades that they are covering."

Firms need to ensure they fully understand the regulations in each jurisdiction where they are trading OTC products. When it comes to 'internal models' and SIMM in particular, these are subject to strict governance and back-testing requirements. ISDA compiles feedback from participants on the SIMM model and prescribes updates yearly to ensure the model is as robust as possible.

For example, equity options have a three year exemption under HK rules (HKMA) but not Australia (APRA). BCBS-IOSCO state that when a transaction is subject to two sets of rules (duplicative requirements), the regulators should endeavour to harmonise the rules or apply only one set of rules by recognising the equivalence and comparability of their respective rules. During this period, market participants may consider applying the strictest rules.

Standardisation of data and real-time connectivity are important data quality and management considerations under UMR according to Trevor Negus, senior product manager (TLM collateral) at SmartStream Technologies.

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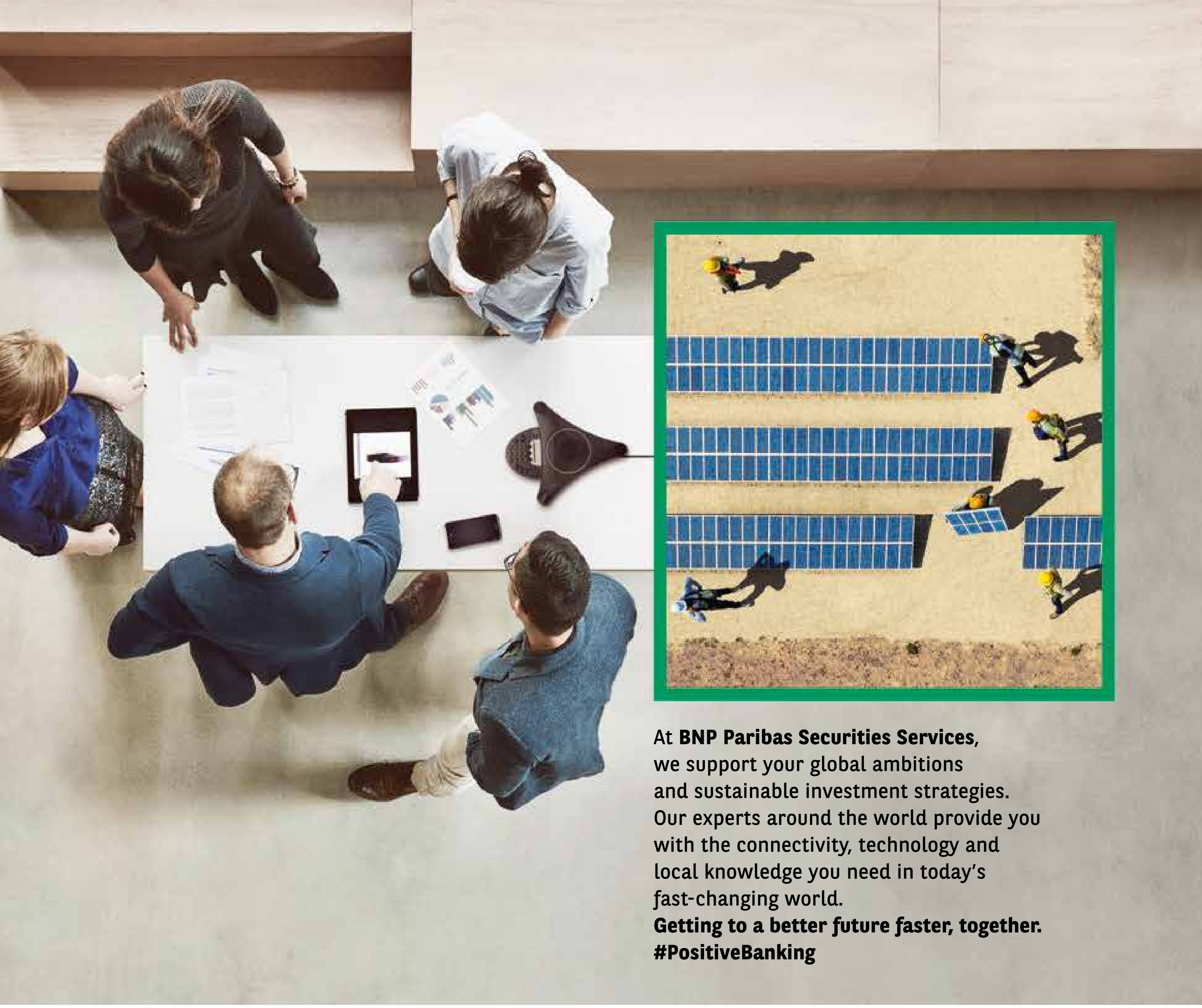

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"The adoption of standardised data and calculations improves reporting, reduces unnecessary translation and - most importantly - reduces disputes," he says. "Combining this with real-time rather than batched data allows firms to absorb the volume stresses of UMR without having to significantly increase staffing."

There is a lot that needs to be done in terms of data quality and management from a UMR perspective observes Bimal Kadikar, founder and CEO Transcend. This includes making sure the right collateral agreements are in place, the method of collateral segregation (tri-party or third party) is selected, portfolios are reconciled to the agreed margin calculation methodologies, and that there is an ability to post and receive suitable collateral per the agreements.

"A lot of work has been done on these issues but there are still a couple of areas which are not where the industry needs them to be," he says. "First and foremost is that as you think about the buy-side, you are going to have a situation where counterparties will pick the method of collateral segregation between tri-party and third-party models that suits them the best, resulting in a complex mixture of collateral posting and receiving procedures."

Additionally, with every phase of UMR going live there are more participants who must now support margining and collateral processes.

Proper data management and visibility around what collateral has been set aside is an important consideration.

"The second area where we see an issue that needs to be solved is regulation and validation," adds Kadikar. "There is a regulatory requirement for each party to validate that the collateral received from their counterparty meets the requirements. Right now, it is very difficult for firms to validate collateral across several counterparties in a scalable fashion."

"Some of our clients are starting to think about how they would validate that collateral, which is tricky because they need to look through their eligibility schedules and make sure that none of the collateral posted is out of their acceptance criteria in terms of quality, violating concentration limits, or breaching any risk limits they may have put on by country or currency."

Best practice for data quality and data management under UMR is to ensure that the trade level information that goes into the calculation of IM exposure is accurate according to Mark Demo, director of community development at Acadia.

"Almost all firms are using ISDA SIMM, which comes with a sample portfolio and expected result which together act like a test to ensure that you have built your calculation model correctly," he says. "The next level of best practice would be when you are exchanging initial margin to compare it daily to your counterparty, using our exposure management service."

Demo firmly believes the soundness of the regular updates to the ISDA SIMM model and the transparency and ease of its calculations have set a new standard for the ability to reconcile input as validated by the fact that firms are moving to ISDA SIMM for non-regulatory initial margin.

"Generally speaking, the UMR framework follows the IOSCO guidance with some differences, for example, around in-scope products," he adds. "The exception to this rule is the SEC, which took its time to finalise its rules and then did so in a very different way."

Brazil also stands out as a jurisdiction that does not allow SIMM, which could prevent that market from moving forward and could cause issues for counterparties trading in that region observes John Pucciarelli, head of industry and regulatory strategy at Acadia.

When calculating margin for exotic instruments, Poole observes that market participants will first have to agree to select the most appropriate methodology. Depending on the instrument type, the local regulator may prescribe the schedule model.

Selecting the SIMM model when possible may trigger disputes due to the different types of

> "FIRMS NEED TO ENSURE THEY HAVE ROBUST STP MECHANISMS IN PLACE FROM TRADE CAPTURE, IM CALCULATION AND MARGIN CALL AGREEMENT TO SENDING INSTRUCTIONS AND SETTLEMENT OF SECURITIES TO TRI-PARTY AGENTS, LEVERAGING INDUSTRY LEADING MARKET UTILITIES."
>
> **Michael Poole,** head of business development APAC for collateral access at BNP Paribas Securities Services

proprietary (and protected) valuation models that may be used to price exotic instruments, says Poole.

"These disputes can be complicated to analyse and solve due to the complexity of the models and their associated parameters," he adds. "One of the main challenges is that there is no consensus in the market on the valuation model. As evolutions of the SIMM model are more likely to impact exotic instruments it is important to stay informed by participating in ISDA SIMM working groups."

In relation to model selection, most buy-side clients want to keep the workflow and the operational process simple and that would have them moving toward grid methodology in terms of how they calculate their margin.

"However, the grid is ultra-conservative from a margin perspective (meaning you have to post much more) while sell-side counterparties use the SIMM model for calculation," says O'Delle Burke, head of collateral services Asia Pacific.

Since one party cannot use a different methodology from their counterparty, there needs to be some level of alignment so there is a lot of time being spent right now just trying to help clients align around the SIMM model.

"The final point in terms of grid versus SIMM methodology is more from a timing perspective," adds Burke. "The client can agree to use the SIMM model, but if they are subject to model approval where they have to get approval from the regulator they tend to use the grid until they get that approval. So in the immediate to medium term they will have to pay more in margin."

Tracking ownership transfers works best if you have improved visibility of all the collateral you have set aside for others and others have set aside for you, suggests BJ Marcoullier, head of sales at Transcend.

"This is going to be a challenge for many players as phase five and phase six roll out," he says. "The usage of collateral is growing across the board and liquidity regulations are also increasing on the sell-side, so firms are learning they have to pass costs down to business areas and these areas are now getting hit with liquidity charges. Firms need to manage this intersection of funding, liquidity and collateral in a much tighter way."

Some of the bigger firms realised this early and started their journey a long time ago, but it is accelerating through UMR on the buy-side as well, adds Marcoullier. "This is where intelligent and automated solutions come into play - spreads are always challenged in these businesses so they need to automate, otherwise they won't be competitive in the long run."

Katie Emerson, EMEA head of agency lending & collateral management sales J.P.Morgan refers to a major difference in client type as we head into the final phase of UMR.

"The clients are much smaller - many of them will not need to post collateral from the outset so there is a focus on regulatory forbearance. We have had many conversations with clients about how we can help them monitor their thresholds and they are very interested in margin flow analytics capabilities to help them understand and predict the impact of

"HOWEVER, THE GRID IS ULTRA-CONSERVATIVE FROM A MARGIN PERSPECTIVE (MEANING YOU HAVE TO POST MUCH MORE) WHILE SELL-SIDE COUNTERPARTIES USE THE SIMM MODEL FOR CALCULATION"

O'Delle Burke, head of collateral services Asia Pacific, J.P.Morgan

any initial margin on new trades that they put on.

Given that their balances are much smaller, these clients are more likely to follow the custody control account route rather the tri-party model adopted by larger clients in phase five. They are also more likely to have posted cash collateral for variation margin and only have experience of a very simple collateral process.

"The UMR margin approach has been designed to encourage the widest possible implementation in the banks," says Lauren Wong, head of quantitative risk management at OCC. "It serves as another margin methodology benchmark and a guide to how we build our margin models."

While there are standalone industry solutions available for UMR, Phase 6 clients are also likely to require additional services such as margin analytics and threshold monitoring, which individually solve for specific problem statements, but collectively can be complex and expensive to manage says Matthew Bennett, J.P.Morgan product manager.

"Providers who can package these services and integrate into core infrastructure are well placed to support the many smaller organisations that may struggle under the requirements needed to meet the regulations."

ISDA data shows that phase 1 firms collected $1.2 trillion of variation margin for their non-cleared derivatives transactions in 2020, an increase of 29% on the figure for 2019. The vast majority of this VM received took the form of cash as opposed to securities (regulatory VM 85.3% cash and discretionary VM 72.7% cash).

One reason why the industry does not use securities more readily for VM margin requirements is operational friction caused by moving securities across a fragmented securities settlement infrastructure.

According to HQLAX, its collateral ownership mobility solution will remove many of these frictions and help the industry make greater use of unencumbered securities for meeting VM margin requirements.

Since the introduction of the UMR regulations, firms have become increasingly focused on better ways to manage and optimise their collateral resources to satisfy their margin requirements. HQLAX's focus is on providing its clients with the ability to transfer ownership of securities easily without the need for the securities to be moved from one custodian to the other.

One such use case is to enable market participants to meet VM margin requirements with securities, where the optimum approach is for the collateral giver to leave the securities in a segregated account at its preferred custodian, and seamlessly transfer ownership of the securities via an update to its shared digital collateral registry.

"The benefits of our operating model include frictionless real-time ownership transfer and removal of market timing constraints on asset mobility," says Guido Stroemer, CEO of HQLAX. "Since the securities are no longer physically moving from the giver to the receiver, it removes some of the settlement risk friction."

A critical lesson learned from earlier phases of UMR is the importance of portfolio reconciliation, both as a means to align portfolios in advance of the implementation date and as the starting point for investigation of IM differences once a firm is in-scope.

Given that IM exposure is at its largest at the point of trade execution, it is essential that firms recognise and act upon any portfolio differences as quickly as possible explains Neil Murphy, business manager triResolve.

"Portfolio reconciliation is an established process for most firms so they should leverage their existing process during UMR preparation to ensure they are able to match and align portfolios," he says. "Data also needs to be managed across the various parts of a firm's UMR technology stack, which will likely include an IM calculator, collateral workflow, and settlement engine, as well as reconciliation tools."

SIMM has established itself as the default model of choice for IM calculation not only due to operational and cost benefits - it also withstood a robust test during the market volatility of early 2020.

"So perhaps what we should expect in the future is more widespread use of industry-led 'standard' models, which are characterised by strong industry collaboration and high levels of take-up and lead to the emergence of common network services for processing and support," says Murphy, who notes that exotic instrument types - such as Bermudan swaptions and Nth to default swaps - pose a particular challenge for calculation of IM given their non-standardised nature.

"In addition, they typically require highly advanced modelling frameworks such as Monte Carlo simulations compared to simple derivatives that can be priced using closed-form solutions," he adds.

"The lack of standardisation and the broader range of possible valuation frameworks can also lead to more frequent IM disputes." ■

acadia

Developments in initial margin monitoring

Mark Demo, director of community development and **John Pucciarelli,** head of industry and regulatory strategy, Acadia consider developments in initial margin monitoring.

How have the UMR regulations changed for Phase 5 &6 firms to allow them to monitor IM before they became operationally ready?

If firms are in a monitoring state they are not expecting to exchange regulatory initial margin on day one and therefore have more control over the costs associated with coming into compliance, meaning they can set up their monitoring process comparing exposure versus their threshold using information provided by their dealer counterparty.

Using Acadia's Threshold Monitor service, firms can set triggers, for example when their exposure gets to 50% of their threshold. They can agree to begin negotiating their custody agreement, or if they don't want their exposure to grow beyond a certain point in a specific portfolio versus a specific counterparty they can adjust their trading behaviour so that they will never come into compliance in this relationship.

Before regulatory relief, firms had to paper, custody and calculate everything. Now they can be much more surgical in how they approach the compliance requirement.

How are firms realigning their portfolios to stay under the threshold?

Most firms have taken advantage of the extra time and done a lot of testing to make sure they know what will happen on their first compliance day. The big disappointment is the failure of the European regulators to come up with a revised model in time for phase 5 firms to avail themselves of the same type of model validation requirement that exists for prudentially regulated firms in other jurisdictions.

If you cannot meet the regulatory deadline, it is likely you will need to stop trading. Everyone is busy at this point and if you pick up a compliance requirement late you are going to be at the back of the queue.

How are firms in phase 5 preparing for monitoring their exposure versus their dealers?

Most of the firms that want to take advantage of the regulatory relief and not do the calculations themselves have signed up for our threshold monitoring service because there is no cost and they can access a basic version of the full service to view IM exposure as calculated by their dealer counterparties.

Because every phase 1 through phase 4 firm sends its exposure to us every day, it removes the need to call the individual brokers to ask what the IM exposure amount is today. Firms can take advantage of the fact that all the brokers are already here in one place, sending their data to one central location where they can log in to view the exposure that is calculated against the value of the third parties as an estimate.

Threshold monitoring relationships now outpace regulatory IM CSAs by a factor of three to one. We have setup thousands of regulatory monitoring relationships for hundreds of firms. This situation is unique to Acadia - there is no one else in the world that provides a centralised source of regulatory IM exposure. ■

BEFORE REGULATORY RELIEF, FIRMS HAD TO PAPER, CUSTODY AND CALCULATE EVERYTHING. NOW THEY CAN BE MUCH MORE SURGICAL IN HOW THEY APPROACH THE COMPLIANCE REQUIREMENT.

Standards matter

Will the common domain model make a significant contribution to interoperability?

An April 2021 report from DTCC suggested there was alignment across both the sell-side and buy-side on the need for further simplification and standardisation of collateral management/valuations.

Standardisation is often perceived as being useful in all forms, but should not be an end to itself - there needs to be a balance between standardising those processes and features which add real commercial benefit while ensuring that innovation is encouraged and not impaired at the expense of the status quo. Post trade derivatives processing corralling around infrastructure is seen as best practise.

As volume reaches a critical point the network effect creates significant scale and efficiencies for all users, as has been seen with the adoption of margin call agreement and trade reconciliation utilities explains Graham Gooden, EMEA head of collateral services at J.P.Morgan.

"Once at critical mass, it can become a virtuous circle as benefits of scale reinforce the need to connect to the standard," he says. "Clients often have bespoke requirements or expect a service provider to conform to their existing 'standards', so there is a natural inflection point where providers can connect with the market to the standard but translate it into a bespoke form for the client.

The drive to standardisation can only help in agreeing margin calls and lead to a reduction in disputes with counterparties. Examples include ensuring valuation snapshots are taken at the same time as the provider and leveraging market leading utilities for agreeing margin calls and dispute resolution.

The advent of VM and IM rules also support standardisation says Michael Poole, head of business development APAC for collateral access at BNP Paribas Securities Services.

"The wider usage of common utilities to calculate/exchange/agree/investigate/settle margins is contributing to the mitigation of counterparty risk by facilitating automated collateral management processes," he explains. "This is in line with ISDA's view that financial firms must try and develop common processes in areas of operations where there is no competitive advantage to duplicate infrastructures."

> "THE DRIVE TO STANDARDISATION CAN ONLY HELP IN AGREEING MARGIN CALLS AND LEAD TO A REDUCTION IN DISPUTES WITH COUNTERPARTIES "
>
> **Graham Gooden,** EMEA head of collateral services at J.P.Morgan

According to David Beatrix, head of collateral access product at BNP Paribas Securities Services, the inherent complexity of OTC instruments and legacy technologies imply many challenges when it comes to integration of infrastructures and IT systems.

"The common domain model can indeed show the way forward to standardise the description of transactions and lifecycle events and facilitate technical interoperability between OTC infrastructures using different languages," he says.

Tom Pikett, collateral services product development at J.P.Morgan agrees that standardisation must not come at the expense of innovation.

"Being nimble and constantly adjusting to individual client needs is essential in building momentum," he says. "However, it is important to have one eye on the longer term and bigger picture to see what the optimal market model looks like. Standardisation has the potential to free up time spent on data/operational/legal discussions to focus on unique offerings from service providers."

There has been a lot of effort made to identify common domain model use cases for trade reporting and standardising legal data and training agreement data observes John Pucciarelli, head of industry and regulatory strategy at Acadia.

"However, in terms of normalising valuations, for example, I think there is still a way to go," he says. "The model will help unlock value, but it depends on how many people take it up. We think that it is a worthwhile endeavour though and have worked closely with the ISDA on different aspects of the data model."

There is a view that the optimum approach to automation is to ensure you are well connected to internal systems and externally to industry utilities, standardising data as much as possible across the firm, and working with industry initiatives such as the common domain model. The thinking here is that once you are standardised and able to connect, you are in a much better position to automate your processes.

The ISDA common domain model will streamline processes. That is the view of Trevor Negus, senior product manager (TLM collateral) at SmartStream Technologies, who observes that translation of data between systems is a headache for many firms.

"Interoperability between systems, internal entities and external clients allows for greater STP," he adds. "Furthermore, it promotes transparency and alignment allowing for better regulatory oversight."

The simplification of post-trade processing is hugely dependent upon not only the creation of new industry standards, but also their adoption - and timing plays a huge part too observes Neil Murphy, business manager triResolve.

Post-2008, the industry has slowly been moving towards greater use of standards, in part driven by a need to lower costs and reduce risk. A case in point is portfolio reconciliation, where industry-wide adoption of triResolve has seen more than 90% of OTC derivatives reconciled on the platform.

In the collateral management space there is growing adoption of the Acadia message standard for margin call exchange.

"While the adoption of both these standards point in the right direction for the common domain model, it should be noted that they were solving specific issues with a narrow focus and closely associated with regulatory goals," says Murphy. "Perhaps more pertinent to the continued expansion of global standards is that firms – and providers – must recognise that the failure to adopt shared standards may hold back the industry's ability to automate."

Mike Norwood, global trading product owner at EquiLend refers to increasing alignment on the buy- and sell-side for standardisation but acknowledges that there are still roadblocks on the path to the common domain model.

"Questions around conformity and best practice are still yet to be answered," he says. "Data is equally vital and both the buy- and sell-side have to invest in their data in order to facilitate the move to a common domain model."

The industry is increasingly seeing the risks associated with delaying movement towards standardisation, adds EquiLend head of sales EMEA, Grant Davies.

"The difficulties we are seeing with CSDR are a case in point," he says. "There is tremendous revenue risk in failing to comply with the regulation and this is underlining the importance of the common domain model. We have the infrastructure to underline a common domain model, but the industry is still relatively fragmented." ■

OSTTRA

THOUGHT LEADER

Why should firms automate now?

Perhaps the most critical reason to automate was highlighted by the Covid pandemic. A perfect storm of market volatility and remote working left many firms struggling to meet capacity and called attention to both a high dependency on manual processing, and limited capacity to deal with a spike in volumes.

Going forward, an inability to send out margin calls on time, coupled with a counterparty default, could have significant impact on a firm. Rather than wait for the next market stress, firms should undertake steps to automate their processes as quickly as possible, thus providing greater future resilience.

With both buy-side and sell-side firms increasingly impacted by regulation (UMR, SFTR, LIBOR transition) the day-to-day demands on a collateral manager are increasing so automation is vital to meet increased workloads and regulatory objectives. Firms subject to new IM requirements under UMR potentially face increases in call volumes, settlements and reconciliations, as well as the additional effort of preparing to comply.

Similarly, automation can support business scalability, allowing front office to trade more products with an increased number of counterparties. With increased operational volumes, the risk of manual processing errors (incorrect or failed payments. etc.) rises too, so automation should be seen not only as a solution to deliver more bandwidth, but also to mitigate the risk of error.

Where should firms focus their time and investment?

Firms should use this opportunity to review their end-to-end flow, ensuring it can support business growth and regulatory change. They should also identify those aspects they want to prioritise, for example, improved dispute resolution, margin call automation or reduced payment failure.

Perhaps the most critical focus is to ensure firms adopt existing industry standards and best practice. Standardised solutions exist for reconciliation (triResolve), margin call messaging (Acadia) and settlement (SWIFT). Adoption of these can provide a fast-track to automation and help reduce costs.

Firms must also focus on connectivity. A piecemeal approach consisting of multiple providers will likely require more effort to maintain - with the added potential for multiple points of failure - whereas a single provider can deliver off-the-shelf connectivity and end-to-end functional support.

While UMR largely impacts firms for IM purposes, we have observed that many clients have chosen to onboard with TriOptima well ahead of their IM deadline, thus gaining immediate VM automation and improved capacity to help deliver IM compliance when the time comes.

So rather than consider compliance through a narrow lens only (meeting IM objectives), firms should look at the potential for automation across the entire collateral management process, including dispute resolution. ■

TriOptima is now part of OSTTRA, a leading provider of progressive post-trade solutions for the global OTC markets owned 50:50 by CME Group and IHS Markit.

Meeting future challenges

Staffan Ahlner is a senior vice president and the global head of Collateral+, a part of the funding and collateral solutions group at State Street

From a State Street perspective, now that you have redefined your uncleared margin rules (UMR) offering and launched a tri-party service as part of your Collateral+ platform, what is next on the horizon?

Like our clients, we place strategic focus on collateral. We continue to invest in our business, consistent with our strategy to provide market leading infrastructure and holistic collateral services for our clients. We also continue to modernise and digitise our services as we know the most sustainable path forward is through technology.

Our teams and services are backed by several decades of experience and we are now executing our transformation strategy to better serve our clients. Our focus is on data management, automation and speed of execution to help our clients maximise their trading opportunities.

We will next increase our focus on front-to-back integration with funding and transformation trades, supporting peer-to-peer and buy-side to sell-side repo. Collateral+ is here to enable the trade.

A number of market participants have raised the upcoming challenges that will be presented by onboarding of UMR phase 6 clients. How are you approaching this?

As a financial institution, we have a lot to learn from the retail sector. In the institutional space, it can take months to onboard a client but in the retail space, it is done in minutes. While there are some differences in the challenges and requirements, we need to embrace technology to speed up change in this area.

State Street is investing in rapid onboarding of standardised businesses to give our clients the tools to effectively manage, add and change counterparties, agreements and relationships. Embracing digital solutions in the securities financing industry comes with organisational changes from front to back and for State Street that includes a change in approach and mindset when it comes to onboarding.

What is the future of collateral?

Effective collateral management is about managing data and having the ability to freely move assets. At State Street, we take a holistic view of collateral in order to break down the traditional silos that have developed between products, business units and entities. We also support the trend towards ‘treasury’ collateral functions on the buy-side, matching the centralised resource management approach that has developed on the sell-side.

With these trends, firms need to have access to real time data, the ability to execute on a change in collateral strategy by moving assets in real time between counterparts, access to funding, and transformation opportunities, whilst at any point in time being able to liquidate the collateral if required.

We will continue to see more pre-trade analytics enabling the full cost of the trade to be considered before execution. In recent years, we have seen scale being redefined - no longer is it about large notional, with new entities and types of firms entering the market. The demand now is to manage a larger number of entities with individual segregation requirements across multiple transaction types. Technology will continue to be a driver of change and with more partnerships in the collateral space, the efficiency of trading and financial resource usage will continue to evolve. ■

The benefits of low code technology

Bill Raczyk, executive director of business engineering & strategy at OCC explains how the clearing house uses low code technology to ensure consistency and delivery in all market conditions.

What is low code and why did OCC start using this technology?
Our low code platform is intended to remediate risk and ensure control adherence. In a heavily regulated market, we want to make sure every step of a process is controlled and understand where any risks exist. We have leveraged automation to take out the variation that could come from manual processes.

Typically what happens is that a department will come to us and call out a specific process in their day-to-day work that they find particularly burdensome or tedious, and we work with them to create a solution that addresses that process, giving their team the ability to focus on other functions of their job. Once we have a solution in place with that team, others across the organisation start taking an interest, asking questions and throwing challenges our way.

Beyond automation, we look at how processes are structured and try to find things that we can address that are not necessarily automation dependent. We look at efficiency and how things can run in parallel to ensure that we not only address the risks that are inherent in the process, but also that we get an added bump in efficiency and effectiveness.

What are the functions where low code/ automation is being used to provide efficiency and reduce risk?
For us, low code is about being able to leverage technology that delivers solutions quickly. Our workflow automation or robotic process automation tools are pre-built models that we can connect to and build an additional logic around to support a more planned, effective flow of tasks.

When we started looking at the corporate actions space, for example, we saw that there were roughly 35-40 different categories or types of corporate actions that typically take place. We built a workflow around the most generic case and we found that the processes were very similar across categories, although the details behind each action would vary.

We were able to build a process whereby our corporate actions team can more quickly react by tracking a proposed action through its various stages. If and when it is finalised, the team can look through the system to determine its impact and apply those changes to ensure the corporate action is properly addressed.

Additionally, we use low code to support our market risk team. Our risk system monitors positions and movement within the market and generates alerts when there are areas of concern in either the option or stock loan spaces. That triggers a process requiring risk analysts to review the situation and take the appropriate actions as necessary.

Did this technology provide any unique benefits during the record market volatility caused by the pandemic?
Low code has been particularly beneficial in this environment. The ability to send information back and forth using processes on a single platform has made it easy to collaborate and ensure everyone is looking at the same information.

In addition, low code allows us to respond to a very dynamic marketplace - the options and securities lending markets have seen tremendous growth over the last 18 months, and the processes we have built out with this technology help us achieve the consistency our clearing members expect from us. ■

OCC Stock Loan Programs

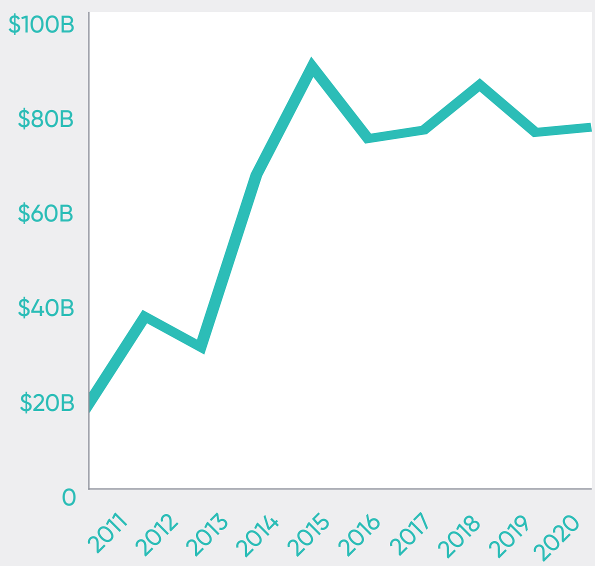
Key Benefits

- Counterparty disintermediation
- Expanded credit and trading allowances for cleared activity
- Risk weighted asset savings of approx. 95% compared to uncleared stock loans
- Margin offset
- Automation and streamlined operations

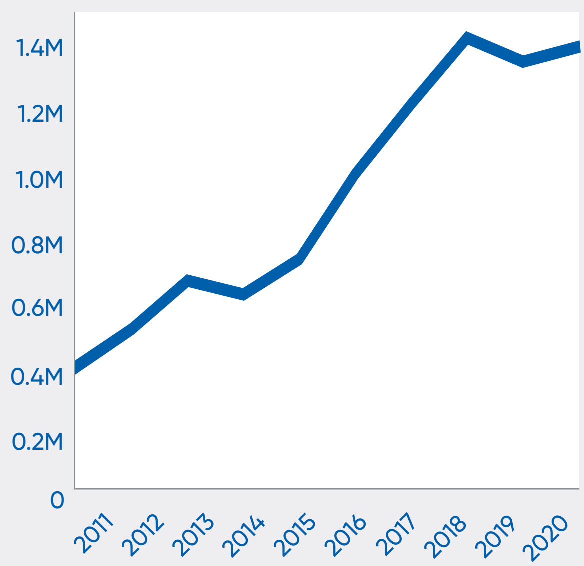
79
HEDGE LOAN PROGRAM MEMBERS

101B
AVERAGE DAILY LOAN VALUE AT YEAR END 2020

Annual Notional Value of Loans



Annual New Loan Transactions



For more information about OCC Stock Loan Programs, visit theocc.com

Smart approach required

Is artificial intelligence technology (such as machine learning) making a significant impact in the collateral management space - or is this a trend firms are still talking about rather than acting on?

The use of machine learning within collateral services has applicability in a variety of areas. While discussions are still in their infancy there are many possible use cases over the medium to longer term.

One of these is collateral algorithms. As the next generation of algorithms evolve to support the optimisation of collateral, historical client behaviour can be factored in to the decision making and selection of assets of the optimiser.

Examples of this could be using data from prior collateral allocated to more efficiently select collateral. If a particular collateral account has never accepted a particular asset or asset class it may be inefficient to spend time calculating whether that asset could be posted.

Substitution requests may come in at the same time each day and may follow a particular pattern which

> "AS THE INDUSTRY EVOLVES, THE CAPTURING AND STORAGE OF THIS DATA IN A DIGITAL FORMAT ALSO NEEDS TO EVOLVE, THE USE OF MACHINE LEARNING CAPABILITY WILL FORM PART OF THAT SOLUTION, CAPTURING RULES FROM WITHIN LEGAL DOCUMENTATION AND CONVERTING THAT DATA INTO A DIGITAL FORMAT."
>
> **James Smith,** collateral services product development J.P.Morgan

can be used to determine a pre-selection process so when the real world request is sent, the algorithm has a head start.

"Event triggers can also be built into algorithms so on receipt of exposure values, reference data or pricing that constitutes material changes to the margin calculation, this would trigger the running of the algorithm to reallocate collateral," explains Michele Filippini, collateral services product manager J.P.Morgan.

"Similarly, the event trigger could be a market event such as a ratings downgrade which may trigger an auto adjustment of haircuts for collateral schedules."

An event trigger could also be used to generate the process of allocating collateral. For example, if the last exposure is usually agreed by a certain time each day then collateral could be collected shortly afterwards.

"As collateral algorithms develop, the need for timely data also becomes more critical, and eligibility rules and data sit at the heart of the algorithm," observes James Smith, collateral services product development J.P.Morgan.

"As the industry evolves, the capturing and storage of this data in a digital format also needs to evolve," he adds. "The use of machine learning capability will form part of that solution, capturing rules from within legal documentation and converting that data into a digital format."

Machine learning can also be useful in projecting the impact of macro events on the balance forecasting and P&L projection of collateral businesses. The business may be able to produce dashboards and client level matrix around client behaviour and revenue analysis, but the process of looking at how macro themes may impact profitability can be difficult.

"So for example, how would the underlying mark to market on a securities lending book correlate to the collateral posted – and how could a drop in the value of a currency or an index affect the revenue of the business, making assumptions on how markets previously behaved?" says Smith. "Does a drop in the value of equities correspond to an increase in use of fixed income assets? Does the cost of collateral determine the split between non cash and cash collateral use and how does that impact on revenue?"

The above use cases may allow the end to end operating flows to operate more smoothly and from a collateral manager's point of view, allow them to operate a more efficient collateral system and service while reducing risks.

Firms are very keen to apply next generation technology in their platforms, but it is not necessarily about AI or regular intelligence - there is a lot of intelligent decision-making technology being applied, explains Bimal Kadikar, founder and CEO Transcend.

"Our clients are leveraging a variety of different algorithms and I see that as a continuum, because there is intelligent decision making and then there are AI-based trends," he says. "Automation and control is another interesting area. The more automation you have (and if you have proper control systems in place) by definition you will have better controls. Automation transitions intelligent decisions into reality, allowing firms to experience the transformational results of their strategy."

Transcend clients are leveraging a variety of different technology solutions with increasing levels of sophistication. A key focus area is to harmonise disparate data sources so they gain more insightful analytics.

"Intelligent decisions are made on the analytics using complex algorithms to recommend the best ways to steer business decisions," says Kadikar. "Automation tools take these recommendations and convert them into operational reality with full straight through processing, feeding back into the analytics and completing the feedback loop. As the level of sophistication and automation increases, the need for tighter metrics and controls are imperative."

The industry tends to talk about solutions in terms of technology without necessarily correlating them with the problem they are trying to solve according to BJ Marcoullier, head of sales at Transcend.

"If automation is your goal, depending on your business flow you might utilise different types of technology," he says. "AI might be very relevant to a certain subset of problems, but there could be rules-based or sequential technologies out there that are much more germane."

He reckons clients need to think about their ecosystem and how they should apply these smart technologies across a variety of complex or routine needs.

Michael Poole, head of business development APAC for collateral access BNP Paribas Securities Services observes that automation is vital to ensure robust processes, especially true during times of

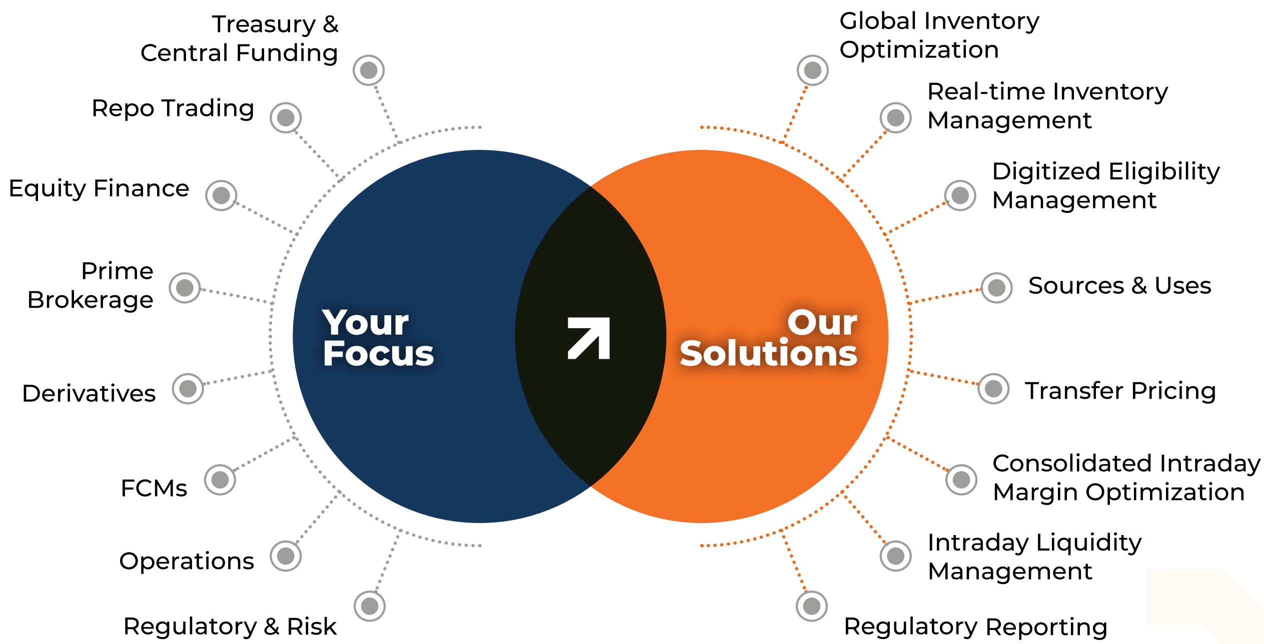
"EVENT TRIGGERS CAN ALSO BE BUILT INTO ALGORITHMS SO ON RECEIPT OF EXPOSURE VALUES, REFERENCE DATA OR PRICING THAT CONSTITUTES MATERIAL CHANGES TO THE MARGIN CALCULATION, THIS WOULD TRIGGER THE RUNNING OF THE ALGORITHM TO REALLOCATE COLLATERAL

Michele Filippini, collateral services product manager, J.P.Morgan transcend

Inventory | Liquidity | Funding

The Optimization Leader

Transcend's unique technology provides a true, enterprise-wide solution for collateral, funding and liquidity optimization – in real-time. So whatever your needs, trust Transcend to help drive greater profitability across your collateralized businesses.



info@transcendstreet.com | Stay Connected | +1-866-608-0381 | transcendstreet.com market stress and volatility. "For example, margin calls increased to up to three times normal volumes in the first and second quarters of 2020 due to the effect of Covid-19 on the markets," he says.

"There is a great deal of talk about AI, but we have real world examples of rolling out AI to benefit collateral management teams," observes Trevor Negus, senior product manager (TLM collateral) at SmartStream Technologies. "This includes machine learning for the reconciliation of ad hoc collateral data, reading unstructured data to automate the margin call processes as well as predicting calls to be sent and collateral agreed."

Negus describes automation and control as being interlinked since automated processes eradicate human error and therefore reduce the need for secondary checks.

"Europe and the US are further ahead in thinking about automation although many of our Asian clients are going to be onboarding smaller, late phase, firms," he says. "The larger firms will have to process more margin calls and you can do that in two ways - automate or hire more people - and obviously automation is the preferred option."

While there are potential benefits from new technologies, such as tokenisation of collateral assets to streamline settlement and using machine learning to identify future margin call activity and funding requirements, what is more pertinent is whether these tools can be developed into practical and cost-effective solutions.

That is the view of Neil Murphy, business manager triResolve who suggests that it is a little to be talking about widespread adoption of cutting-edge technology for collateral while the collateral teams of many firms are still struggling with spreadsheets and email.

"This perhaps reflects not only the wide disparity between different firms' collateral capabilities, but also their needs," he says. "There is some way to go before machine learning and AI become established

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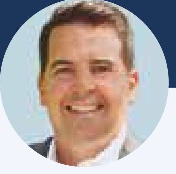
transcend

THOUGHT LEADER

Moving up the strategic value chain

Bimal Kadikar, founder and CEO and **BJ Marcoullier,** head of sales at Transcend discuss how the role of technology within collateralised businesses has evolved over the past 20 years and what future technological capabilities will look like.

The capital markets value chain consists of an intricate ecosystem of activities conducted between various groups within a firm as well as across several external market participants. With the volume of these activities increasing alongside a growing network of market players, the last 20 years has seen an accelerated investment in technology to alleviate the growing complexities.

Perhaps no market better evidences this evolution than that of electronic trading for equities, FX and liquid fixed income securities. Large increases in trading volumes, federated trading venues, regulatory requirements, and diverse market participants necessitated the automation of trading processes, including market making, sales, transaction booking, and clearance and settlement.

Electronic trading platforms have evolved to the point where now millions of trades are executed daily using technology that streamlines the distribution of asset prices, adjusts offers, books trades, reconciles transactions, and updates risk limits. As a result, front-office professionals have redirected their focus to higher order priorities such as market focus, pricing strategy, and risk mitigation.

A similar evolution is occurring within the collateral markets. Twenty years ago, collateral elements of the broader collateral management space - the vast majority of firms have more pressing problems to address."

AI and machine learning have long been buzzwords in the industry, but there is still a gap between what people say they are doing and their outputs suggests Mike Norwood, global trading product owner at EquiLend.

"I think there is an increasing understanding that more needs to be done and firms have to be less reliant on others to build AI and machine learning tools and dedicate the necessary budget to innovation," he says.

There is a clear incentive to be a first mover when it comes to adoption, but there is also a fair amount of hesitancy in the industry adds EquiLend head of sales EMEA, Grant Davies. "The headwinds are going in the direction of AI and machine so the headline here is automate or be automated."

Norwood describes control as the enemy of automation since having direct control over what is happening, why it is happening and when it is happening are reasons given for not automating. "That is a barrier to automation until models become sophisticated enough to mirror what a human would be doing in terms of decision making," he says. ■

THERE IS SOME WAY TO GO BEFORE MACHINE LEARNING AND AI BECOME ESTABLISHED ELEMENTS OF THE BROADER COLLATERAL MANAGEMENT SPACE - THE VAST MAJORITY OF FIRMS HAVE MORE PRESSING PROBLEMS TO ADDRESS."

Neil Murphy, business manager triResolve

technology played a supporting role by automating more routine tasks, such as identifying margin requirements and creating workflows with clients to track and exchange margin often specialised by asset class. However, the technological capabilities of collateralised businesses are increasingly moving up the strategic value chain to intelligently automate daily decisions, providing benefits beyond operational efficiency.

Why Now?

The financial crisis of 2008 and subsequent regulatory forces have pushed financial firms to significantly improve their collateral and liquidity tracking and reporting requirements. More recently, coming out of Covid-19, firms recognise the criticality of digitisation and automation more than ever before.

With ongoing market volatility, front-office and operations resources have struggled to satisfy increased collateral requirements resulting from high frequency margin calls and its impact on overall funding and liquidity positions. Because technology has progressed in recent years to support the integration of real-time data into automated workflows, firms leveraged technology to automate some daily margin and collateral decisions.

While these capabilities may have been around for a few years, Covid-19 has created the urgency firms needed to prioritise implementations of smart technology. Now, many firms have systematised key collateral activities including determining the best funding transactions, providing attractive pricing to clients when their transactions create efficiency, pledging collateral across a diverse set of obligations, and ensuring that costs are correctly allocated to the businesses based on funding that encourages accretive business.

A pivotal shift

Technology is increasingly transitioning knowledge previously held within various departments of a firm into algorithmic intelligence. This stage of technological evolution is pivotal and provides firms with a scalable solution that not only supports a dynamic, high volume collateral ecosystem, but can also directly impact business profitability.

For example, Transcend's collateral optimisation solution overlays sophisticated algorithms and rulesets on top of real-time inventory and obligation data, empowering firms to not only identify the most economically efficient collateral to pledge, but also automate multiple collateral instructions and moves across systems and jurisdictions. ■

Centralise, connect, automate and optimise

David White,
chief commercial officer Cloud Margin

How does your technology empower collateral and ops teams to run more efficiently, cut costs, and reduce risks?

Our platform helps all firms on the sell-side, buy-side and even asset servicers do four main things: centralise, connect, automate and optimise their collateral management. These pillars build off each other, meaning firms looking to get the most out of their collateral programme should first centralise all processes and data, then connect to other players in the ecosystem across the workflow based on their operating nuance, automate across that workflow to achieve STP, and then perform robust optimisation techniques to achieve the most efficient use of their collateral.

Our technology facilitates this is in a number of different ways. CloudMargin enables firms to bring in any type of asset into the platform and apply a fully automated common workflow. We provide connections to a full spectrum of best-in-breed fintechs, tri-party agents, custodians and market data sources and we have an extensive range of APIs for firms to connect to their own up- and down-stream systems.

We also have a built-in optimisation engine and connectivity to an algorithmic optimisation partner, as well as an optimisation API that allows for more flexibility – something we have focused hard on.

Our robust reporting suite is also a huge advantage and differentiator for us, with the flexibility to allow clients to create, build, format, build logic into, and then schedule and distribute reports via any format and any channel to any location.

They can also give teams direct real-time access via logins to dashboards specifically created for given functions. For example, a credit risk dashboard can highlight collateral shortfalls across red-list clients, concentration analytics on held collateral and a real time view of collateral in transit.

All these aspects help firms save costs, reduce risk and use collateral more efficiently across the organisation.

How does on-premise total cost of ownership analysis compare to the cloud?

Work with prospects has given us a detailed breakdown of all of the costs involved in running operations. We looked at those costs over a 10-year period and compared them to our costs and what we noticed immediately was the number of different costs involved in a vendor on-premise and an in-house solution.

First of all, for the former a firm has to pay an annual vendor licence fee. On top of this are a maintenance fee, user fees and vendor professional services fees. If they need to get something out of the system that requires bespoke work, the vendor will charge for it.

In addition, firms have to host the solution on internal servers and provide security and IT support for the local installed version of that software, alongside all the other applications that are either feeding data into that system or receiving that data.

Firms must also release patches on the version of the software they are running. These need to be deployed, tested and released, all of which further increases total costs.

Conservatively, the sum total of these costs for either an on-premise or in-house solution is over twice the price of our solution on a yearly basis. We work hard to give people an understanding of how much they can save and how much more efficient they can be. Keep in mind that as a single-instance solution, our clients get instantaneous benefits of all upgrades simultaneously without incurring extra cost.

What is your typical client profile?

If you looked at our subscriber base you would see a proportional representation of the different segments of the derivatives market including corporates, hedge funds, large and small asset managers, small banks and regional banks, as well as asset servicers and tier one global investment banks.

All these clients can leverage our deployment model and the automation we can deliver. Some will place a greater importance on optimisation - if they have a diverse range of collateral they can use across the agreements they are collateralising on they will see more value there, whereas those just collateralising with cash may be more interested in the data insights and light-touch process we deliver. ■

Collateral tokenisation continues to evolve

What effect will increased use of digital collateral have on clients' operating models?

With industry solutions such as intraday repo and HQLAx, digital collateral is already a reality. Momentum around solving for specific transactions or market pain points indicates that tokenised collateral will evolve more broadly across the financing ecosystem.

Numerous independent legal opinions - reinforced by consultation papers and reviewed by US and EU regulators - support the validity of a digital token on DLT representing ownership of an underlying asset observes Paul Pirie, collateral services product manager J.P.Morgan.

"However, there is a fine line between representing ownership of an underlying asset (or basket of assets) and creating a new asset in tokenised form," he says. "This is where the legal and regulatory framework has to be very well defined and transparent in order to allow counterparties to have comfort in the value of the 'digital' collateral they are receiving."

The line becomes even more blurred when true crypto or natively digital assets come into the mix and become eligible as collateral.

With collateral becoming more and more of a centralised global function, consistency on the regulatory framework across regions will be critical. The differences between the US and EU rules on uncleared margin requirements are already creating challenges, so now is the time to take a collective approach, leveraging industry bodies to lobby regulators with a consistent message.

Transparency in the assets that underpin the digital token is also vital to avoid any potential structured debt type risk.

"Operational risk and reconciliation challenges associated with the $10trillion+ collateral market should be the drivers behind a shift into digital platforms," adds Ed Corral, global head of collateral services strategy, J.P.Morgan. "However, these are often thought of as secondary to the front desk priorities of increased profit margins, portfolio optimisation and intraday liquidity. Once COOs realise the potential benefits in this space, adoption tends to gain momentum very quickly."

Up to now the focus has been on making impossible transactions possible or facilitating significant cost/capital savings and with this comes a fresh set of eyes in the adoption of a new concept explains Julie-Anne Atkins, sales executive J.P.Morgan.

"Newcomer advantage could be argued to have the ability of getting from A to B quicker than a perception of moving from the comfort of an existing structure into relatively unchartered territory," she says. "An existing participant to a transaction will always want to consider whether they have altered their risk position."

Enforceability is another key issue. Until it is specifically covered within a legal framework, independent legal opinions are the only way for market participants to gain comfort.

Legal analysis would focus on:

- Validation that the tokenised position is not a security in its own right, but rather a representation of ownership in the underlying asset
- Validation that the smart contracts on the DLT are effective in transferring ownership of the tokenised position to a counterparty or creating a security interest
- Enforceability of the above in a court of law under relevant legal jurisdiction

Pirie notes that tokenisation is not a means of bypassing regulation and should be seen instead as a way to take risk out of a market and improve efficiency even in the most inefficient markets.

"It will be more complex to implement in some markets than others, but in the long term will create a globally consistent, efficient, standardised and real time environment for moving collateral," he adds.

"There has been mention, in recent publications, of a potential additional capital charge due to a perceived increase in operational risk caused by the tokenisation layer. We need to look at the overall risk across the end to end collateralisation flow, which will be significantly reduced through tokenisation just as tri-party took significant risk out of the repo and securities lending markets."

According to Atkins, it is likely that in the medium to long term, tokenisation will change the way the industry manages its collateral obligations.

"We would not expect a 'big bang' switch on across all markets though, so traditional structures will not disappear any time soon," she says. "We view this as an evolution for tri-party and collateral services."

Tokenisation could potentially have a huge impact on tri-party according to EquiLend head of sales EMEA, Grant Davies.

"The opportunity is there to speed up the collateral transaction to almost instantaneous, but the challenge initially is standardisation to truly enable the process," he explains. "For custodians, tokenisation is the next necessary evolution to improve efficiency. They also need to protect their own infrastructure and revenue structure."

One of the key things facing the industry is barriers to entry - with one of the biggest being the complexity of what people have to do to enter the securities finance marketplace, adds Davies. "Tokenised collateral breaks this down to a huge extent and presents a huge opportunity," he says.

Regulators may be looking into USD stablecoin and crypto in terms of possible regulatory frameworks, but John Pucciarelli, head of industry and regulatory strategy at Acadia says he is not sure that we have even scratched the surface of this topic in terms of enforceability.

"We are working with some firms around this topic and we are exploring pilot programmes but I don't know of anything that is actually in production," he adds. "I think this is a space that is going to expand soon though. It is going to be a disrupter to some legacy infrastructures and work flows and could potentially disrupt tri-party custody flows to a certain extent."

HQLAX uses distributed ledger technology to record ownership of securities on a ledger which can be shared across participants and operators involved in its operating model. As with every innovation, some changes will be needed to take advantage of the benefits suggests Nick Short, COO.

"In our cases, clients' operating models may need to reflect ownership changes at more precise moments in time," he says. "If you couple this with one of the other longer term benefits of digital collateral - which is shared ledgers - it could be argued that clients' operating models will need to become more integrated with digital collateral ledgers in order to reflect more real-time ownership changes of collateral."

Cloud Margin recently announced a partnership with tokenisation company Ivno, primarily to work on providing instantaneous and secure settlement via the blockchain. Through this combined service, two parties can not only access a fully automated collateral process - they can also put in place a mechanism to instantaneously exchange the assets they have agreed to exchange for collateral purposes.

"That means you move into a world where you can not only have agreement on what collateral is going to be moved first thing in the morning - you actually move the agreed collateral, thus greatly reducing settlement time and fails," explains David White, chief commercial officer at CloudMargin. "This can significantly improve balance sheet efficiency."

He acknowledges that in a world where resources are limited and firms are having to micro-manage their IT spend, it has to be made as simple as possible for firms to move to this model. ■

The road ahead

Guido Stroemer, CEO and **Nick Short,** COO of HQLAX outline the key elements of the firm's product roadmap.

HQLAX's core clients are financial institutions active in securities lending and collateral management. Our platform enables market participants to transfer ownership of securities seamlessly across disparate collateral pools at precise moments in time, which allows participants to optimise their liquidity management and collateral management activities, generating operational efficiency gains and capital cost savings.

In June we added J.P.Morgan as a strategic investor in our Series B funding round. This follows on from the $14.4m Series B funding we secured from BNY Mellon, Goldman Sachs, BNP Paribas Securities Services, Citigroup and existing shareholder Deutsche Börse at the start of this year.

This funding will be used to accelerate the core premise of our platform – helping the industry address European collateral fragmentation by extending its connectivity to leading tri-party agents, custodians and market participants.

Not only is the financial backing substantial, but the public commitment from our new investors to connect to our platform is validation of our shared vision to accelerate collateral mobility across the global securities finance ecosystem.

NOT ONLY IS THE FINANCIAL BACKING SUBSTANTIAL, BUT THE PUBLIC COMMITMENT FROM OUR NEW INVESTORS TO CONNECT TO OUR PLATFORM IS VALIDATION OF OUR SHARED VISION TO ACCELERATE COLLATERAL MOBILITY ACROSS THE GLOBAL SECURITIES FINANCE ECOSYSTEM.

We already have Clearstream, Euroclear and J.P.Morgan tri-party connected to the platform and by the end of this year we will have added Bank of New York and BNP Paribas tri-party as well as Citi as a custodian.

Over the course of 2021 we are building out an agency securities lending solution, which will enable borrowers to borrow securities from agent lenders and collateralise them using our model and using the advantages of simultaneous DvD. This is an extension of our existing model.

We are also working with a number of institutions on inter-company firm financing flows, which enable institutions to change ownership collateral freely between two entities of their parent structure – something that is of interest to a number of our clients in 2021.

We will connect to trade execution and post-trade reporting venues as and when we see fit and we are in dialogue with a number of these venues who would help support our operating model. We are already connected to Eurex, which provides the trade execution platform for our baseline product.

Looking further ahead we are also focused on helping institutions satisfy their variation margin requirements by enabling collateral ownership to move freely. All these developments will extend the use cases of our baseline product.

Beyond this we are already developing plans for how to exchange securities versus cash and to what extent our platform would interact with other forms of digital cash. What this provides is the ability to do repos and intraday repos - developments that will further broaden our potential client base.

Digital collateral records or DCRs are the record of ownership of securities that are recorded on our platform's ledger. We are currently designing a prototype for a DCR dashboard to provide our clients with an overview of encumbered and unencumbered DCRs.

One interesting use case that we are pursuing with one of our clients is to leverage this dashboard to enable the client to transfer ownership of unencumbered DCRs between two of its legal entities on a 24/7 basis. We are also in early design stages for what we are calling a composite DCR (a single DCR to be collateralised with DCRs from multiple triparty locations) and to enable dynamic substitution of DCRs on a DvD basis.

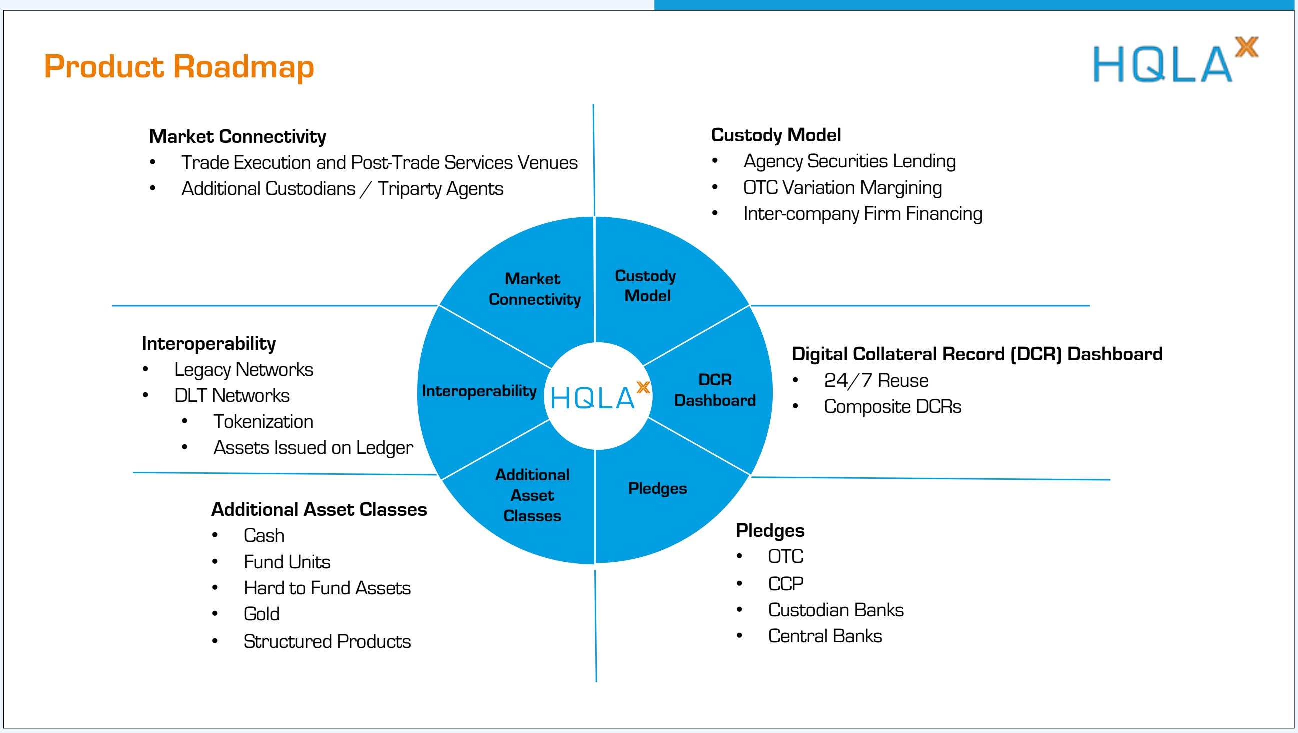
We are currently in discussion with a major EU derivatives CCP to accept DCRs as record of ownership of baskets of securities to satisfy CCP initial margin requirements. We are also considering use cases in the OTC margin space, specifically related to mobilising money market fund units held in Clearstream's triparty environment.

We are focused on Europe at the moment, although we work with a number of US institutions that are operating in Europe. Our target audience is market participants who need to change ownership of collateral that is located in Europe and once we have established the platform in Europe it would come as no surprise that we would be looking to extend it into other jurisdictions.

Our approach to this market has been to identify business problems and develop the technology to address them, but we are constantly innovating in terms of product use cases. Over the period of the pandemic we have seen an increase in client interest in using our solution to satisfy variation margin requirements, driven by market volatility in 2020.

We spend a lot of time with our clients, going through the particular pain points they face. Clients often come to us with ideas and we are therefore in a unique position to identify pain points in the market that we can help address - our focus is very much on long term trends. ■

OUR TARGET AUDIENCE IS MARKET PARTICIPANTS WHO NEED TO CHANGE OWNERSHIP OF COLLATERAL THAT IS LOCATED IN EUROPE AND ONCE WE HAVE ESTABLISHED THE PLATFORM IN EUROPE IT WOULD COME AS NO SURPRISE THAT WE WOULD BE LOOKING TO EXTEND IT INTO OTHER JURISDICTIONS.



Ghost hunters

Iain Mackay, global product owner for post-trade services at EquiLend, explains how CSDR will bring to the forefront the importance of collateral movements in line with the underlying settlement of a securities lending transaction, how some firms are missing an important element of the settlement process which may cost them millions, and how EquiLend Exposure is mitigating these risks.

The problem

With the advent of CSDR requirements, the need for securing a stock via a same-day stock loan transaction to avert a failed trade has grown. Without such coverage, fails will cost participants close to $300m yearly under the new rules according to one estimate.

Managing inventory to achieve timely settlement has become a particular challenge as the number of trades collateralised with non-cash collateral has increased. With more than 60% of securities lending now collateralised this way, ensuring a trade can execute, be instructed, have the collateral delivered and then settle – all in the same day – has become even harder.

These issues are further exacerbated by what Mackay calls 'ghost settlement'.

"Securities lending transactions settle on a different timetable than cash equity trades - that is, on a free of payment (FOP) schedule compared to delivery-versus-payment (DVP)," he explains. "These can be hours apart. Therefore, a stock loan transaction initiated to cover a failing trade may settle just fine later in the day, but still result in the cash equity transaction failing because of the earlier cut-off time for DVP settlement."

Mackay estimates these so-called ghost settlements cost market participants tens of millions of dollars per year.

The solution – EquiLend Exposure

EquiLend Exposure uses the data from booked trades to manage the collateral that is required to support those transactions, shortening the latency of the total trade lifecycle and thereby reducing fails, including these ghost settlements. It operates at three stages of the trade cycle:

1. Firstly, it helps clients agree on the valuation of collateral to be moved. EquiLend Exposure collects the trade data from both counterparties and supports the validation of the data, either by reconciling the two valuations or providing clients with the valuation tools to do it
2. Once the trade information has been agreed, EquiLend Exposure automatically instructs the tri-party agent to move the collateral between the counterparties
3. Finally, EquiLend Exposure informs the lender that the collateral has been delivered to their account so they can release the loan. When the tri-party agent informs EquiLend that the collateral has been pledged, the lender sees that information immediately. EquiLend Exposure then provides the messaging to release the loan, thereby enabling full STP of the collateral management process

Eliminating ghost settlements is not the only benefit, of course. By automating this process, the latency between execution and settlement is significantly reduced, ensuring that securities lending (FOP) trades can settle within the cash equity (DVP) deadline.

Ultimately, EquiLend Exposure helps firms reduce RWA costs by eliminating under- or over-collateralisation, reducing operational costs associated with manually reconciling discrepancies and submitting required value numbers, and reducing settlement costs associated with failing trades or buy-ins, all within a single portal. ■

Collateral management costs

Trevor Negus, senior product manager (TLM collateral) at SmartStream Technologies explores some of the options for reducing collateral management costs.

Inventory optimisation

Collateral is a scarce resource, so effectively managing a firm's inventory is fundamental. TLM collateral can publish in real time not only the collateral that is held and posted, but also the specific instruments that are eligible on specific agreements. This simplifies the process as the optimisation engine will already know where to use that collateral.

This streamlines and reduces the time taken to establish where best to use assets, avoiding shorts, and unnecessarily using expensive collateral.

APIs

Firms need to be able to communicate out their collateral positions and eligible instruments and consume back in the optimal allocations against those agreements.

It is important that is all done in real-time. Our APIs are all versioned, documented, authenticated, secure and stable and are backward compatible, which lowers overall cost of ownership. One of the biggest expenses for firms is that when they upgrade software, they have to rebuild all the connectivity between the systems and recompile all their APIs - because we have public APIs that are backwardly compatible, recompilation is not necessary.

Microservices

Breaking out system components into different microservices allows firms to take on new functionality without having to upgrade the whole system. This reduces the time and costs involved in system upgrades and thus lowers the total cost of the collateral programme.

Furthermore, firms can cherry pick the components of the application they wish to use. It may be that they have their own internally built CSA warehouse but require us to supply the margin call workflow.

This is made possible because they can connect our microservice components using our APIs to their own internal systems, allowing them to add new functionality much more quickly.

Microservices is something that banks are clearly embracing and we see this trend being replicated in the collateral world.

Hosting

Hosting in the cloud is becoming more and more important for firms, enabling them to concentrate on their core competencies while the software vendor supplies and supports the technology.

Historically, collateral management was seen as such a core function that it was deemed too risky to do it in the cloud and there will still be firms that want to deploy locally. However, many are moving to a cloud approach because it is more effective from an installation perspective - all the production support, BCP, auditing and archiving supplied by the software vendor can be mutualised because they are supporting multiple firms.

Firms can manage their processing power requirements more efficiently, scaling up when needed and scaling back when not. This can reduce costs considerably in comparison to an internal build, where hardware has be ordered and deployed. Our on-demand (hosted) deployment significantly reduces demand on internal IT resources, while our private cloud approach eliminates concerns around security, co-mingling of data, or performance bottlenecks. ■


SMARTSTREAM
Let's talk about
the next wave in
AI, Machine Learning
& Managed Services