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Foreword

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

As the industry continues to respond to changing market conditions and the implementation of additional regulation – including the final phases of uncleared margin rules (UMR) – we are seeing record interest in outsourced services such as collateral management and securities financing. The ability to look across standalone services, or integrate them operationally, is a major topic with both the buy and sell-side.

With heightened demands for collateral and the need to mobilise inventory across borders and entities to make sure that it's in the right place or of the right type, securities financing and collateral management are increasingly two sides of the same coin. With the final implementation phases of UMR, the need to deploy an integrated and end-to-end approach to managing collateral and financing will be critical for clients needing to meet their new margin requirements.

The complex interplay between cheapest to deliver collateral requirements and the search for alpha though securities lending is constantly evolving. Whilst banks and broker dealers have become much more efficient in managing their inventory, collateral and financing needs in the face of the various financial resource constraints, the buy-side is now having to think about this – perhaps for the first time – as their activities fall in-scope for the final phases of the uncleared margin rules. They will need to post segregated initial margin, likely in the form of securities (as opposed to their variation margin which is usually cash). Therefore, traditional buy and hold asset managers – who lend securities but don't expect that process to interfere with the investment process – now have an additional driver of demand for that same pool of securities, if they intend to use them to meet margin obligations.

To manage this constantly evolving dynamic and real-time data, analytics and the ability to mobilise assets are essential. Indeed, better automation and improved data analytics are in great demand across the board as collateral and financing form a greater part of pre-trade decision making. Data will become even more significant as the industry grapples with transaction reporting under SFTR for the first time and when the increased burden of settlement efficiency through CSDR ultimately begins.

As an agent, we believe it's crucial to stay on top of these market trends and continue investing in solutions to help institutions achieve their individual financing and collateral needs. This allows them to have the flexibility they need to manage a variety of securities financing requirements, singly or in combination, based on their specific needs. We are delighted to sponsor the annual Collateral supplement, which explores these key themes and client needs in depth. ■

Why should asset owners and asset managers care about collateral?

With the uncleared margin rules on the horizon, the buy-side is engaging with collateral management and optimisation more than ever before. We look at the issues triggering this engagement and examine how an effective approach to collateral can place firms in good stead in the face of change.

While collateral management may have been a focal point for some of the largest and most forward-thinking asset owners and asset managers for some time, regulatory change and mounting collateral obligations mean that buy-side firms of varying types and sizes are increasingly turning their attention to how to optimise their approaches in order to best leverage collateral and comply with regulatory requirements.

"The buy-side is now more engaged in collateral management than ever before," says Nicholas Newport, managing director at consultancy InteDelta. "There are many drivers but the real game-changer is regulation, in particular the move to mandatory and standardised rules around variation margin and initial margin for uncleared derivatives. Nor is this just in the traditional markets, we see significant interest in collateral management across Asian markets as well as Europe and America. Global regulatory standardisation has created a common conversation across most jurisdictions which have any meaningful derivatives market."

The uncleared margin rules (UMR) involve the mandatory exchange and segregation of initial margin (IM) on non-cleared derivatives trades as part of a framework designed to reduce systematic risk and promote central clearing. The rules were originally due to be rolled out in five phases to capture firms with an aggregate average notional amount (AANA) of non-centrally cleared derivatives greater than €3 trillion, followed by €2.25 trillion, €1.5 trillion, €0.75 trillion, and €8 billion, with the fourth wave (€0.75 trillion) most recently coming into effect in September 2019.

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> **- Matt Wolfe,** vice president of strategic planning and development at OCC.

The first four phases have mostly impacted sell-side firms and some of the larger buy-side firms, with many smaller buy-side firms due to be swept up in the final wave, which was expected to be implemented in September 2020. In July 2019, the Basel Committee on Banking Supervision and the International Organisation of Securities Commissions (IOSCO) announced that the €8 billion threshold would be delayed until September 2021 and an additional phase for firms with an AANA of non-centrally cleared derivatives over €50 billion would be introduced in September 2020. This followed on from the Basel Committee and IOSCO's March 2019 announcement clarifying that documentation, custodial and operational requirements only apply if firms' bilateral IM amount exceeds a €50 million IM threshold.

Shifting priorities and demands

Regulation is not the only issue impacting the buy-side's approach to collateral. ESG (environmental, social, governance) is one such issue that has been under the spotlight of late, and the momentum behind it shows no sign of abating. In 2018, signatories to the Principles for Responsible Investment (PRI) were up by 21% over 2017, and according to the Global Sustainable Investment Alliance's April 2018 *Global Sustainable Investment Review,* sustainable investing assets grew by 34% between 2016 and 2018.

For asset owners and asset managers engaged in securities lending, recalling and restricting securities to protect voting rights is one method by which the buy-side can align their activities with ESG principles. However, as the conversation surrounding the interaction of ESG with securities lending and borrowing picks up pace among the beneficial owner community, the question of collateral acceptability continues to garner attention. Namely, how can the buy-side ensure that the collateral they receive from borrowers is compatible with their ESG policies and how can providers assist in making this process as seamless and efficient as possible?

Bond says: "A powerful eligibility engine that provides for flexibility around rule composition can enable institutions to take comfort in the fact that they can quickly adapt to align with ESG policies."

J.P. Morgan's Emerson agrees that ESG is now firmly on the industry's radar, and has particularly risen up the agenda among pension funds. "As an organisation, we are also ensuring that wherever possible ESG is a part of our product roadmap," she continues.

ESG may place more restrictions on the collateral beneficial owners will accept, yet conversely, there has also been a drive for the buy-side to be more flexible in order to improve their attractiveness from a securities lending perspective. As Matt Wolfe, vice president of strategic planning and development at OCC (Options Clearing Corporation), states: "If a lender can differentiate themselves by being more flexible with regard to collateral, as well as things like term, it makes them a more attractive lender and they can increase their utilisation versus other lenders who are perhaps more restrictive."

"The borrower community are constantly looking for buy-side institutions to expand their collateral offering – that includes more non-cash collateral, broadening their acceptance to include ETFs and ADRs, or additional equities indices as brokers look to finance emerging markets such as Korea and Taiwan," says Bond.

He explains that as more borrowers run long positions in local government bonds off the back of local trading and initial margin requirements, Although this has pushed back the date on which some buy-side entities come into scope, preparing for UMR is not an insignificant undertaking and those firms benefiting from the extension can harness the additional 12 months to ensure they are well positioned for September 2021.

"The uncleared margin rules require firms to sign the appropriate legal documentation with custodians and conduct a broader negotiation of agreements. Overall this is a huge job," says Martin Seagroatt, marketing director for securities finance and collateral management at fintech firm Broadridge.

Many buy-side firms will likely be unfamiliar with the processes and obligations associated with the IM rules and may not have the level of resources or in-house expertise available to sell-side firms that have already fallen into scope of the UMR's initial phases.

Remaining connected at an industry level could assist firms in building familiarity with the topic, notes Katie Emerson, head of securities lending and collateral management for EMEA platform sales at J.P. Morgan, for example engaging with trading counterparties, industry utilities, peers and associations, as well as leveraging the experience of providers who have partnered with clients through previous phases of the regulation.

"Firms should be speaking to experienced providers so that they can start to plan accordingly," says Ed Bond, head of agency securities lending and collateral management, Asia Pacific at J.P. Morgan. "They need to think about resources and local regulatory requirements, in addition to new requirements such as the appropriate calculation methodology. The sooner they have understood the work required and

buy-side institutions lending high quality liquid assets can gain an advantage if they are willing to be flexible around the collateral they will accept in return.

"Collateral flexibility is going to be increasingly required, due to regulatory pressures and the need for better controls," adds Transcend CEO Bimal Kadikar. "But once buy-side firms have that flexibility, they need to make sure they have collateral visibility and the best controls in place."

Whether it be impending regulation, ESG considerations or greater collateral flexibility, it is clear that the collateral ecosystem is becoming increasingly complex for the buy-side. "Firms need real-time monitoring and reporting capabilities, governance processes and frequent spot-checks on the collateral being received. They need automated tools to be able to do that – it all points to technology," says Robert Frost, head of product development at Pirum Systems.

The ability to modify electronic collateral schedules in an automated way, for example, could enable buy-side firms to more easily integrate ESG policies into securities lending and collateral management programmes, notes Wolfe. He adds: "That can be difficult to manage when collateral schedules are essentially an appendix of a legal document that needs to be modified, executed by two parties, and then manually updated by the custodians – it's a slow and inefficient process."

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> **- Alvin Oh,** global trading product owner at EquiLend.

developed an implementation plan with detailed deliverables and timings, the sooner they can identify any gaps and prepare for them."

When doing so, it is important to take into account all of the components touched by the rules, adds Emerson. "Often firms are very focused on needing a custody account to hold the collateral related to the initial margin but they also need to be thinking about all of the 'upstream' components that are required before they even get to the stage where they hold the collateral, such as IM calculation, movement, and settlement."

As well as triggering buy-side firms to re-evaluate the way in which they manage collateral, IM collateral eligibility criteria could also bring to the fore new considerations around the types of collateral firms hold. Roy Zimmerhansl, practice lead at Pierpoint Financial Consulting, says: "They need to ensure they have access to good collateral and if not, then securities finance transactions may be used by buy-side firms that need to find securities that will be acceptable as collateral in their bilateral arrangements."

UMR may be the most significant regulatory driver for the buy-side when it comes to collateral but it is also accompanied by a desire to squeeze more revenue from securities finance to offset fee compression, points out Seagroatt. "Buy-side firms are therefore becoming more engaged in collateral management and more innovative in the various structures required to support collateral upgrade-downgrade trades for example," he says.

Alvin Oh, global trading product owner at EquiLend, a provider of trading, post-trade, market data and clearing services for the securities finance industry, notes that buy-side participants are also looking for efficiencies across trading platforms to net their exposure. He says: "Because GC spreads have come down, firms more than ever need to maximise their books and make smarter use of their inventory. In this environment, more robust risk management and collateral management flexibility are increasingly important."

Joining the dots

The growing focus on collateral management has led firms to take a more holistic approach, enhancing transparency around collateral availability and obligations across business areas.

"Buy-side firms now have to be more aware of their collateral positions; that will let them determine how best to leverage the collateral that they have and how to optimise its distribution," says Bimal Kadikar, chief executive officer at collateral and liquidity management technology provider Transcend. "We have seen examples of larger players consolidating their desks and mid-sized players implementing further governance or processes in order to increase connectivity between silos, such as securities finance and derivatives."

Looking at the bigger picture, encompassing all of the ways in which a firm uses collateral, can help to inform decision making and enable the buy-side to gain as much value as possible from collateral. "What firms would not want to do is give up the intrinsic value in certain trades, such as in agency lending, because they are using that collateral for other needs when there could have been an alternative option available that would have been more cost effective," explains Bond.

Ensuring that front, middle and back-offices are aligned also has a key role to play here. Indeed, collateral management is increasingly moving from a back-office to a front-office issue as firms recognise the impact an effective collateral strategy can have. Bond says: "In Asia Pacific, for example, some of the most sophisticated buy-side institutions, such as the bigger pension funds and insurance companies, are now hiring experienced front-office personnel from the sell-side – they are really driving the activity."

Adapting to new requirements

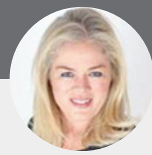
Before firms can begin thinking about collateral optimisation or collateral transformation, however, they must first have the appropriate systems in place. Newport says: "The first and fundamental consideration is how to put in place all of the necessary infrastructure and processes to be able to efficiently manage collateral from an operational perspective in order to meet regulatory compliance. For many firms, it was not necessary to think about this before and now suddenly they need to put in place capabilities to meet quite a high bar of operational sophistication. Even for those buy-side firms which have managed variation margin calls for many years, the requirement to exchange IM adds a new level of complexity. Industry service providers and utilities, such as triparty agents, collateral agents and calculation and reconciliation hubs, help tremendously with this challenge but bring new puzzles of their own - which providers to use, how to manage the data plumbing, what to retain in house, and so on."

Whether or not firms look to build in-house solutions or leverage outsourced services for collateral management and optimisation often depends on their size and the availability of internal resources, as well as considerations around cost, efficiency, and access to the levels of expertise and sophistication of technology that meet the complexity of their needs. Todd Crowther, head of client innovation at financial services technology provider Pirum Systems, says: "With outsourced technology solutions, firms can benefit from technical support, experienced client service teams, and expertise from an established provider who has extensive experience in the margin and collateral management space in terms of implementing a target operating model to achieve standardised processing, automation, workflows, and STP connectivity."

Both buy- and sell-side firms' quest for transparency into where their collateral is and what assets are available for margin has been accompanied by their evolving use of automation for associated processes, such as settlement, says John Straley, chief operating officer at DTCC Euroclear GlobalCollateral Ltd. "Over the next few years, the focus is going to be getting information into firms' systems and into the right hands in a timely manner so that appropriate decisions can be made," he points out.

EquiLend's Oh adds: "The collateral market is growing in complexity. Firms must understand their internal drivers and be able to access, construct, connect and navigate the various routes to market. Simplifying this access has to be the industry's goal." ■

An integrated approach to managing Initial Margin requirements under Uncleared Margin Rules



By **Ed Corral,** global head of collateral strategy, and **Katie Emerson,** EMEA head of securities lending and collateral management - platform sales at J.P. Morgan

In September 2020, the fifth phase for Uncleared Margin Rules (UMR) for Segregated Initial Margin (IM) will come into effect for many of the remaining market participants, where the portfolio aggregate average notional amount (AANA) is at or above 50bn USD equivalent. Phase 6 (September 2021) will capture firms with AANA at or above 8bn USD equivalent. Firms trading uncleared OTC derivatives will need to comply with the mandatory exchange of IM with their respective trade counterparties.

During the three year phase-in of UMR to date, the need to post IM has driven custodian and collateral agents to evolve their business models to meet clients' needs and adapt to new regulations. In the later phases, the need to manage collateral across a variety of activities – securities lending, financing, and cleared and bilateral OTC trading – has become increasingly critical. This has created demand for a more holistic approach to collateral management to efficiently meet their obligations. Given their focus on optimisation and liquidity, buy-side clients are looking to their custodians and third-party securities financing agents for integrated collateral management and transformation solutions.

To support these needs, J.P. Morgan is creating an end-to-end platform which is being designed to help clients cover their financing and segregated initial margin obligations via a flexible securities lending program that operates in concert with collateral agency solutions. The enhanced platform aims to support collateral placements which minimise impact to portfolio management activities and provide uninterrupted asset servicing.

This will allow institutions impacted by UMR, and our other clients, to efficiently optimise the use of their assets – using the most valuable to generate revenue through securities lending while simultaneously fulfilling their collateral obligations. ■

Spotlight on collateral management intensifies for buy-side

Matthew Chessum, investment director, liquidity management at Aberdeen Standard Investments (ASI), discusses some of the key collateral management and securities lending issues on beneficial owners' agendas, including topics such as ESG which continue to gather momentum.

Have you seen an increased focus on collateral optimisation within the beneficial owner community? If so, what do you believe is driving that and how is it shaping attitudes towards securities lending?

Collateral management has grown in importance over the last 18 months in the build up to the implementation of the uncleared margin rules. Beneficial owners are starting to perform more detailed analysis in regards to their ongoing and, more importantly, their future collateral requirements. This analysis focuses mainly on the amount of unencumbered collateral available in a fund, the projected increases/decreases in the amount of required collateral in different market scenarios, the tools available to generate additional collateral if required and, most importantly of all, the most efficient and cost-effective way to manage a fund taking into account any new requirements.

The conversations regarding collateral management have helped to improve the reputation of securities lending within the beneficial owner community. There is an improved understanding regarding the benefits that securities lending can bring to an actively managed portfolio as well as the cost savings that can be generated through actively managing a fund's collateral requirements. These two functions now go hand in hand and are critical in the pursuit of reducing fees and improving performance.

What are the key challenges, or opportunities, facing beneficial owners today?

Both the challenges and opportunities for the buy-side are numerous. Every beneficial owner will have their own priorities but some of the main challenges that I would expect other buy-side firms to be facing include managing and calculating the performance drag produced by using different types of collateral, developing the "collateral toolbox" to include repo and reverse repo and the ability to rehypothecate collateral where permissible, enhancing access to securities lending either directly in the market or through proxies, and the standardisation and development of both internal and external reporting capabilities to clearly indicate unencumbered assets. Producing solutions to these challenges and focusing on collateral management across organisations will give rise to a greater level of integration between securities lending and collateral management processes, improved fund performance due to lower collateral costs (posting the cheapest to deliver, substituting collateral depending upon securities lending opportunities, having the ability to transform a fund's invested assets into permissible collateral), improved flexibility and efficiency when posting and receiving collateral (possibility of hypothecating collateral where possible) and less complex accounting and fund structures acting to reduce both collateral costs and friction.

How has Aberdeen Standard Investments (ASI) looked to optimise its collateral management and securities lending programmes?
ASI has been planning for the upcoming changes to margin rules for some time. ASI is in the fortunate position that following the merger between Aberdeen Asset Management and Standard Life, the combined organisation was able to adopt the best collateral processes from both heritages. This also provided the perfect opportunity to update and improve upon the existing processes across all of our combined mandates. Improvements include providing funds access to securities lending and repo capabilities, the simplification of collateral pool and fund structures and an ability to rehypothecate collateral where permissible.

How do you expect the increasing momentum around ESG to impact collateral management approaches in the industry?
ESG is going to touch everything that we do. The ESG agenda is continually growing in importance and significance. Collateral management and securities lending will not be untouched by this. Going forward I can easily see the introduction of ESG-approved collateral sets, an increase in restricted assets being eligible for collateral purposes and therefore greater complexity, especially in the short and medium term whilst market standards and agreement on specific ESG terms are decided upon. Unfortunately, this may also mean increased costs but as the conversation progresses, market standardisation will help to mitigate these.

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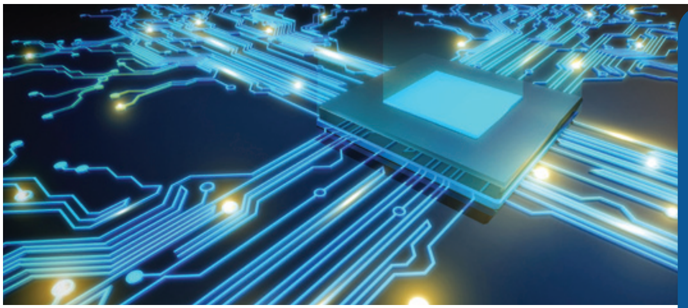
Do you envision the move towards digitalisation and the application of emerging technologies – such as the common domain model, smart contracts, blockchain and tokenisation – delivering benefits to beneficial owners' collateral management and securities lending requirements in the future?
Anything that helps to standardise and improve current processes will add value in the future. The common domain model seems to me to offer the most tangible benefits at this point in time. Being able to access a unique portal holding all of the information necessary to improve and speed up the on-boarding process will be beneficial to all market participants. The ability to improve transparency, align documentation and standardise common work flows will bring greater efficiency to all participants. Blockchain, smart contracts, and tokenisation will all bring benefits and improve liquidity but unfortunately beneficial owners tend to follow and not lead in these types of initiatives.



"ASI IS IN THE FORTUNATE POSITION THAT FOLLOWING THE MERGER BETWEEN ABERDEEN ASSET MANAGEMENT AND STANDARD LIFE, THE COMBINED ORGANISATION WAS ABLE TO ADOPT THE BEST COLLATERAL PROCESSES FROM BOTH HERITAGES. THIS ALSO PROVIDED THE PERFECT OPPORTUNITY TO UPDATE AND IMPROVE UPON THE EXISTING PROCESSES ACROSS ALL OF OUR COMBINED MANDATES."

From a collateral and securities lending market perspective, what do you expect 2020 to bring?
Now that the implementation of margin rules for non-cleared derivatives has been delayed by one year, 2020 will be used to bed down the ongoing process changes that are being implemented to ensure a smooth transition to a more efficient collateral management process. Vendors will no doubt have a busy year as buy-side firms look to add to their competencies in terms of repo, securities lending and arm's length inter fund dealing. In terms of general collateral requirements, I would expect these to increase slightly towards the end of the year as more buy-side firms become more active in their collateral management processes.

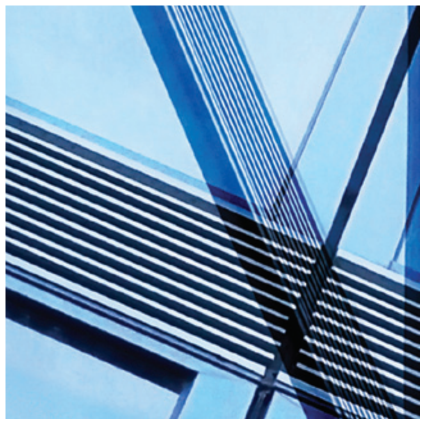
I anticipate that the securities lending markets will remain subdued. Brexit uncertainty, recession fears, flattening interest rate curves (along with the possibility of further cuts), trade wars and ongoing political protests in Hong Kong, to name but a few current issues, do not present a very positive macro-economic picture supportive of increased market activity. As always there will be pockets of demand, these will probably be linked to directional opportunities in either individual stocks or specific sectors but other than this I cannot see any great change to the current levels of demand. The internalisation of securities lending desks will be an interesting one to watch over the next 12 to 18 months in terms of both the impact on distribution and supply. Hopefully 2020 will bring increased volumes and opportunities but at this point I would suggest that the market outlook is looking fairly flat.

"ESG IS GOING TO TOUCH EVERYTHING THAT WE DO. THE ESG AGENDA IS CONTINUALLY GROWING IN IMPORTANCE AND SIGNIFICANCE. COLLATERAL MANAGEMENT AND SECURITIES LENDING WILL NOT BE UNTOUCHED BY THIS."

How would you like to see the collateral landscape evolve over the next 5-10 years, whether that be in terms of regulation, industry collaboration or the collateral management tools/services available to beneficial owners?
There are a few changes that I would like to see over the next few years. The most important would be the easing of regulation for UCITS funds to allow limited forms of rehypothecation of collateral and a clearer understanding regarding the use of pledge collateral structures and therefore CCPs. Rehypothecation of collateral can help to drive efficiencies when a fund is both receiving and posting collateral. It can lead to significant cost reductions, more efficient posting of collateral and a reduction in the performance drag of a fund having to hold eligible collateral assets. Over the medium term, I expect to see a full alignment and integration of the securities lending and collateral management markets. The two are already intertwined but the full integration of agency lending and collateral management services will bring huge benefits to the buy-side. Many agent lenders have started looking into this but there are currently very few complete offerings available. Finally, I would like to see stronger collaboration between beneficial owners. The buy-side in Europe isn't very active in speaking with a collective voice in these markets and it would be beneficial to all to see stronger collaboration and participation going forward. ■

We clear the path

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



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

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Mobilising collateral: What assets are in the mix?

As the range and type of assets being leveraged as collateral continues to evolve, firms are looking to technology to facilitate collateral mobilisation and optimisation.

As we head towards 2020, many in the market continue to anticipate a rise in non-cash collateral use, particularly in the equities space. According to the *11th Securities Lending Market Report,* published by the International Securities Lending Association (ISLA) in September 2019, non-cash collateral reached €1.5 trillion in 1H19, representing 67% of all lending business globally. While the vast majority of this can be attributed to European securities lending activity – the report found that more than 95% of all non-cash collateral was held within Europe's triparty infrastructure – there is continuing momentum behind the push for equities as collateral in the US. Much discussed changes to the SEC customer protection rule 15c3-3 would allow US broker-dealers to pledge equities as collateral when borrowing equities, although this change has yet to come to pass.

"That revision would cause a significant increase in the amount of non-cash transactions and would allow firms to mobilise assets in more illiquid markets," says Matt Wolfe, vice president of strategic planning and development at OCC. "If that were to happen, it is important that the services and technology available are able to handle the greater volume of non-cash collateral and changes that would occur to the equity collateral pool. That includes thinking carefully about the risk management of the loans that are being collateralised by equities and making sure that the proper surveillance and controls are placed around the account, for example, making sure that the collateral being provided is diverse and not highly correlated to the loaned securities."

As the array of assets being posted as collateral evolves, it becomes increasingly important that firms posting collateral have an optimisation process and that collateral receivers have a strong collateral validation framework in place, notes Bimal Kadikar, chief executive officer at Transcend. “Firms posting collateral need to identify the optimal securities that maximise their own capital resources, considering all available asset types from across their enterprise, while eligibly meeting their client obligations. Firms receiving collateral need the ability to ensure that it complies with what they are expecting, especially as the collateral equation changes. A collateral validation framework can highlight if there is an anomaly or an exception to act upon,” he says.

“FIRMS RECEIVING COLLATERAL NEED THE ABILITY TO ENSURE THAT IT COMPLIES WITH WHAT THEY ARE EXPECTING, ESPECIALLY AS THE COLLATERAL EQUATION CHANGES.”

- Bimal Kadikar, chief executive officer at Transcend.

Initial margin obligations prompt rethink

With four of the six phases of the uncleared margin rules (UMR) now implemented, the regulations are also beginning to reshape the type of collateral firms are looking to mobilise. One such example is money market funds, points out Ed Corral, global head of collateral strategy at J.P. Morgan. “Historically, money market funds have not typically been used from a triparty collateral management perspective. We are now seeing their potential among firms pledging margin to meet their segregated initial margin requirements. Interest in the ability to post money market funds is being driven by the buy-side community,” he explains.

There is of course no one-size-fits-all approach when it comes to the way in which firms are navigating the regulations. Some sell-side firms, many of which are now well-versed in UMR compliance after falling into scope of the initial roll-out phases, are starting to explore new opportunities around the type of collateral used for initial margin, points out John Straley, chief operating officer at DTCC Euroclear GlobalCollateral Ltd. “It was first thought that HQLAs (high quality liquid assets) such as treasuries and local European sovereign debt, were going to be the easiest assets to move between sell-side firms and triparty managers,” says Straley. “What we have observed in the last few years, particularly as the initial margin waves came into effect, is a walking down from HQLA as firms consider whether they need to put HQLA into initial margin buckets.”

Meanwhile, in Asia, the uncleared margin rules are a contributory factor behind an uptick in local government bonds being posted as collateral. “Off the back of the regulatory changes, we’re seeing international institutions looking to finance more of the local government bonds - which they are receiving as initial margin from their non-cleared derivatives trades - with local brokers in markets around the region,” says Ed Bond, head of agency securities lending and collateral management, Asia Pacific at J.P. Morgan. “That’s a big shift and it means that our triparty platform must be able to support that demand. The main areas of focus are government bonds in Korea, Singapore, Hong Kong, Japan, and Australia. We have supported those markets for some time, but it’s only really now that we’re seeing demand pick up in Singapore, Hong Kong, and Korea.”

As balance sheets grow, firms are taking increasingly long positions in Asian markets, with a focus on Korean and Taiwanese equities expanding to encompass fixed income and greater exposure to markets such as the Philippines, Thailand, and Indonesia over the last 12-18 months, adds Bond.

It is worth noting that more than a third (37%) of government bonds held as collateral within triparty in the first six months of 2019 were Asian securities, according to ISLA’s latest *Securities Lending Market Report.*

When it comes to untapped potential in Asian markets, China should also not go unmentioned. In May 2018, MSCI commenced the partial inclusion of China A large-cap shares to the MSCI Emerging Markets at a weight of 5%. In February 2019, it went on to announce that the weight of China A large-cap shares in MSCI Indexes would be increased to 20% through a phased approach by November 2019. This follows initiatives to improve access to Chinese financial markets through the development of programmes such as Stock Connect. “There are still a lot of steps for the market to go through but the demand is there and the size of the financing requirements is increasing,” states Bond.

Using tech to take in the bigger picture

The move towards non-cash collateral and the broader range of asset classes is being leveraged by firms to more efficiently meet margin requirements,

> "THERE ARE A NUMBER OF WAYS FIRMS CAN BETTER MOBILISE ASSETS...NEVERTHELESS, THE KEY TO THIS IS A FIRM'S ABILITY TO HAVE THE VISIBILITY AND CONNECTIVITY NEEDED TO VIEW AND ACTION COVERAGE, AGREE OR DISPUTE EXPOSURES AND EFFECT COLLATERAL MOBILISATION TO COVER MARGIN CALLS."
>
> **- Todd Crowther,** head of client innovation at Pirum Systems.

however, this can add another layer of collateral complexity, says Todd Crowther, head of innovation at Pirum Systems.

"There are a number of ways firms can better mobilise assets, whether that be turning to (triparty) agents to manage collateral on their behalf or utilising different market technologies which are enabling more streamlined instruction and delivery of collateral, such as the [upcoming] HQLA^{X} platform or [GlobalCollateral's] Collateral Management Utility," he adds. "Nevertheless, the key to this is a firm's ability to have the visibility and connectivity needed to view and action coverage, agree or dispute exposures and effect collateral mobilisation to cover margin calls and this relies on the ability to collaborate not only with a firm's counterparts but also its different infrastructure providers across different technologies."

This has given rise to the deployment of automation tools and online platforms that can adapt to firms' changing collateral requirements and support efficiency, speed, and compliance in the face of the various headwinds reshaping the collateral landscape. Martin Seagroatt, marketing director for securities finance and collateral management at Broadridge, says: "Firms continue to invest in systems that can rapidly identify, allocate and mobilise idle collateral in an automated way."

Such systems can also reduce the costs incurred by moving collateral, for example, on a cross-border, inter-company basis. J.P. Morgan's Corral says: "If the collateral starts in entity A, say in Asia, and the firm wants to move it to entity B, in Europe for example, then they can make that move on our platform as a book transfer entry seamlessly and instantaneously without market cost. Our platform can also help dealers consolidate their activity in one place, providing a holistic and global view of their collateral obligations."

A comprehensive outlook is becoming increasingly important to firms as they seek to take a more active role in collateral management. While collateral optimisation has traditionally been seen as selecting the most economically-efficient asset eligible for a particular trade, the influx of regulatory standards such as the Liquidity Coverage Ratio and the Net Stable Funding Ratio (NSFR) has had a growing impact on firms' priorities when it comes to collateral selection.

"Over the last couple of years, dealers are realising that they are the ones who best know what is important to them on a day-to-day basis. While the responsibilities of triparty agents remain the same in terms of collateral eligibility, sufficiency, pricing, and haircuts, etc., there has been a trend towards self-directed allocations," Corral explains. "Firms will have triparty balances with us or with other triparty providers, they will be doing bilateral trades, and/or they will have collateral obligations on exchange at the different CCPs (central counterparties). From the triparty agent's perspective, what the dealer is telling them to do may not always appear to be the most optimal course of action but the dealer is the only one who sees that entire picture and knows their entire collateral pool. Providing the right tools to dealers to support that flexibility is critical." ■

OPTIMISATION

Modelling scenarios to reduce risk and optimise collateral in securities lending

In conversation with **Matt Wolfe,**
vice president of strategic planning and development at OCC

OCC, which is the world's largest equity derivatives clearing organisation and operates two stock loan programmes, has made additional tools available to help firms determine the most effective ways in which to optimise their collateral and manage risk.

"We take equities as margin deposits, so we look at the effect of those equities upon the other derivatives, futures, securities and stock loan positions that clearing member firms may have and look at ways that the equity collateral is increasing or reducing risk in a portfolio," explains Matt Wolfe, OCC's vice president of strategic planning and development. "We are introducing a number of innovations around portfolio stress testing to look at possible price, volatility, and correlation changes and resulting effects upon clearing members' accounts."

This includes risk methodologies for specific scenarios, such as the impact of closely correlated collateral, and could be a model for more effective risk management of non-cleared loans. "If the assets provided as collateral are all highly correlated and there is suddenly a downturn then every piece of collateral that the lender is holding would drop in value, so it is important for lenders to consider that and incorporate it into their valuation," says Wolfe. "Ideally, lenders would have a balanced, diversified portfolio of collateral. If that's not feasible, they should make sure they are asking for a sufficient amount of those correlated assets."

Another key element for lenders to consider is volatility. "Traditionally, collateral is valued using a standardised haircut, but not all securities are alike," points out Wolfe. "Thinking about the volatility of each security is an important component of the valuation so that a lender can be confident that over the two to three days that it might take to liquidate a position if needed, it has the right level of collateral there. Using a static haircut means that a lender is either requiring too much collateral because it's taking too conservative of an approach, or they're under-collateralised because the valuation parameter is too low and the securities are more volatile than it has asked for."

By investing in the development of risk management tools such as portfolio valuation methodologies, OCC is not only looking to assist its members but also to support its mission of ensuring sound financial markets. "We welcome the opportunity to share our thoughts on effective risk management practices and how to incorporate factors like volatility and correlation into the broader ecosystem outside of OCC," says Wolfe. ■

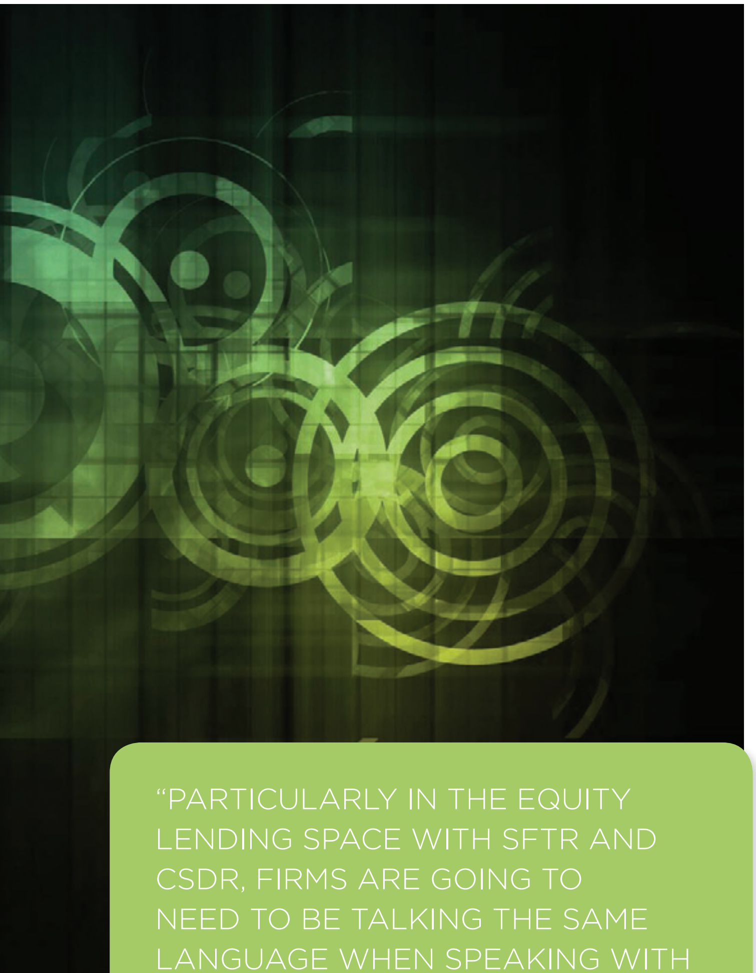
The case for harmonisation, standardisation, and interoperability

Onerous reporting requirements through to the availability of new technologies and open-access frameworks are among the developments galvanising the debate around industry standards.

The concept of strengthening market efficiencies by establishing industry standards that facilitate greater harmonisation and interoperability is by no means a new one. However, resource-intensive regulations such as the EU's Securities Financing Transactions Regulation (SFTR) and the Central Securities Depositories Regulation (CSDR) are placing renewed impetus on the need for greater acceleration of these efforts.

SFTR, for example, will require counterparties to securities financing transactions (SFTs) to report details of the SFT to an approved trade repository, generally on a T+1 basis. The two-sided reporting obligation, which will be phased in from April 2020, requires 153 data fields to be populated. "That requirement is driving firms to consider how best to get standardised data into the report, which highlights the fact that there are gaps in data required to report," notes Todd Crowther, head of client innovation at Pirum Systems. "Additionally, there are a number of other data points that the industry is looking to standardise but that have not been fully realised yet, such as standard settlement instructions, collateral schedules, and data for know-your-client (KYC) requirements. So SFTR will help drive standardisation in some areas but not across other areas, which presents challenges to on-boarding, trade capture and processing, settlement and lifecycle management."

While data standardisation could help ease the burden on individual firms grappling with upcoming regulation, a more homogenous cross-industry



"PARTICULARLY IN THE EQUITY LENDING SPACE WITH SFTR AND CSDR, FIRMS ARE GOING TO NEED TO BE TALKING THE SAME LANGUAGE WHEN SPEAKING WITH ONE ANOTHER"

- Tim Meredith, executive director, platform sales at J.P. Morgan.

approach to datasets is also key. "Particularly in the equity lending space with SFTR and CSDR, firms are going to need to be talking the same language when speaking with one another," says Tim Meredith, executive director, platform sales at J.P. Morgan. "In that sense, regulation is an enabler in terms of bringing the market together to force the issue of standardisation. It is then down to the market to agree that a collective investment is a beneficial long-term strategy, and regulation may also be the catalyst for that."

Graham Gooden, EMEA head of agency collateral management at J.P. Morgan, points to the uncleared margin rules (UMR) as an example of regulations acting as a lever for the market to collectively innovate and develop industry standards in the derivatives space. He says: "For phases one to four of UMR, triparty has been the solution of choice but phase five brings in the buy-side, many of whom will use a custodian under a third-party model. Historically, the way many control accounts have been managed by a custodian has been through fax; however, with phase five drawing closer, the industry has come together around SWIFT standards for instructions that custodians are buying into and that let dealers instruct in an automated fashion. Regulation may have driven that at the start, but the industry has subsequently innovated to meet that need."

Developing a common blueprint

The derivatives market also provides frameworks which could be leveraged to address the pressures facing the securities lending industry, namely the common domain model (CDM). In March 2019, the International Swaps and Derivatives Association (ISDA) published the ISDA CDM 2.0, which provides a standard representation of more than 20 lifecycle events for interest rate and credit derivatives products, as well as an initial representation for equity swap products. It is essentially a common blueprint that enables all market participants to deploy a machine-executable data model into their own systems and products.

"The ISDA CDM is the first industry solution across the financial services sector to tackle the lack of a standard convention in how trade events and processes are represented," says Kelly Mathieson, head of enterprise solutions at Digital Asset, a provider of distributed ledger technology. "Having a single, common representation of derivatives and their trade events will enhance consistency, facilitate interoperability across firms and their platforms, support transactions, and provide a foundation on which new technologies can be applied."

In April 2019, ISDA and Digital Asset announced the availability of an open-source reference code library that will allow developers to more easily implement the ISDA CDM and construct lifecycle events with machine-executable code using Digital Asset's smart contract language – DAML.

There is potential for the CDM to expand the scope of products it covers, for example, securities for collateral exchange and financing transactions. The International Securities Lending Association (ISLA) has also noted that it is exploring how technologies and frameworks such as CDM and digital contracts might be developed for the benefit of the securities lending community.

> "IT IS AN ADDITIVE SCENARIO WHEREBY IT LAYS THE FOUNDATION FOR EMERGING TECHNOLOGIES BECAUSE IF YOU HAVE A STANDARDISED PROCESS THEN YOU CAN EXPRESS THAT PROCESS IN MACHINE-EXECUTABLE CODE FORMAT."
>
> **- Kelly Mathieson,** head of enterprise solutions at Digital Asset.

Mathieson sees further opportunities for CDM frameworks and DAML within SFTs and collateral management, from providing a real-time record and immutable timestamp of what collateral allocation decisions have been made by whom and when, and making that information available to the appropriate market participants throughout the lifecycle of a transaction, through to streamlining compliance with regulatory requirements by enabling permissioned authorities to observe relevant aspects of a transaction in real time. "Some of these opportunities have measurable business cases underneath them around operating risk, compliance, and the ability to reduce the unnecessary liquidity that is currently injected just to handle the sequential flow of transactions," she adds.

Standardisation and innovation: an uneasy alliance?

One issue that is frequently raised when the push for standardisation and harmonisation comes to the fore, however, is its compatibility with market innovation and competition. Yet rather than stifling innovation, standardisation of core processes could in fact free up firms' time and resources for the development of new products, services, and other aspects of their business that can offer a competitive edge. "Standardisation of the plain vanilla parts of the value chain or nuts-and-bolts process can still allow room for innovation as a business differentiator," points out Meredith.

As Mathieson notes: "The ISDA CDM is focused on non-differentiating operating flows. It is an additive scenario whereby it lays the foundation for emerging technologies because if you have a standardised process then you can express that process in machine-executable code format. We don't even know yet what the limits of that innovation could be."

Standardised processes could also lead to more rapid development and adoption of new systems and services, states Matt Wolfe, vice president of strategic planning and development at OCC. "If you have to adapt to a number of individual processes then it becomes much more difficult to launch new services than if you could just launch that service on one standardised process."

He continues: "Harmonisation and standardisation breed innovation – you can see that not just within the industry but much more broadly, for example the creation of standards such as HTTP (HyperText Transfer Protocol), which was the foundation of the internet, and all of the subsequent innovation that has resulted from that."

When there is a level playing field, market participants, institutions and solution providers alike will be highly encouraged to seek out ways to build upon their competitive advantages, points out Alvin Oh, global trading product owner at EquiLend. "There are certainly cutting-edge technologies out there - for example, blockchain and distributed ledger technology (DLT), machine learning and artificial intelligence - that can play a part in how collateral is being managed. Much like the advent of trading algorithms, firms willing to invest in these technologies can benefit from the efficiency, transparency and risk mitigation that technology brings about."

Breaking down silos

At an enterprise-wide level, harmonisation between business functions with a bearing on collateral can offer benefits such as cost efficiencies and open up revenue-generating opportunities.

"If each business silo has its own approach to managing and optimising collateral, then as a firm you are not making the most of that collateral's full potential," says Bimal Kadikar, chief executive officer at Transcend.

Some firms have already begun to take steps to address this, yet they are not only taking different paths to break down internal silos, but are also on varying stages along those paths. Roy Zimmerhansl, practice lead at Pierpoint Financial Consulting, says: "Sell-side firms have been on a collateral journey for the past decade. I find it interesting that there has yet to be a clear structure that has emerged for the sell-side. At the beginning of the decade, there was much talk about the creation of a senior level "Collateral Czar" at each firm who would be charged with optimising the firm's collateral horizontally across all businesses. While this has been a model for some firms, giving them a cost advantage, often collateral remains vertically aligned to businesses."

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Establishing a central collateral management agency is critical in breaking down silos, stresses EquiLend's Oh: "With this business group focused entirely on collateral, it can best optimise usage firm wide. Another benefit of creating a centralised hub for collateral information is that it will also allow the various business lines to have the best data points in their day-to-day business operations involving collateral. This is one of the reasons why we have built EquiLend Spire, because we recognise the challenge these businesses face to centralise their view, control and optimisation of assets."

Just as regulatory change can serve as a trigger for new approaches at an industry-wide level, they can also drive change within enterprises.

Zimmerhansl says: "Typically, when a new regulation is forced on the industry, firms respond with an implementation plan that will satisfy the

A connected collateral ecosystem

In conversation with **Bimal Kadikar,** chief executive officer at Transcend

Recent advances in collateral management technology – from algorithms to advanced analytics – are revolutionising the opportunities available to firms seeking optimisation at an enterprise-wide level.

Firms are increasingly realising the advantages of adopting a more centralised and harmonised approach to managing collateral, and utilising the latest software solutions to inform decision-making. Bimal Kadikar, CEO at Transcend, says: "Forward-looking firms have recognised that optimising collateral and liquidity across an enterprise, as well as within business areas, can drive efficiencies and deliver wider strategic benefits."

According to Kadikar, there are some vital steps firms should take to ensure they are leveraging collateral as effectively as possible. The foundational step is real-time visibility into their collateral inventory across business lines and locations. Once firms have a comprehensive view of their collateral obligations, positions, and agreements, they will find themselves in a stronger position for determining how best to optimise their collateral ecosystem and, importantly, for putting that plan into practice. This should be accompanied by a mechanism to monitor the impact of these changes, including performance metrics and data analytics that allow for continued optimisation.

For firms that have legacy systems, replacing or re-engineering these in order to achieve an optimal approach may appear a tall and costly order. However, modular technology solutions, such as those developed by Transcend, connect and link disparate datasets, enabling firms to achieve visibility across these systems. This promotes greater collaboration from the front-to-back office and between desks, driving better business results for the enterprise.

"Having a connected ecosystem also helps firms meet a variety of regulatory obligations throughout the business," points out Kadikar. This includes compliance with US Qualified Financial Contract (QFC) Recordkeeping regulations, which require firms to keep track of QFCs, corresponding agreements, the collateral positions or collateral posted/received associated with these, as well as the netting agreements that are in place for counterparties. When requested by regulators, reporting of the required information must be completed by 7am EST the following day.

"Even for the largest firms this is a formidable challenge," says Kadikar. "We have been working with a number of US firms to implement our software to provide a common, integrated view across business areas.

"Although this is being driven by the regulations, there are numerous advantages to creating a connected ecosystem. We also often see other stakeholders emerge who would significantly benefit from it, for example, enterprise credit." ■

new requirements. Forward-thinking firms can use regulations as a springboard to rethink and re-evaluate their approach and make changes that optimise their approach, and I think that UMR has provided that opportunity."

However, firms' capacity to rethink and enhance their collateral strategies is often constrained by competing business priorities. "The demand to innovate can push boundaries, but we need to collectively watch the balance between bespoke solutions and harmonising to solve a common issue and achieve a common goal. Despite the fact that harmonisation can cost in the short term, it can not only save money in the long term but also create value in terms of new opportunities. So, when you consider the bigger picture, it makes sense for firms to invest in this if they have the capacity to do so," says Gooden.

Meredith adds: "A lot of capacity is being taken up with SFTR and CSDR, but given market activity levels are relatively low this year and organisations are coming under increasing pressure to prove they are doing something about potential efficiency gains, the time is now to pause, take stock, and leverage harmonisation."

Digitising data

Many industry participants will likely be utilising different heritage systems to manage collateral across their equities, fixed income, and derivatives desks, for example. "All of these have a collateral need to speak to one another, so as a first step, firms need clean data to be able to see all of their positions and know how best to mobilise collateral and bring down those silos," says Meredith. "It is more difficult to connect with others if you are not as joined up as you could be internally."

Technology and software providers have developed various solutions to help bridge these systems. For example, Transcend's Kadikar says: "Our goal is to provide an overlay that allows firms to plug the gaps they have within their existing collateral ecosystem, enabling firms to have comprehensive visibility into internal and external systems at an enterprise level."

Advances in automation solutions have also been harnessed by the industry to bring together diverging data inputs to deliver standardised data outputs via standardised processes. Robert Frost, head of product development at Pirum Systems, offers the following example: "As a well-established automation and connectivity processing hub, we have standardised the process of clients connecting to all four major triparty agents and the submission of required values (RQVs) for both initial margin and securities lending, knowing that all of the firms connected to our platform will not have the same systems or data models."

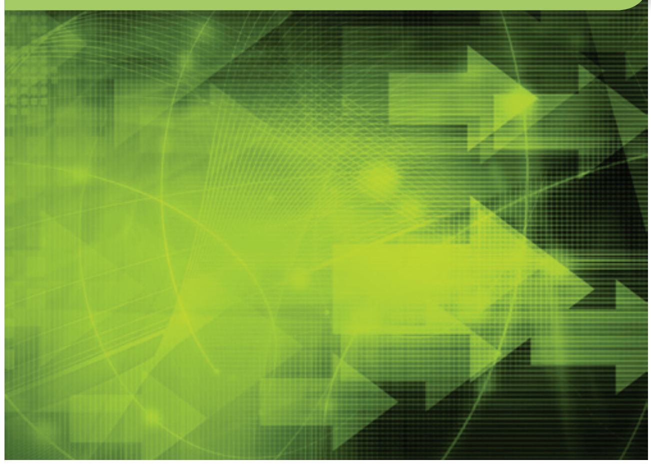
As Pirum's Crowther notes: "Digitising data and making that data available to use are the foundation to achieve harmonisation and standardisation which could enable better automation and interoperability across the industry and thus reduce cost and increase efficiencies."

The digitisation of data sets has gone some way to alleviating historical pain points, such as determining collateral eligibility. "We have digitised our collateral schedules, and made them available in machine readable formats," says J.P. Morgan's Gooden. "The next phase is making schedules available for clients to make changes electronically. If you look further down the track, eligibility could be transmitted through an application programming interface (API), and then other providers could take those APIs and create other services."

Gooden suggests that this digitised model could allow for new innovative and interlinked solutions,

"FORWARD-THINKING FIRMS CAN USE REGULATIONS AS A SPRINGBOARD TO RETHINK AND RE-EVALUATE THEIR APPROACH AND MAKE CHANGES THAT OPTIMISE THEIR APPROACH, AND I THINK THAT UMR HAS PROVIDED THAT OPPORTUNITY."

- Roy Zimmerhansl, practice lead at Pierpoint Financial Consulting.



in a similar manner to the way GPS apps, activity-tracking apps, and smart wristbands feed into each other to provide consumers with information about the route and distance they have run and their heart rate when doing so. "Our industry isn't quite there yet, but by having data in a digital format, other services can be built on top of it and be fed back into our own services."

Harmonisation is not easy, remarks Oh, but it is crucial to simplify access for new entrants to join and add new liquidity pools to the market.

He says: "This cannot be achieved without streamlined and centralised technology, from trading to messaging to settlement. Understanding pre- and post-trade are key to making a trading decision even before a transaction is done." ■

Optimising the cost of a collateral trade

By **Alvin Oh,** global trading product owner,
and **Iain Mackay,** global post-trade product owner at EquiLend

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

At a time when the securities finance industry is driving for technology solutions to manage the new paradigm of increased regulatory oversight, the perception that a collateral trader can view their obligations on an intraday basis across business silos (yes, they still exist) and utilise available inventory is misunderstood.

A proliferation of internal and external systems have evolved over time for differing needs to manage what has become an increasingly complex business. With most other areas of trading and post-trade within the securities finance industry now optimised and, in many cases, automated with full transparency with systems like EquiLend, one of the final functions within the industry to become truly optimised is collateral.

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

1. Understand their long or short box and identify the costs of using that inventory (Inventory Management)
2. Be aware of who the appropriate counterparts are and be able to execute these trades in an automated way (Trade Execution)
3. Maintain a frictionless trade by leveraging straight-through processing (STP) for settlement and achieve a real-time view of exposure positions (Lifecycle Management)

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

Inventory management: EquiLend Spire, a technology hub for securities finance firms of all types

Trade execution: EquiLend's Collateral Trading platform, due in Q1 2020

Lifecycle management: EquiLend Exposure, which provides a real-time overview of portfolio management

EquiLend Spire, EquiLend Collateral Trading and EquiLend Exposure offer seamless interaction and connectivity for firms looking to optimise their collateral trading. Each may be used in isolation to complement a firm's activities in this space; together, they offer businesses complete insight and control in this once-opaque market. ■

Taking the long view: Harnessing change to improve industry standards


Andrew Dyson, chief executive officer, and **Adrian Dale,** director, regulation and market practice at the International Securities Lending Association (ISLA), explain how greater industry-wide standardisation can enable creativity to flourish and touch on the association's role in developing these standards.

How is regulation driving the need for standardisation between entities in the market, as well as between desks and departments within enterprises?
Two particular pieces of legislation are forcing the market to rethink many of its existing practices and procedures. The Securities Financing Transactions Regulation (SFTR) has for the first time given our markets a taxonomy that has never existed before. We at ISLA have argued for some time that it is important for market participants to look past the initial technical burden that surrounds the implementation of SFTR, and think about the longer-term benefits that a standardised data set together with a consistent language for describing life-cycle events could bring. Whilst SFTR is a simple reporting regime, the Central Securities Depositories Regulation (CSDR) also arrives in 2020 and brings with it real and often harsh penalties for failing trades, together with a mandatory buy-in regime. We have raised concerns around elements of the mandatory buy-in process, which in our view, could have a detrimental effect on market liquidity. We do however, recognise and generally support the rigour behind fines for failing trades. To minimise the potential impacts of CSDR, the market needs to look at the cause and effect of failing trades together with clear and market-wide remedies. This will demand greater standardisation and consistency amongst our business community and beyond.

How can firms break down silos and optimise collateral management on an enterprise-wide basis?
Legacy business and operational silos will reflect both pre-consolidated legal entities and legacy technology platforms. Data standardisation and adoption of common data standards will facilitate enterprise-wide solutions for the future. In the short term, it is unrealistic to expect firms to replace key parts of their infrastructure, but adoption of common standards and procedures will deliver efficiencies in the interim.

> "INTEROPERABILITY CAN ONLY BE ACHIEVED AGAINST A BACKDROP OF INDUSTRY-WIDE STANDARDISATION. ISLA IS ALREADY WORKING ON AN 'AGENDA FOR CHANGE' THAT WILL DRIVE THE DEVELOPMENT OF THESE STANDARDS ACROSS THE INDUSTRY."

What are the benefits of harmonisation and standardisation at an industry-wide level? What progress has the industry made in this area to date?
Adoption of common standards and harmonisation of communication frameworks and protocols will lead to higher settlement rates. Higher settlement rates will reduce the need for expensive trade support teams as well as limit the impact of CSDR fine regimes. When looking at the cost of these potential enhancements, they should not be judged as a simple cost but should be viewed in the context of reduced infrastructure and regulatory costs that will accrue from these changes.

Ongoing regulatory imperatives, notably SFTR, are forcing the pace of change. So, we are moving in the right direction but perhaps the industry as a whole hasn't recognised that this should be looked at more holistically.

To what extent could industry-level standardisation and interoperability be achieved? Would regulation or a common standard be required to bring change about? Or could industry-led cooperation be the answer?
Interoperability can only be achieved against a back-drop of industry-wide standardisation. ISLA is already working on an 'Agenda for Change' that will drive the development of these standards across the industry. We have already published best practice guidelines around our post-trade world, and we will be releasing further work in this area, notably around CSDR. Subsequent to that, we will also be publishing our initial thoughts around the digitalisation of our markets.

How can the industry allow for effective standardisation and interoperability while still providing space for innovation and competition?
It is important here not to confuse standardisation with restriction. By creating a common understanding around data points and life-cycle events, as well as the digitalisation of master agreements and collateral schedules, we can create a business environment that will allow creativity to flourish. By creating standards, we are not restricting what people can do within the framework but simply ensuring that people adopt a common development language or a series of protocols as they develop their systems and solutions. By doing this, the market will increasingly deliver interoperability, higher levels of straight through processing and avoid the need for costly reconciliation systems or services.

"BY CREATING STANDARDS, WE ARE NOT RESTRICTING WHAT PEOPLE CAN DO WITHIN THE FRAMEWORK BUT SIMPLY ENSURING THAT PEOPLE ADOPT A COMMON DEVELOPMENT LANGUAGE OR A SERIES OF PROTOCOLS AS THEY DEVELOP THEIR SYSTEMS AND SOLUTIONS. BY DOING THIS, THE MARKET WILL INCREASINGLY DELIVER INTEROPERABILITY, HIGHER LEVELS OF STRAIGHT THROUGH PROCESSING AND AVOID THE NEED FOR COSTLY RECONCILIATION SYSTEMS OR SERVICES."

To what extent could digitisation be viewed as an enabler for change in this area?
We are all living in a progressively digital world and our markets are not immune to these changes. Whilst it is easy to simply say that this should be an enabler for change, I think we need to think about what that means. To move to a digital world that delivers real and tangible benefits, there has to be recognition that this can only be done on the back of industry-wide standardisation. SFTR has forced our markets down a road where much of the work needed to create that standardised world is already being done. What we as an industry have to do, is to think where this technology and broader common domain models can take us. So digitalisation is perhaps the carrier rather than the enabler of the digitalised world for our markets. ■

"ADOPTION OF COMMON STANDARDS AND HARMONISATION OF COMMUNICATION FRAMEWORKS AND PROTOCOLS WILL LEAD TO HIGHER SETTLEMENT RATES. HIGHER SETTLEMENT RATES WILL REDUCE THE NEED FOR EXPENSIVE TRADE SUPPORT TEAMS AS WELL AS LIMIT THE IMPACT OF CSDR FINE REGIMES."

Emerging technologies: Turning possibilities into practice

Real-world applications of distributed ledger technology (DLT) and tokenisation have begun to pick up pace but some barriers to widespread adoption remain.

It may have seemed as though the potential of emerging technologies in the industry had been overly touted to the extent that 'blockchain' and 'tokenisation' had been at risk of becoming buzzwords, their real-life applications seen as being so far off that they verged on the unattainable. However, a number of developments over 2018 and 2019 have now put their application more firmly within reach.

This year, for example, has seen the launch of the first exchange dedicated to institutional borrowing and lending of digital assets, such as Bitcoin and Ethereum, after Lendingblock's crypto lending platform went live in September. Loans on the platform are collateralised in cryptocurrency.

There have also been a number of advances and proof-of-concept tests around the use of digital tokens and distributed ledger technology to eliminate the need for the physical movement of securities and to exchange collateral more efficiently. In March 2019, Commerzbank and Deutsche Boerse executed a legally binding settlement of a repo transaction based on delivery versus payment, in which digital cash and securities tokens were simultaneously swapped using DLT.

Pioneering financial technology firm HQLA^X has been preparing to go live with its blockchain-based solution for collateral swaps in the securities lending market later this year. The solution involves the transfer of digital records of ownership of baskets of securities while the underlying securities remain static, and off the blockchain, in the custody location of the collateral giver, replacing the movement of securities between securities depositories. Guido Stroemer, co-founder and chief executive officer at HQLA^X, says: "We have been connecting the HQLA^X digital collateral registry with two Deutsche Boerse entities, the Eurex Repo F7 trading system which serves as our front-end trading venue, and the Trusted Third Party entity which provides a critical interface between our digital registry and existing securities registries at incumbent custodians and triparty agents."

Over the last 12 months, the firm has been busy onboarding clients for the platform's launch. Stroemer adds: "Our initial minimal viable product (MVP) offering will be limited to delivery versus delivery (DvD) ownership transfers of baskets of securities held for safe-keeping at leading custodians/triparty agents in Europe, but we also have medium-term aspirations to expand our product and jurisdictional footprint through collaboration with other technology platforms and service providers."

Elsewhere, Spanish market infrastructure provider Bolsas y Mercados Españoles (BME) conducted a proof-of-concept test in March 2019 in which blockchain technology was used to process collateral pledged by Renta 4 Banco. The test digitised the certification process, employing DLT to process and release collateral pledged by the investment bank to cover its positions at BME Clearing. According to BME, the proof of concept demonstrated that end-to-end processing times could be reduced by more than 80%.

"The key learning [from the proof of concept] is that distributed ledger technologies are indeed feasible for these kinds of collateral processes and for any other financial process in which there are multiple participants, data exchange and transactions with high requirements of trust and security," says Berta Ares, managing director at BME Inntech.

BME's DLT-Lab plans to launch its blockchain-based collateral pledge solution by the end of 2019. It is also looking at the potential extension of the service to other beneficiaries and collateral products. "We are also working on some more innovative and disruptive projects, analysing new ideas like an asset tokenisation platform, to legally represent the exchange of any type of asset, or a market place for digital assets, focused on a new form of financing for start-ups," adds Ares. "We are in permanent contact with the industry and open to work on any idea that may improve or contribute value to the current system."

"IMPLEMENTING INNOVATIVE EMERGING TECHNOLOGY SOLUTIONS IS HARD WORK, AND IT REQUIRES STRONG COLLABORATION AND BROAD CONSENSUS BUILDING, NOT ONLY WITH DIRECT PARTNERS AND SUPPORTERS, BUT ALSO AMONGST PERCEIVED COMPETITORS."

- Guido Stroemer, co-founder and chief executive officer at HQLA^X.

Equity derivatives clearing organisation OCC has been actively exploring the role of smart contracts and DLT to support its securities lending programmes. Matt Wolfe, OCC's vice president of strategic planning and development, says: "In a recent survey conducted by OCC, respondents highlighted post-trade and reconciliation among their biggest pain points - escalating costs, errors, and manual processing to resolve those errors. Having a set of shared processes using smart contracts would ensure that when new loans are booked they are booked with the correct details, and when contracts are re-priced there are not discrepancies around the valuation."

Collaboration and connectivity

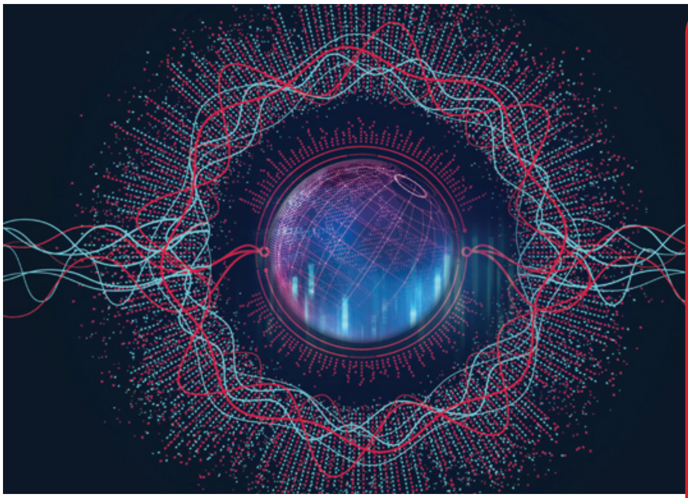
The DLT and smart contract use cases currently being tested in the industry aim to increase efficiency and transparency, reduce risk, speed up processing times, allow for real-time access to information, and support market liquidity. Yet barriers to widespread adoption remain.

Wolfe says: "The languages that are used to develop smart contracts are still developing and the tools to do code reviews and security scanning on those languages are not as widely available as they are for more established development languages."

By nature of being a shared ledger, blockchain-based solutions necessitate buy in from multiple parties which could hinder the speed at which they are embraced by the market. Bimal Kadikar, chief executive officer at Transcend, says: "DLT has some way to go before becoming mainstream in the industry purely because it requires a lot of people to act together for it to be really meaningful."

Kadikar expects intelligent decision-making to have a more significant impact than DLT in the nearer term as fewer stakeholders are involved in its implementation. "Individual firms can control how far and how deep they go with artificial intelligence (AI) tools and intelligent decision-making," he notes. "However, the key component is getting the data right. Often firms ask 'should I focus on AI or machine learning or blockchain?' They don't always realise that unless they first have reliable, connected data then those technologies are not going to be of help."

Adoption of some emerging technologies, particularly those based on collaboration, may require a change in mind-set. Carrie Osman, founder and chief executive officer at strategic consultancy Cruxy & Company, which has conducted an in-depth study on this space, says: "There are a lot of changes needed to facilitate the widespread uptake



"WHEN APPLYING ANY NEW TECHNOLOGY, IT IS TEMPTING TO TRY AND REPLACE ALL EXISTING INFRASTRUCTURES AND START FROM SCRATCH TO DESIGN A BRAND NEW SYSTEM. BUT THIS IS NOT REALISTIC AND ONE OF THE MAIN CHALLENGES IS INTERACTION WITH CURRENT INFRASTRUCTURES, WHEN NECESSARY."

- Berta Ares, managing director at BME Inntech.

of DLT, from processes, to interaction, to regulation. Most importantly, it requires a mentality shift. There are some participants in the market who are more forward thinking than others and therefore trying to facilitate different types of collaboration and partnership in order to enable the market to move towards its vision for the future. However, instead of working harmoniously, many in the market are still developing their strategy in silos."

As Stroemer notes: "Implementing innovative emerging technology solutions is hard work, and it requires strong collaboration and broad consensus building, not only with direct partners and supporters, but also amongst perceived competitors."

Regardless of whether new or existing technologies are being employed, firms cannot be insular if they are to thrive in the increasingly complex collateral ecosystem, says Robert Frost, head of product development at Pirum Systems. "The key point is connectivity – whether that be connecting with counterparties, infrastructure providers or utilities, firms should make sure they connect into that network to efficiently mobilise assets and agree collateral. No firm can do that by themselves, they need to be outward looking," he adds.

Going step by step towards the end goal

A recent shift in mind-set of another kind may now be going some way to laying the groundwork for greater adoption in the industry. Scott Lucas, head of firmwide intraday liquidity at J.P. Morgan, says: "In the last 18 months, we have begun to see how blockchain can be applied to the very real problems that we are looking to solve. Some of those solutions are around driving efficiencies in settlement, matching, and operational processes post trade, and some are surfacing around increased transparency into pre-trade market activity and the availability of pricing different kinds of products."

Graham Gooden, EMEA head of agency collateral management at J.P. Morgan, adds: "In the past people have focused on the end goal. However, as the end of the rainbow keeps moving, it becomes more difficult to achieve that vision or develop viable products. Now we are concentrating on practical applications while still keeping the bigger picture in mind."

A gradual, targeted approach to specific problems can also help to more clearly demonstrate how emerging technologies can add value. Todd Crowther, head of client innovation at Pirum Systems, says: "There has to be a solid business case. You have to think about what you are trying to achieve. You should use these technologies when you can effectively leverage them and when they are going to add value, you should not use emerging technologies just because they are there."

Seeing new technologies as a way of augmenting or complementing existing systems rather than replacing them, could make their adoption a less daunting task, reducing the cost and operational burden that would accompany the need to overhaul entire systems.

BME Inntech's Ares says: "When applying any new technology, it is tempting to try and replace all existing infrastructures and start from scratch to design a brand new system. But this is not realistic and one of the main challenges is interaction with current infrastructures, when necessary. We should not underestimate the efficiency and reliability of current legacy systems and legal frameworks, which are the result of decades of evolution."

Rather than immediate wholesale change, utilising emerging technologies within familiar frameworks or to improve recognisable processes could serve as a first step.

"You aren't going to get the entire securities network to change overnight, if at all, so in order to move forward you may need some kind of translational layer – for example, to manage, value and store collateral – which could then be represented on a blockchain," says Gooden.

Appropriate legal frameworks and regulatory oversight are also required to ensure market participants are comfortable conducting transactions and post-trade processes from a risk management perspective. "There are questions to address still but these issues are all solvable," says Lucas. "We are seeing real progress and as long as these conversations remain active, open, and ongoing then I think that the industry will accelerate into a strong position over the next 12-18 months." ■

A cloud with a silver lining

By **Todd Crowther,** head of client innovation at Pirum Systems

New technologies are increasingly being leveraged as an effective way to meet the evolving regulatory pressures and cost constraints facing the financial services industry. Software as a service solutions (SaaS) built on public or private clouds offer firms a turnkey, lower cost and often more effective and adaptable alternative to legacy infrastructure.

In the collateral management space, the degree of change has accelerated as regulations including Dodd Frank, EMIR and FINRA have mandated ever more rigorous margining of transactions for both initial and variation margin on cleared as well as un-cleared derivatives. This has led to processes becoming far more complex through material increases to number of products affected, number of participants involved, amount of margin agreements performed, timeliness of required margin exchange(s) and the frequency of reporting involved. Consequently, meeting these changing requirements has not only become a compliance imperative but also a challenge from a business, operational and technology perspective.

To meet these challenges, firms can benefit from using cloud-based solutions through:

- **Connectivity:** Cloud solutions establish better connectivity for firms across the collateral ecosystem and more easily enable networking between market participants, triparty and third-party custodians, CCPs, outsource collateral agents, trade repositories, etc.
- **Control:** Inbuilt connectivity can be leveraged to provide a consolidated view of margin requirements, where real-time data from the network is exchanged and utilised to monitor and process the coverage of exposures in an accurate and timely manner.
- **Interoperability:** Opportunities for collaboration provided through the network facilitates the streamlining and automation of the full margin life-cycle by turning complex, manually intensive tasks into efficient, scalable and controlled workflow processes that are shared between counterparts.
- **Cost effectiveness:** Cloud solutions are more cost effective than in-house, hosted systems. A service fee replaces initial development costs; a single instance means that upgrades are more easily deployed; professional services are no longer required to maintain, support, user test nor update solutions as this becomes the responsibility of the service provider.
- **Timeframe:** Cloud services can significantly reduce installation and ongoing support response as compared to enterprise solutions which in turn reduces total burden of ownership, improves business continuity and increases flexibility for potential future upgrades.
- **Security:** Cloud solutions are gaining increased adoption as financial institutions gain comfort from continually evolving security controls and infrastructure. ■

Looking to the future

What might the collateral ecosystem look like in 2030 and to what extent will emerging technologies be embedded within it?

"My hope is that we'd be able to move collateral through the market place in a frictionless way that supports liquidity and capital market flows in a more efficient manner. Whether that's through a full change to market infrastructure or whether it's via another layer that supplements the existing, capable processes that we have in place today remains to be seen. Targeted solutions to specific problems have now gained momentum, and it will take a little while to roll these out in the market, but if we're not well on the path to a more efficient multi-market, multi-asset class settlement process by 2030 then we would have missed an opportunity."

– Scott Lucas, head of firmwide intraday liquidity at J.P. Morgan.

"One of the most powerful things that DLT and smart contracts can bring is a greater level of automation, for example, in the event of a change to the security you could have automatic adjustments occurring which would allow for the broader use of different types of assets, outside of even the typical securities we see today. I think that we will see digitised securities, such as universal settlement coins or tokens, at some point by 2030. You could imagine a scenario where mark to market is occurring every five minutes instead of once a day because it's so easy to transfer these securities automatically using smart contracts. However, tokenised securities is an area where regulatory guidance is needed, there has to be the right set of governance around it, and it should be done in a way that doesn't bifurcate the liquidity that we have in the marketplace today."

– Matt Wolfe, vice president of strategic planning and development at OCC.

"Collateral management is a complex issue and needs are very different depending on the profile of each participant. As a market infrastructure provider, BME is very much involved with the first layer of collateral management linked to liquidity and treasury management processes in the financial industry. In this context, we believe that the trend will continue to be led by market infrastructures in a relatively centralised way with a methodical introduction of new technologies but ensuring that control and trust is maintained in neutral central infrastructures. However, in the next layers of collateral management it is much more atomized and the number of providers is much broader. This has always been an effervescent field for innovation and regulation is also less constraining than it is for market infrastructures, and we therefore expect a faster level of adoption of new technologies."

– Berta Ares, managing director at BME Inntech.

"The pace of technological change in the 21st century is unprecedented. Thirty years ago, the widespread adoption of the internet coupled with smartphone technology would have been hard to imagine. In some ways and often for good reasons the securities finance technology has yet to mirror such acceleration. At Pirum we remain committed to assisting the industry achieve its automation goals for 2030 and wherever possible will do so in a collaborative and non-disruptive manner."

– Phil Morgan, chief operating officer at Pirum Systems.

"By 2030, more than 90% of all collateral and funding decisions are going to be made by machines. Automation is going to be the fundamental driver in our industry and where it will be really important is not just decision-making, but the ability to act on that decision in a seamless way. This frictionless movement of collateral is the end-state that the industry is looking for."

– Bimal Kadikar, chief executive officer at Transcend.

"My forward-looking view is one in which depositories for a multitude of asset classes located across the global jurisdictional landscape are connected by an interoperable network of digital registries, which together facilitate seamless ownership transfers, not only for cash and securities, but also for other asset classes such as commodities and precious metals."

– Guido Stroemer, co-founder and chief executive officer at HQLA^X.

"The ecosystem is going to be much more complex – more products, more counterparties, more venues, more regulations – but standardised, automated technology should make the process of managing that growing spider web of complexity much easier. Everything will be much more automated. You should be able to move assets and check collateral eligibility, for example, at the touch of a button. Whether that's achieved through emerging technologies or existing technologies, that's ultimately where the industry needs to get to."

– Robert Frost, head of product development at Pirum Systems.

"Where the market sees the collateral ecosystem moving to, even before 2030, is one where counterparties are able to move assets across different custodians seamlessly. The user-experience and interaction of facilitating that will be user-friendly and frictionless. Speed to clearing and settlement will have no errors and will happen in real time, meaning zero-touch on-boarding, auto-instructing movement of the long-box and firms having one view of their collateral globally. All of these could be enabled by DLT and tokenisation."

– Carrie Osman, founder and chief executive officer at Cruxy & Company.