SLT SecuritiesLendingTimes

AnnualReport 16/17
Collateral Management

WHERE NO PLAN HAS GONE BEFORE

An unknown of contention

Despite this being our sixth annual report on collateral management, the fact remains that there is still much we don't know about how a largely collateralised financial services sector will work.

Many national regulators are struggling to meet deadlines for the implementation of over-the-counter derivatives market reforms, while central counterparty (CCP) exposures remain a challenge complicated by internationally active banks.

In attempting to harmonise regulation around the world, regulators have come to understand—or not, depending on how you look at it—the global interconnectedness of all things and how, if one country implements strict rules without the others, the fine balance that has been achieved in many financial services tips, and there's no telling which way they will fall.

Of course, many other questions remain: how will the SFTR affect collateral data requirements? What more do CCPs need to do to prove their worth? Just how much work does the buy side have to do?

This is why our sixth annual report on collateral management aims to look forward rather than back. The questions you have now, about managing your collateral going forwards, are the ones that need to be answered, and soon.

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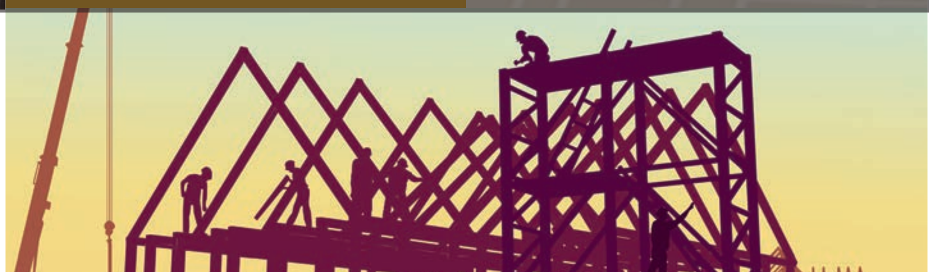

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Into the unknown

Staffan Ahlner of BNY Mellon Markets pinpoints the challenges, risks and rewards that await the buy side as it ventures into new territory

What has changed for the buy side in today's collateral environment? What new challenges are they facing?

The buy side faces increasing challenges in maintaining its business with the same financial transactions that it has been using over the years. More of these transactions are requiring collateralisation, and with regulatory deadlines on the horizon, the demand for collateral assets continues to grow. This trend is nothing new—we have seen it building for some years. What is new, however, is the time pressure and the realisation that it is time to act. The buy side is now having more discussions around sourcing collateral, such as the collateral needed to cover initial margin and the cash for variation margin requirements.

This need for the right collateral, especially the cash needed for variation margin, comes at a time when balance sheet costs for the sell side are higher than ever before. Regulatory requirements give banks and broker-dealers (the sell side) less balance sheet flexibility to effect transformation trades. These transformation trades created liquidity for the buy side.

> *Collateralising transactions helps to manage counterparty risk and using an efficient collateral management model, such as triparty, provides further risk mitigation*
>
> **Staffan Ahlner,** Head of collateral management product
> BNY Mellon Markets

Without these transformation trades, some buy-side participants will have to go directly to the market or stop using the transaction that creates the collateral requirement. With the sell side engaging in fewer transformation trades, the buy side has an increased need to interact with the market directly to raise cash and source collateral.

What is the main driver behind the need for the buy side to build an in-house collateral treasury function?

Capital cost is the main driver. This cost restricts some sell-side firms from providing the required collateral transformation transactions, and this will drive some of the buy-side firms to look at the alternative of entering the market directly. An in-house collateral treasury function can help the buy side mobilise and access the collateral and liquidity they require over and beyond what the sell-side firms can provide. Banks and broker-dealers have a long history of sourcing collateral and raising liquidity in the market, so the buy side needs to enhance its expertise in this area and build its own collateral treasury function if the sell side is unable to provide for the transformation.

Hedge funds have been the first movers in this space, and the larger hedge funds interact directly with the market. Now other buy-side market participants are pursuing this strategy for sourcing collateral and liquidity. Many large buy-side institutions have the resources to build an in-house collateral treasury function that helps to utilise the assets they have and source the collateral they need. It's the medium- and smaller-sized institutions that may struggle.

The good news is that there are tools available to help these firms, tools that the sell side has been using for decades such as the triparty structure. Medium- and smaller-sized firms can also find support through arrangements such as principal lending, in which a service provider can help them reach the market and source liquidity.

What are the costs associated with building a collateral treasury function?

Building a collateral treasury function incurs fixed costs, mainly for staffing and technology, but there are service provider tools and capabilities that the buy side can leverage that would incur variable costs. The buy side can access electronic platforms to connect to the market for price discovery and trading. They can outsource much of the post-trade activity for collateral trades to a triparty agent. If a transaction does not fit into a triparty structure then these transactions can be outsourced to a collateral administration service provider.

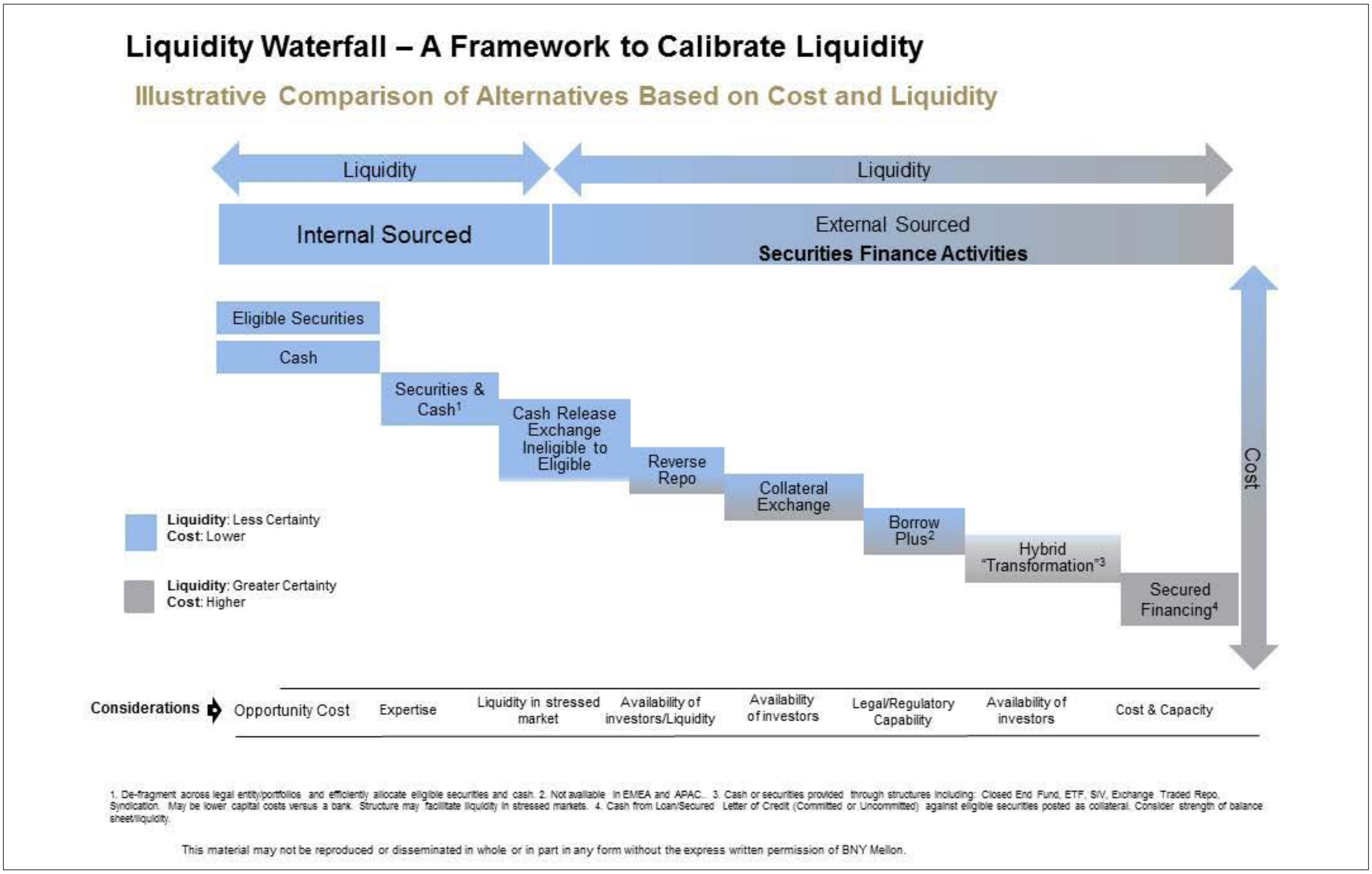
What are the risks of an in-house collateral treasury function?

By setting up an in-house collateral treasury function, and trading directly with the market, the buy side will incur counterparty risk. This counterparty risk is not something new, but it is changing. By sourcing the liquidity and collateral directly, the counterparty profile may change to include other buy-side firms. There might be a number of new counterparty types rather than one or two sell-side firms. Collateralising transactions helps to manage this counterparty risk and using an efficient collateral management model, such as triparty, provides further risk mitigation though it does not completely remove counterparty risk.

An in-house collateral treasury function also potentially introduces replacement risk, something that may be new for some buy-side firms. By entering the market to raise cash or borrow stock, the buy side has to give margin. The lending industry does offer various indemnifications to the buy side. The indemnifications were typically provided by banks and required capital. In our current environment, such capital usage would be expensive for the provider of the indemnity due to capital constraints.

An in-house collateral treasury function will help with access to liquidity. Are there any other benefits?

If a buy-side participant builds a strong collateral treasury function, it has the ability to be on both sides of a transaction, which presents a number of benefits. The buy-side institution can use its liquidity pool to invest in a repo transaction and then re-use the collateral received in that transaction to help with cash flows and do short-term funding if needed. The ability



to enter into the market on both sides of the transaction unlocks trapped liquidity. It also can help the buy side to enter into longer dated trades that are needed for the banks' funding ratios.

An in-house collateral treasury function also provides a buy-side firm with alternatives. The buy side can build large cash balances to meet variation margin calls, but this buffer may interfere with investment strategies. For example, if an asset manager holds excess cash in its portfolio, this could adversely affect fund performance. With an in-house collateral treasury function, the buy side has an alternative source for this cash buffer. In the event of increased cash demand, the collateral treasury function would convert assets into cash liquidity when needed, and the fund manager can keep its investment strategy on course.

Holding cash can have other adverse consequences. Typically, the banks that receive the cash do not want to hold it, and the buy side would also have a depository risk to the institution holding the cash. In most cases when the bank holds cash, the cash is part of the bank's property. Should the bank fail, the buy side would be an unsecured creditor to the failing bank holding the cash.

We do see the buy side using money market funds to help mitigate this risk. The buy side purchases the money market funds and if needed transfers the money market funds as collateral in exchange for securities in a securities lending transaction. If the money market funds are not sufficient, then the buy side could, if permitted, revert back to purchased high-quality liquid assets and use this in the repo market if they have access.

What are the tools available to help with documentation, trading and post-trade operations?

Industry standard documentation is a resource that can help buy-side participants when establishing a collateral treasury function. These documents are in line with industry standards. By leveraging these, the buy side has access to the legal opinions and updates for these documents. The challenge the buy side faces is the amount of documentation needed. If you are a fund with multiple legal entities, say 10 entities, and want to trade stock loan and repo with 10 counterparties, you will have 200 documents to sign.

This is a challenge for the industry, and we are therefore working on alternatives to this.

On the trading side, the buy side does need to connect up to the market. The sell side has established sales and trading desks and an information advantage over the smaller scale buy side. The market is developing peer-to-peer or buy-side to sell-side offerings to facilitate this. This is an area in which BNY Mellon is active.

The post-trade side is easier because the triparty structure helps with post-trade operations. Triparty makes this process very efficient, so that the buy side's collateral treasury function can focus on trading and not on post-trade operations such as settlement, corporate actions and collateral optimisation and substitution.

Documenting the triparty activities is straightforward, and the buy side can settle collateral obligations by signing one collateral management master agreement. After signing that document, the collateral provider only has to agree its collateral profile with the counterparty or trade using a pre-defined collateral set. **SLT**

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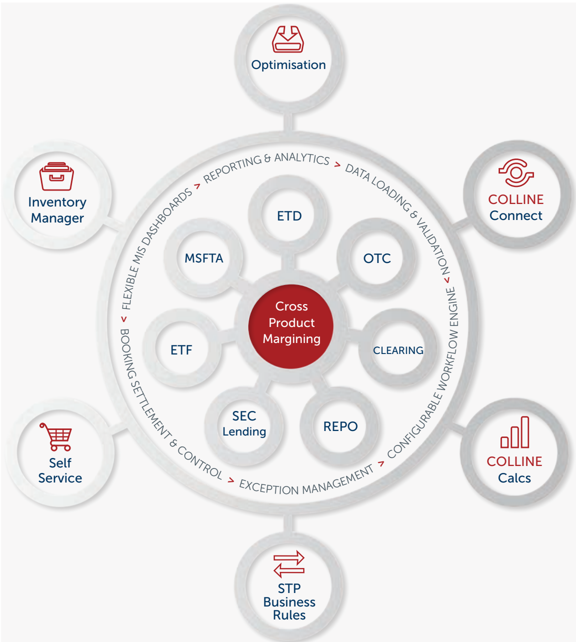

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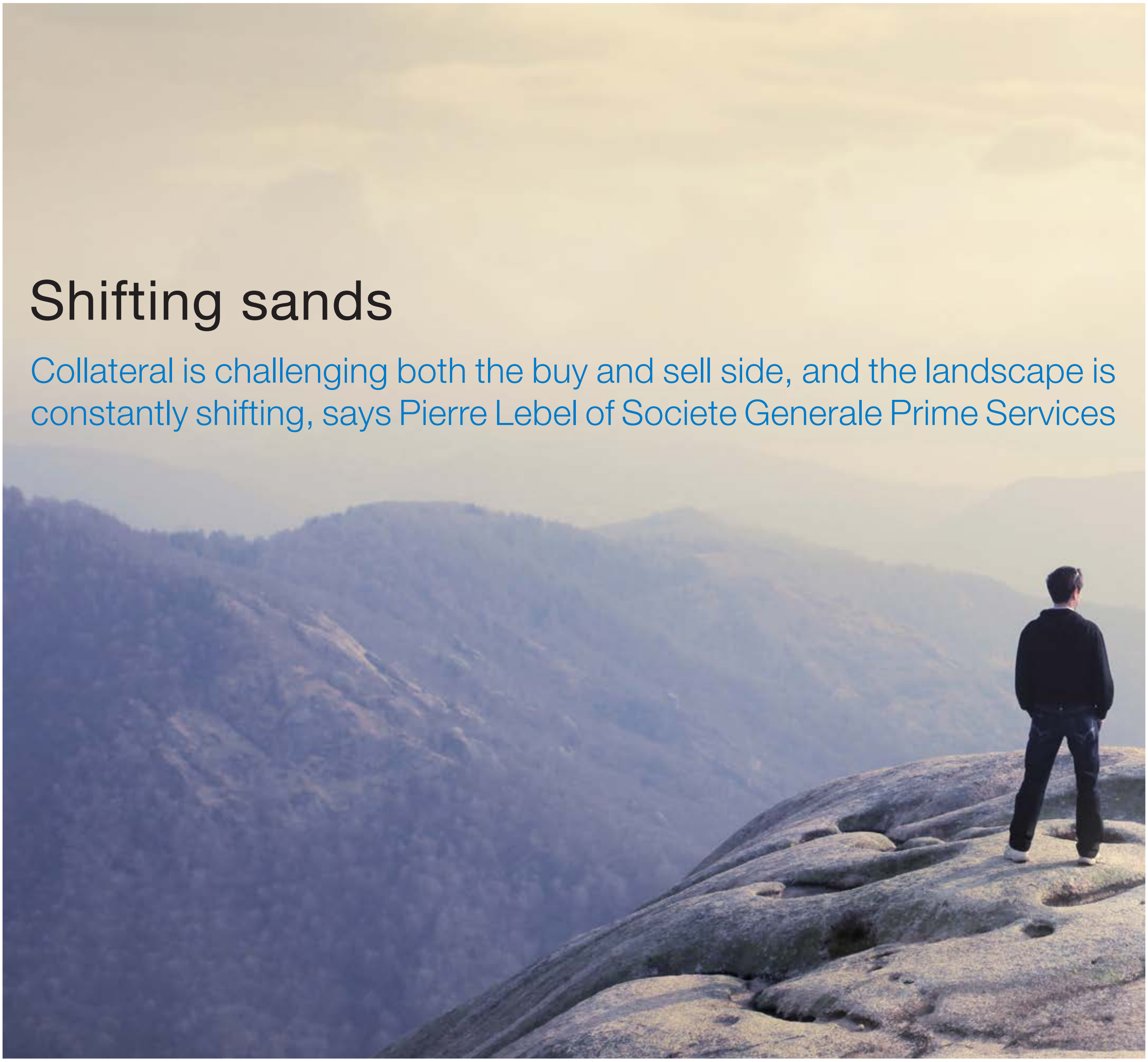


Shifting sands

Collateral is challenging both the buy and sell side, and the landscape is constantly shifting, says Pierre Lebel of Societe Generale Prime Services

The world of securities financing is replete with opportunities and challenges. But in many ways it has become illogical to look at any of these activities in isolation, both from a cost and risk management perspective. This is why an increasing number of market participants are choosing to outsource or to reinforce, both to benefit from a robust infrastructure and the economies of scale offered by a provider operating across multiple market segments. Most beneficial owners are not of a size to justify their own securities lending or repo desk, which makes it more difficult to find market value and closely manage risk.

This is particularly critical in today's challenging markets. The 'emergency measures' implemented by central banks around the world in an effort to stimulate global recovery have become business as usual in many regards. The market has grown accustomed to the support of quantitative easing (QE), which continues to act as a cornerstone in uncertain conditions, now injecting some €80 billion per month into European capital markets.

Understandably, there have been concerns over what impact QE may have on collateral liquidity. With such a colossal buyer in the market, it was not unreasonable to expect that market participants would face a serious shortage of good quality fixed income assets.

The real effect of QE on collateral liquidity, however, has been much more benign than anticipated. As Eurozone capital markets continue to be supported by robust, continuous sovereign bond issuance, market participants have found no shortage of G7 bonds and buyers for them. Equally, it is still straightforward to borrow bonds in the repo market, providing an alternative source of supply where needed. This is even in the face of strong demand for high quality liquid assets (HQLAs), now required as a buffer by banks, thanks to incoming capital and solvency regulations for major financial institutions.

By contrast, liquidity for corporate bonds is where QE has hit hardest. This has been compounded by new bank capital regulations, which have limited banks' ability to act as a market maker for these assets,

given the leverage ratio and liquidity coverage ratio cost of holding such inventory on their balance sheet.

What's more, the lines between market making and proprietary trading are so fixed that banks quickly reach a limit on their activities. These rules may have succeeded at making banks stronger, but they have also drained liquidity from that segment of the market.

So, contrary to market rumours in recent years, the so-called 'collateral crunch' has not yet materialised where participants are seeking HQLAs. Aside from the ample supply of G7 bonds, collateral transformation trades have been effective at addressing potential shortfalls. If the trading party will accept assets other than sovereign debt or cash, it is perfectly possible to rehypothecate less attractive assets, such as corporate bonds and equities, to achieve a rate that virtually matches the Euro Overnight Index Average. Collateral upgrades and downgrades have been an important source of market liquidity—the ability to exchange equities and less liquid or haircut assets for high quality collateral such as bunds has been instrumental. However, these trades are all impacted by leverage exposure.

Despite the abundance of high-quality collateral in the market today to those with sufficient funding, this does not mean that concerns over collateral scarcity are entirely misplaced. Market participants face several major challenges over the short to medium term that are likely to significantly impact the availability of collateral and prompt a rethink in how it is allocated. The most pressing is Basel Committee on Bank Supervision Rule 261, a global regulatory initiative expected to be phased in starting from the end of 2016 as a joint effort between several regulators. The regulation, which has been in development for a number of years, will make it mandatory to post initial and variation margin against bilaterally traded over-the-counter (OTC) derivatives transactions.

The scheme begins with the largest banking institutions, those that have a balance sheet of $3 billion or more, gradually expanding to include smaller banks and lower tier institutions dependent on their asset holdings. The implementation has been pushed back in Europe to 2017 but there is still uncertainty about the exact compliance date. In the US, the implementation date is maintained for September 2016. These standards are critical because of the complexity of the regulation's practical details. Calculations of collateral requirements depend on either a capital-intensive approach or a so-called standardised method.

These are particularly complicated because they effectively work in reverse. Market participants will be obliged to calculate what they expect to receive from counterparties, rather than what they expect to post. The overall objective is to create watertight risk mitigation in the world of non-listed derivatives to protect against systemic risk and public money being called to the rescue.

Although availability of collateral will be a major challenge for institutional investors, the massive operational demands associated with implementation are equally as pressing. Most market participants are accustomed to regularly posting collateral with brokers in listed transactions, but these new reforms bring additional time pressures. Moving these processes from weekly to daily is a mammoth task, along with preparation for connecting with the universe of infrastructure that supports this shift, such as reporting to trade repositories. It is imperative this reporting is accurate and timely.

In addition, UCITS V-related rules are still bedding in and portfolio managers must be mindful to keep pace with these changes. Operational frameworks are going to be strongly tested in these scenarios and banks and fund managers will need robust systems in place to meet these upcoming challenges.

Keeping a handle on the costs will be key. Record low rates, one of the other 'emergency measures' of monetary policy, seem likely to be a semi-permanent feature of the investment landscape in the face of continued market uncertainty. This is creating perpetually challenging conditions for finding risk-free returns. Redeveloping internal systems, technology and processes to meet these new requirements is an investment that most asset owners can ill afford, representing a further drag on already compressed yields.

In many cases, the solution is to outsource the entire operational framework so that managers can focus entirely on business development. An outsourcing agent comes equipped with the economies of scale needed to feasibly invest in the constant development needed to meet shifting regulatory requirements. This has become necessary due to the huge uptick in the amount of information now demanded from other market participants and authorities, which require significant internal resource and automation.

Outsourcing collateral processes brings benefits in more ways than one. As the environment for returns has become increasingly challenging, funds and their service providers have sought ways to find yield economically, cautiously and within the confines of existing regulated activity. One option large funds and their custodians have taken to address this is stepping up securities lending to maximise value from under-utilised assets. Securities lending, while it does also bring its own collateral requirements, allows beneficial owners to generate additional revenues within a long-established and tested legal and regulatory framework. Since the financial crisis, this framework has become even more robust and transparent. Indeed, asset owners are more likely to have to justify themselves to holders on why they are not lending securities, rather than the contrary, given the pressure to generate additional income from whatever risk-appropriate means available.

The issue is that there is still inherent risk in practising these strategies without the backing of a strong operational framework. Outsourcing to an agent lender is one option that allows beneficial owners to diversify their counterparty risk. They come equipped with a front-to-back integrated set-up, from which the fund benefits without having to take on additional cost. Critically, the demand for securities lending revenues has been matched with a renewed appetite for transparency.

Beyond securities lending, other transactions are growing in popularity to provide additional sources of revenue. Corporate actions are gaining increasing attention, as are scrip dividends which offer the shareholder the choice to be paid a dividend either in cash or shares—typically an agent lender can arrange the latter at a premium for beneficial owners.

At Societe Generale Prime Services, we have established a cross-asset finance solution that brings together clearing collateral management, agency lending and securities financing, significantly boosted by our full acquisition of Newedge in 2014, uniting our prime services capabilities. We see the challenges outlined here as fundamentally interconnected, and our capability to centralise liquidity within one location offers compelling solutions to them. A fast-moving regulatory landscape in collateral management demands an expert approach. Our cross-asset capabilities mean we are well positioned to view the full market picture for our clients.

The collateral landscape will continue to shift in response to macroeconomic monetary policy, whether QE and low rates come or go. Only by taking a holistic approach to the challenges, backed by a strong operational framework, can market participants successfully navigate the shifting sands. **SLT**

Critically, the demand for securities lending revenues has been matched with a renewed appetite for transparency

Pierre Lebel, Head of collateral advisory for prime services
Societe Generale

Too early for the buy side?

Awareness building is imperative to ensure that collateral management efficiency is given focus so that is can have an impact on the bottom line, according to Jonathan Adams of Delta Capita

Earlier in 2016, it was reported that despite some considerable investment and development of collateral management applications, utilities and services, there was very little take up by the buy side. This is a significant finding given the potential benefits for asset management firms to further mobilise portfolio assets for day-to-day requirements such as managing liquidity risk and meeting margin call obligations.

The compliance deadline for the European Market Infrastructure Regulation (EMIR) mandating the clearing of over-the-counter (OTC) derivatives and the exchange of initial margin for bilateral (uncleared) OTC derivatives has been pushed back a couple of years. There is currently little perceived benefit for buy-side firms to change the existing cash-driven margin call process for both cleared or uncleared OTC derivatives, especially as the current requirement in bilateral OTC is to exchange variation margin only for the time being.

Industry spokespeople indicated that it was unclear which requirements and obligations the delayed regulations would bring. Furthermore, there did not appear to be clarity on how the changes would affect the clients of clearing members (if at all) and what the value was versus expenditure. As is often the case, competitors wait to see to see how their industry rivals will approach the matter given the perceived hypothetical nature of what might be required.

Some feedback indicated that products appeared more sell-side focused and perhaps that they represent functional overkill for asset managers. Then there were operational risk concerns for those participating agency securities lending programmes with third-party lending and exclusive deals on portfolios, which all add complexity to the location of assets, including whether they can be recalled on time for sell orders and assessing when assets are used for collateral purposes or in lending programmes. Given that the decision process is always an assessment of what is a core activity and what activities can be outsourced, in the absence of a regulatory driver, there has to be clarity on the benefits from a revenue perspective.

One custodian triparty agent indicated that the take-up of triparty collateral services by their asset management clients was less than expected and there have been a couple of significant market infrastructure services that have been either abandoned or delayed.

In addition to these factors, there is an awareness of ongoing developments at the central counterparties (CCPs) to provide facilities such as cross-margining and to have triparty capabilities, which would might further delay the choice on products.

This perfect storm of product diversity, perceived lack of immediate necessity and an uncertain regulatory landscape might explain the situation, but perhaps there are less evident factors that could bring different conclusions.

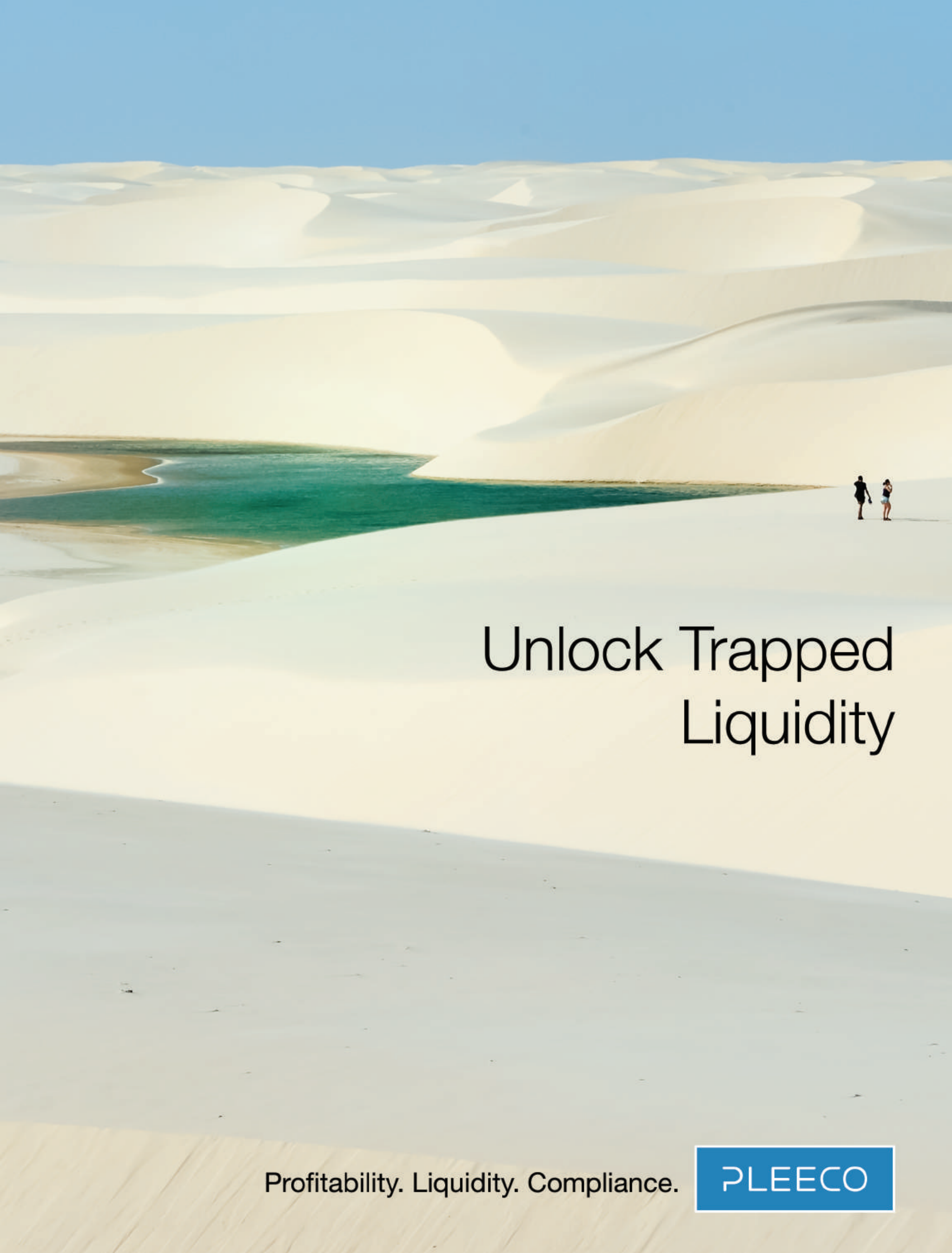
The very organisations that have traditionally provided services to the buy side and been their transaction counterparties have been affected greatly by regulation, such that it has been considerably less attractive for banks to trade with their buy-side customers. Consequently, there does exist an immediate justification to beef up their collateral management capabilities in order to not rely solely on the sell side.

Let's examine two quite different scenarios where a collateral management capability would be of benefit to the buy side.

Clearing client or clearing member?

In the period leading up to the 2008 global financial crisis, there was an abundance of cheap client clearing services. Banks were almost exclusively the clearing members that provided these for high-volume plain vanilla OTC derivatives products such as interest rate swaps.

This 'group' monopoly continued in the immediate post-crisis period as regulatory reforms mandated central clearing of OTC derivatives for most counterparties, which led to increased demand for the service. However, with the expansion of central clearing, banks have been



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burdened with having to be members of multiple CCPs in order to service their global buy-side clients. This, combined with the post-crisis regulatory changes on how to manage their balance sheets and having to comply with capital requirements, and suddenly the business of offering client clearing services is a less attractive revenue proposition and requires strict compliance and monitoring.

As a clearing broker, a bank sits in the middle of a transaction between its clearing client and the CCP. In doing so, it uses capital (for leverage and risk-weighted assets), balance sheet, funding, and takes on liquidity risk as it often pre-funds margin call payments, which are automatically taken by the CCP and later charged to the clearing clients. There is also a capital charge for the exposure that the clearing member has with the CCP. The clearing broker also has to fund the provision of high quality collateral to CCP guarantee funds and for initial margin.

This has undoubtedly had an impact on how much banks have to charge their clearing clients to provide the services they require. Buy-side clients transacting significant volumes across multiple CCPs could certainly benefit from being able to self-clear. A sophisticated collateral management capability then becomes a worthy and immediate consideration.

The cost of liquidity

Investment and wholesale banks have traditionally been providers of liquidity to the buy side. Due to capital adequacy requirements and balance sheet usage, collateralised transactions versus cash have an adverse balance sheet impact. Even when the collateral is of the highest quality, there is an impact for banks. Where such transactions are collateralised by non-government assets, corporate bonds and equities, there is an impact on their risk-weighted assets (RWAs) and capital adequacy ratios. This is reflected in the rates they are able to provide when asked to bid for collateral.

Slowly but surely, regulation has had an indirect impact on the buy side via its sell-side relationships. With this changing banking landscape, there is value in seeking non-traditional counterparties that are not suffering from the same constraints, such as other buy-side counterparties, including treasury desks at large corporations. In this context, triparty collateral management looks very attractive as it enables the collateral giver to commoditise pools of assets and outsource the re-valuation, recalls and substitutions to the triparty agent. The marketplace is already responding to this and services such as Euroclear's RepoAccess are taking the headache out of negotiating individual global master repo agreements (GMRAs) with each counterparty. It enables a group of participants to sign a single agreement to appoint Euroclear as the agent, allowing Euroclear to enter into GMRA contracts with each of the participants.

Other products are in development that will enable collateral transformation in a similar pooled fashion and so a different landscape is emerging, providing the buy side with alternatives to seek liquidity, transform collateral to higher quality assets to meet collateral obligations, or downgrade to earn revenue.

Managing liquidity is not an insignificant task for portfolio managers and being prepared for investor redemptions, managing portfolio restructuring, meeting margin call obligations, covering liquidity shortfalls and investing excess liquidity has required that they invest in dedicated teams and technology to manage the process. Yet nowadays, where major currencies have near zero or negative interest rates, the disparity between the yield of a strategically invested portion of a fund's net asset value (NAV) and the portion that is invested in short-dated products such as repo and money market funds is considerable.

The impact of the poor return from the liquid portion of a fund's NAV on the overall return is referred to as 'yield drag'. This could be mitigated to some degree by rebalancing the ratio of the strategically invested portion to the liquid portion (invested in short-dated products).

The transformation of strategic investment assets into high quality assets would enable a similar liquidity ratio as before, with the ability to raise cash readily against the HQLA or use HQLAs to meet collateral obligations. The annual cost of collateral transformation is a fraction of the yield improvement gained from reducing a fund's liquidity.

Building awareness

Collateral management and optimisation has traditionally been the focus of the sell side, which is typically leveraged and focused on balance usage. The focus for the buy side is different, with a decision process in play that determines the deployment of expertise and resources for core activities while outsourcing activities that are considered to be non-core.

With that in mind, awareness building is imperative to ensure that collateral management efficiency is given focus so that is can have an impact on the bottom line rather than be just about regulatory compliance. To take advantage of the available benefits, there are specialist advisory consultancy services that can will help clients get the right balance between in-house capability and outsourcing. **SLT**

"The focus for the buy side is different, with a decision process in play that determines the deployment of expertise and resources for core activities while outsourcing activities that are considered to be non-core"

Jonathan Adams, Principal consultant and practice lead
Delta Capita

Where does your firm stand with collateral management?

A recent webinar on The Economics of Collateral and Making a Profit showed some contrasting trends. Ted Allen of FIS Apex Collateral explains

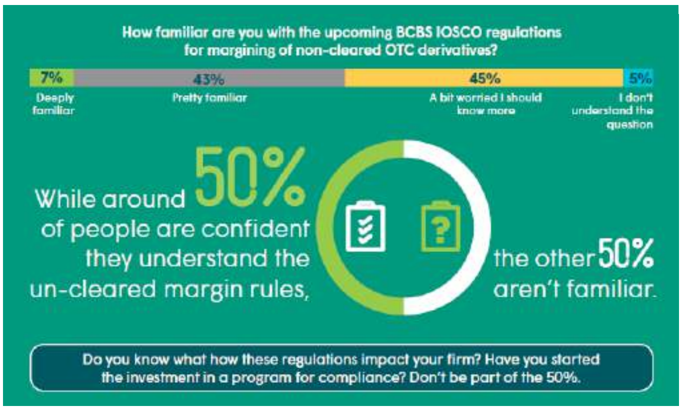
In the spirit of sharing and advancing industry thinking around collateral management, FIS recently ran a webinar, The Economics of Collateral and Making a Profit. Our audience was able to benefit from the front-office, sell-side perspective of Commerzbank's Eric Bystrom, the buy side was represented by the renowned industry expert John Lund, and I shared insights from the perspective of the technology solution provider.

We thought the topic would capture attention and give a slightly different angle on much of the public debate about what firms need to do to stay ahead of the rolling regulatory ball. These regulations create a set of challenges for market participants that we can collect into two buckets: the operations complexity of compliance and the economic cost of funding the extra collateral and capital. We set out to explore these themes and inform how firms can address them.

We have been living through a few years of unprecedented regulatory change that has transformed the industry and the business models of many firms. The current regulatory headache for these firms is the rules for margin for uncleared derivatives (or MUD for the ironically minded).

MUD rules following on from the clearing mandate will cause huge change in the OTC derivatives industry globally and although they are designed to bring stability and clarity to the market, they have an onerous cost of implementation. New agreements will be needed, more collateral required and new processes implemented.

We asked the webinar audience how much they knew about these regulations that affect the first tranche of firms this year and the bulk of market participants from March of 2017. We had an even 50 percent between those who are on top of and understand the rules and those that need to find out more. I hope we made the MUD a little more clear for the 50 percent that needed it.



So after we had covered the mandatory regulatory scene setting, we looked deeper into the knock-on questions that are thrown up and what firms on the sell side and the buy side are doing to prepare. At the risk of stretching the joke too far, MUD has caused a mess for many in the industry. Compliance is not optional and in a time of tightening margins and rising costs of collateral and capital, firms on both sides are faced with the need to upgrade their systems and processes.

Technology is proving to be the biggest investment need. Many firms have taken the regulatory compliance need as an opportunity to upgrade or replace their collateral management systems, across the front and back office, to modern platforms that are able to handle the new regulations and to provide the centralisation of inventory, optimisation and operations that legacy platforms cannot. Forty-five percent of the audience saw technology as the biggest problem.

We know from various quantitative studies that there is going to be a lot more collateral required in the system to support the current level of activity. Even with the behavioural changes we can expect from this extra cost of trading, there is still going to be a lot more of the stuff needed.

At the same time capital requirements are also increasing, creating competing demand for the same high quality assets that could be deployed as collateral. Cash currently accounts for about 80 percent of all collateral out there.

The first topic we looked at was whether we can expect the use of cash as collateral to change and particularly if firms are going to start deploying more non-cash assets.

There are good reason why cash is king: it is simple to hold and move, it's always eligible and indeed for many collateral arrangements, it's the only possibility. Dealers generally prefer to receive cash because of the benefits to the regulatory ratios they receive from taking in cash collateral and the low or negative interest rate environment means that it is often still the cheapest thing to post.

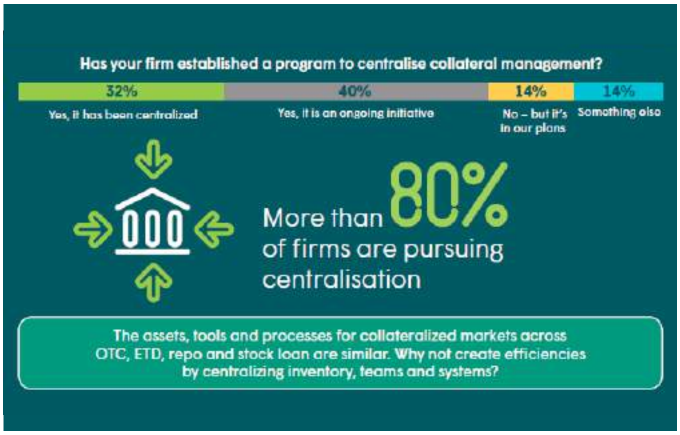
For the fully invested funds on the buy side, however, keeping cash can create performance drag and there are often good inventories of securities that could be used instead.

Our panel's consensus was that as we see collateral requirements go up and interest rates rise, firms will start to employ a two-pronged strategy of addressing the cause of the problem by seeking out less collateral intensive risk management strategies and of mobilising those pools of assets and bringing their inventory into play.

The next hot topic we dissected was the centralisation of collateral management within firms. Collateral affects the firm's liquidity and should be actively managed across business lines as part of the firm's overall liquidity strategy.

Many firms understand this and have taken action. Centralisation of the collateral allocation function across business lines is a more established trend among our market participants. The great thing about these webinars is you can get instant audience feedback and insight.

Our online poll showed that 32 percent have already centralised the function and another 54 percent are either in the process of centralising or actively planning for it.



Keeping our eye on the focus of the conversation, collateral management and profit, we moved on to the next chapter in the story, minimising the cost of collateral. Centralisation of the collateral function can be a foundation for a box full of tools to minimise cost. There are the obvious economies of scale and control advantages from having a single operations platform. However, greater benefits may be yielded by centralising the inventory of assets that can be deployed. Centralising inventory means being able to see at any point in time which assets you have, where they are, how long you have them for, where they can be used and where they are most valuable. Getting that up-to-date central inventory view can be difficult for firms with multiple entities across multiple locations with multiple custodians. It can be worth the investment in a central inventory platform to then make optimal choices about how that inventory is deployed.

The overall profit and loss of a collateral programme will take into account the optimisation of inventory and minimisation of the cost of collateral. Collateral cost is a function of how much collateral you need and how you allocate your assets against those needs. Firms are investing in both sides of the optimisation coin: techniques in minimising the amount of collateral that is needed (cross margining, optimal counterparty/central counterparty selection, compression, back-loading) are employed pre-trade. Techniques to minimise the cost of allocating or funding collateral (collateral optimisation) are employed post-trade and are part of the larger inventory optimisation question. These form the collateral optimisation value chain that our poll shows is a significant area of investment.

As vendors in the collateral management space, we have to constantly anticipate what our clients and prospects are going to expect from us down the line. Our customer's needs have to inform our investment decisions about what new products and features we bring to market. The webinar was useful for us to help share perspectives from some of the industry's leading thinkers and also to gather feedback from our audience into their priorities. This helps us build better software that responds to the market's needs. **SLT**

"Greater benefits may be yielded by centralising the inventory of assets that can be deployed"

Ted Allen, Director of business development for Apex Collateral, FIS

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The right response

Triparty collateral agents offer reduced risk and potentially greater collateral optimisation, according to Nick Nicholls of GFT

Since the publication of our paper on utilising triparty facilities for over-the-counter (OTC) derivatives collateral, we have had numerous conversations with clients and interested parties, including custodians, agents, broker-dealers and buy-side institutions. Much of what we advocated within that paper holds true, and we thought it was worth sharing some of the highlights from those conversations and to offer some further thoughts on approach.

Our theme continues on the interconnectedness of the front-to-back process, the management of risk, the impact on market liquidity and balance sheet efficiency, which triparty can integrally enhance.

No time to delay

The European Commission has announced a delay in the first wave of Basel Committee on Banking Supervision (BCBS) Rule 261 implementation, which is due in September 2016. Consequently, this has been reflected in further comments from US market participants, citing to Congress recently that any implementation in the US prior to Europe would put them at a disadvantage over the period.

At the time of writing, no notification of a new deadline has (as far as we are aware) yet been made.

In any case, it seems that most of the firms that need to comply with the first wave are pushing on as fast as they can in augmenting their systems to support the Standard Initial Margin Model (SIMM). Most of these larger institutions have said they have geared themselves up to manage initial margin movements and segregated custody via triparty agents. However, triparty agents have still not seen the uptick in triparty agreements for OTC collateral that they would expect at this time.

There still seems some reluctance to augment current capability for variation margin. We would expect this avenue to be explored more thoroughly once the variation margin deadline passes, and firms begin to see the benefit in managing non-cash variation margin in triparty.

Repapering over the cracks

The ongoing pressure of the leverage ratio and capital utilisation against the OTC derivatives position are pushing the market to look at innovative ways to reduce some of that pressure. Some European buy-side counterparties are being asked to consider auto-reset, sunset or cash only credit support annexes (CSAs).

While these CSA amendments improve the leverage ratios and capital positions of sell-side firms, they also favourably affect the triparty agreement process. On the one hand, there is something of a delay in implementing triparty for OTC collateral, on the other, for cash only variation margin, it simplifies the optionality in eligibility in collateral and triparty agreements. This backdoor to standard CSAs may be seen as necessary in order to meet call volumes.

Despite potentially lower pricing, buy-side organisations might still feel aggrieved with repapering. Funds that are asset rich and cash poor are still concerned about the costs associated with the transformation that will be necessary for CCP variation margin and could see this as an additional charge that they are not prepared to take on.

As the CSA settles to include SIMM (and any other renegotiated changes), they then need to be replicated in a triparty agreement, should that be the route two sides to the derivatives exposure they wish to take. That process can last a couple of weeks. It's not so much of an issue, the number of agreements that need to be seen are taken into consideration.

Assuming the top 20 or so buy-side firms have between three and five entities covered by the regulation and are separately transacting derivatives, with open transactions with each other, we should see around 10,000 new triparty agreements, just to serve initial margin implementation. Given the extent of repapering necessary in later phases, and the initial strain on firms, custodians and agencies' resources, any delay in preparing for BCBS 261 would see costs accrue from a manual call and substitution process.

Interoperability issues

The good news is that triparty agents see custodians as necessary for systemic flow. Capacity will be met more effectively with a greater number of custodians in play, and will reduce concerns around concentration risk. We would expect more custodians to sign up to the Liquidity Hub and DTCC-Euroclear's Global Collateral or Margin Transit Unit, and the Collateral Highway, in order to facilitate their clients' needs. Yet many custodians are hampered by a technology

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debt of legacy systems, which make systemic improvements such as these costly and hard to implement.

Constraints to interoperability still exist, but we have recently had some indication of the extent to which the cost of collateral is inflated because of restricted liquidity.

On 15 July, DTCC's inter-bank General Collateral Finance (GCF) service was suspended, forcing cleared repo market participants to transact with counterparties that settle positions in their own clearing provider. For those trading repo at the smaller of these clearing institutions, it has meant an additional 3 to 5 basis points cost per transaction, but has been much higher. This also adds liquidity risk to those key clients of J.P. Morgan, and leaves others reluctant to move to clearing for repo in that market.

The problem is a familiar counter-position between credit risk and liquidity risk and stems from the Federal Reserve Bank of New York's unease with the large amount of intra-day credit necessary to support the early morning repo unwind process. Subsequently, on 26 July, J.P. Morgan announced its intention to wind down its government securities settlement services, which mainly affects its GCF service. The bank will retain its custody, collateral management, prime brokerage and treasury services

Ironically, the closing of this facility was as a result of the Fed's concerns about large amounts of intra-day funding necessary to support it. Now that J.P. Morgan has pulled out of this market, we are left with either a concentration of business within BNY Mellon or four broker-dealers with difficulty in accessing market liquidity.

In an environment where the call on high-quality liquid assets (HQLAs) is extensive and supply is restricted, the cost of collateral will continue to increase unless triparty facilities are allowed to interoperate. DTCC-Euroclear's Global Collateral and Clearstream's Liquidity Hub remain vital first steps in allowing available collateral to flow without restriction.

As well as initiatives such as auto-resetting derivatives, the increase in funding and capital cost of OTC derivatives (for both cleared and non-cleared contracts) is driving 'futurisation' to listed derivatives. The scale of migration will be determined by investors' willingness to accept basis risk in favour of lower direct transaction costs. However, margin pressure will commoditise execution where possible, even more than has been the case in listed derivatives in the past.

Eventually, we may expect to see listed derivatives with greater flexibility, such as offering swap-like products with longer-dated maturities and greater optionality. Currently, the market appears to move slowly on futurisation, and non-standard OTC derivatives still need to be accommodated.

Use, re-use and rehypothecation

It is one thing to rehypothecate a pledge and quite another to re-use collateral under title transfer. There is a general misconception that the two are the same. In the OTC collateral world, we interchange the two. This misconception also appears to have been adopted by regulators. This may lead to some misunderstanding of what is possible for variation margin posted under title transfer in triparty facilities. In short, it's reusable, for collateral or securities lending purposes. Pledges are not.

The distinction is explored by the International Capital Market Association's European Repo and Collateral Council's response to the Financial Stability Board's consultative report 'Possible Measures of Non-Cash Collateral Re-Use'. In that document, the council argued that there is an inherent right in property ownership to use (or re-use) that asset in any way the owner wishes. This is an important distinction, which has relevance in any form of collateralised transaction. A hypothecation refers to a pledge of an asset as a means of security against losses that may occur. Rehypothecation is a re-use of that pledged asset, ie, a re-pledge. Re-use (or use) of collateral tends to be used where the title of that asset has been transferred to the secured party.

> ***The choice has to be based on commercial factors, and which route is wholly beneficial***
>
> **Nick Nicholls,** Business consulting lead
> GFT

Under English law (and most European law), CSAs and global master repo agreements will be title transfer. Under New York law, most repos and collateral are transacted under pledge agreements, under which it is highly improbable that rehypothecation of the collateral asset could take place.

Triparty works on the principle of re-use. Variation margin delivered under an English law CSA is reusable within the triparty system, and thereby adds to market liquidity against a view of where that collateral has entered the triparty system, and where it is held, irrespective of reporting requirements expected under regulations.

There still appears little reason not to begin reviewing capability in managing OTC collateral ahead of BCBS 261 coming in to force, irrespective of where a firm sits in terms of roll-out schedule for that regulation. Service providers offer collateral solutions that may provide alternatives to triparty. The choice has to be based on commercial factors, and which route is wholly beneficial.

The immediate impact of BCBS 261 will illuminate a fundamental capacity issue within any non-outsourced collateral operations and settlement process that tries and manages non-cash collateral effectively. Intra-day risk is becoming more prevalent, which arguably can be managed more effectively through an outsourced triparty mechanism--as we mentioned in our first paper, intra-day calls can be accommodated through a triparty agent, and fails risk is usually minimised and over-collateralisation trends downwards.

Gauging whether triparty is the right path for a firm will ultimately depend on the level of implementation required to accommodate the facility into any new or existing workflow, versus the benefit in reduced risk and potentially greater collateral optimisation. Derivatives pricing may also be influenced by the structure of the underlying agreement, and the additional operational burden and risks that a more manual bilateral operational process requires. **SLT**

Move this way

The markets are moving and being directed toward open and transparent exchanges such as Elixium, whereby counterparties can trade all to all, on a level, equitable and unbiased playing field. Roberto Verrillo explains

Changes to the regulatory environment have put the industry on a path that will change it forever. The effect of these changes has been an almost uniform decline in profitability for investment banks. Many operations have already begun efforts to restructure large areas of their businesses to maintain returns on equity that are acceptable to shareholders. This process will continue for several years yet.

In particular, Basel III significantly increases the cost of doing business, taking risk and market making by ‘taxing’ the cost of the balance sheet via increased capital requirements such as the leverage, liquidity coverage and net stable funding ratios. The more balance sheet-intensive a particular business area is, the higher the hurdle rate for returns should be. In this regard, bond trading and market making and repo stand out.

Many firms have not yet implemented an exhaustive study of what these hurdle rates should be. These are not standard across the industry but are firm specific and are calculated using varying inputs particular to each individual institution. Ultimately, these metrics will decide what each institution’s balance sheet will cost.

We believe that as this process of re-pricing and charging business areas for the regulatory cost of partaking in certain businesses (and transactions) progresses, the market will find many more institutions cutting back and restructuring their current business models, or simply pulling out of certain businesses altogether.

A good example is the net stable funding ratio (NSFR) under Basel III. This will lead to the necessity for longer dated deposits, particularly corporate deposits, which are treated favourably for banks under the rules.

NSFR provides for different available stable funding (ASF) and required stable funding (RSF) weightings depending on the type of counterparty and the residual maturity of the transaction. This will make many financing transactions that are still viable under current regulatory capital treatment extremely onerous. A 50 percent RSF weighting will be applied to all loans, including reverse repos, to non-banks, regardless of the residual maturity of the transaction, and independent of the underlying asset.

In other words, this would mean that all reverse repos with non-banks under one-year maturity would require the provision of stable funding against 50 percent of the value of the reverse repo. For example, a bank transacting a $100 million overnight reverse in AAA government bonds with an insurance company or hedge fund would carry a requirement for $50 million of (long term) stable funding, even if this reverse was match-funded by repo.

The cost of providing balance sheet to customers that may simply require a home for their cash has become increasingly prohibitive, leaving some banks having to turn away short-term deposits and repos and charge what might look like unreasonable costs for accepting these deposits, or even to only offer the facility to clients from which they generate revenue on other products as part of a wider relationship.

Because of this lack of willingness to, or difficulty in, pricing collateral transactions, many of these transactions become economically unviable, backward dated pricing and resulting dysfunctional collateral markets are in evidence over reporting periods such as month-, quarter-, half- and year-end but increasingly over a normal date run—volumes and liquidity are both showing signs of drying up.


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Banks can make significant cost savings by accessing liquidity pool providers such as Elixium for distribution. This leads on to the next area of regulation that needs to be addressed.

Initial margin and variation margin for uncleared over-the-counter derivatives will be phased in from September 2016 through to June 2021. The US will begin the initial margin programme from September 2016 for the largest of counterparties, but the EU has delayed the start of its programme until June next year.

Clearing banks that traditionally put up money to support default funds within central counterparties (CCPs) are increasingly reluctant to do so as they have to hold a significant amount of capital on their balance sheet to support this business.

Variation margin to CCPs must be in the form of cash, creating a need for collateral-to-cash transformation.

The size of the potential problem cannot be underestimated as banks step away from providing balance sheet to support short-dated, low margin repo activity.

CCPs are working to engage buy-side counterparties via differing initiatives, be they sponsored or direct CCP membership.

It is envisaged that mandatory swaps clearing in Europe could create unprecedented demand for high-quality liquid assets and their transformation, for use in initial and variation margining of swaps. Eventually, CCPs may offer cross-netting capabilities across a range of products.

The repo and secured lending markets are an intrinsic component to any financial market. They provide the ‘engine’ that allows markets to function successfully. In particular, collateralised markets provide: secured money market funding; the facilitation of central bank operations; liquidity in secondary debt markets; equilibration of imbalances in supply and demand; prevention to distortions in yield curves; pricing of derivatives; and margin maintenance for OTC and other products.

Clearly, the market has a problem with recycling its cash and securities at a reasonable cost due to the adverse balance sheet treatment and cost that the new regulations have created. As a result, liquidity and volumes are being adversely affected and markets are becoming increasingly dysfunctional.

Imminent swaps regulation will make the lack of depth, liquidity and volume ever more apparent.

Many new counterparties now want to enter the secured lending market via repo but find the barriers to entry too prohibitive.

Banks, the traditional conduits for this process, have been hit hardest and traditional trading mediums are outmoded and outdated.

The markets are moving and being directed toward open and transparent exchanges such as Elixium, whereby counterparties can trade all to all, on a level, equitable and unbiased playing field.

Elixium is a global all-to-all electronic marketplace. It is designed to provide a transparent and unbiased venue for trading collateral and seeks to address the issues around liquidity that have been affected by on-going market evolution.

As a multilateral trading facility for collateral and secured deposits, Elixium is targeted at firms of various size and constituencies, including corporate treasurers, CCPs, asset managers, hedge funds, banks, government issuers, central banks, insurers, and agencies.

Elixium has been explicitly designed to address the impact of regulation, balance sheet pressures and deteriorating levels of liquidity in the repo market by providing participants with collateralised liquidity on a fair, transparent, low-cost and equitable basis.

While the demand and client benefits are clear, many new counterparties are continuing to face high barriers to entry when seeking to access collateralised liquidity.

We have also adopted a user-friendly modular approach to documentation with the option to either subscribe to the Elixium standard global master repo agreement (with bespoke annexes) or utilise existing documentation between counterparties.

The platform further provides a full credit limit framework where the participant retains full control over the products and firms with whom they are willing to trade. Institutions will be able to qualify for credit slippage, view depth and liquidity across tenors and collateral baskets, and offer varied execution functionality.

Finally, using standardised products and processes, firms will have access to a range of maturities, currencies and collateral baskets, and will be able to facilitate collateral upgrades and new trading strategies via cleared, triparty and domestic settlement.

Over the coming months Elixium will expand its initial offering to over 40 collateral baskets covering fixed income and equities in GBP, EUR, USD, CAD, JPY, and emerging markets. **SLT**

The size of the potential problem cannot be underestimated as banks step away from providing balance sheet to support short-dated, low margin repo activity

Roberto Verrillo, Head of strategy and markets, Elixium

The road ahead

Those that lead and innovate will strive to provide competitive advantage and agility. Helen Nicol of Lombard Risk explains how

The new and complex rules mandated by the US Commodity Futures Trading Commission, the European Securities and Markets Authority and other regulators has caused the focus on collateral management to change considerably for both buy- and sell-side organisations globally.

The impact of the 2008 financial crisis demonstrated potential areas of weaknesses in the over-the-counter (OTC) derivatives markets. As a result, the G20 requested that the Basel Committee on Banking Supervision (BCBS) and International Organization of Securities Commissions (IOSCO) develop a consistent global set of standards for uncleared margin requirements resulting in the most recent regulatory technical standards (March 2016). The importance of the framework to the financial services industry cannot be underestimated as it lays out several key parameters as guidelines for the OTC derivatives market, including the exchange of daily variation margin, gross initial margin to be exchanged by both parties and held in such a way as to ensure that: (i) the margin collected is immediately available to the collecting party in the event of the counterparty's default; and (ii) the collected margin must be subject to arrangements that fully protect the posting party. The calculation of both initial and variation margin should also be consistent and any assets collected as margin should be highly liquid and be able to hold its value in times of financial stress.

The regulatory response to the financial crisis has been globally coordinated but has been locally implemented across jurisdictions—leaving much open to interpretation. Those institutions that are affected by the 1 September 2016 deadline have been reviewing the impact of the final draft in order to interpret the rulings and any global variances with the US and Asian regulations. The size of the uncleared market is substantial and despite a push towards central clearing, much of the derivatives market remains uncleared due to lack of standardisation, liquidity and customisation.

As a result of the changes, we have also seen interest from organisations looking to move non-OTC business lines onto a central clearing platform where possible. Extensions to central clearing business lines, such as those now offered by Eurex, CME and other exchanges for both repo and securities lending, are of interest to many participants. However, other regulations also affect these areas. For example, for repo and securities lending, the Financial Stability Board framework to standardise repo haircuts is yet to be fully implemented, as are the shadow banking requirements. The Securities Financing Transaction Regulation (SFTR), which is targeted at reforming shadow banking and improving transparency in securities finance transactions, creates additional reporting requirements to a trade repository. In addition, the SFTR mandates holding requirements for at least five years and reuse restrictions that reach beyond the scope of just the EU.

The European Market Infrastructure Regulation introduced reporting requirements and mandated clearing of swaps on central counterparties and the second Markets in Financial Instruments

Directive (MiFID) creates new trading venues with obligations coming into effect from 2017. MiFID II and Packaged Retail and Insurance-based Investment Products Regulation will require increased disclosure relating to costs.

The complexity of the regulations across all areas of the business, combined with the jurisdictional variations, is causing buy- and sell-side organisations to rethink their operational processes, review their counterparty trading activity, and evaluate compliance implications. The clearing fragmentation reduces the advantages of calculating margin across a multi-asset portfolio, especially in the US where there are a variety of different accounts depending on whether they are for security, non-security, futures or swaps. Differing rules for US and European participants relating to segregation criteria adds to the complexity as organisations strive to manage costs effectively while attempting to provide a service to their end users.

Although many organisations continue to operate their collateral management functions in silos for multiple reasons, including legacy infrastructure and resource allocations, there now appears to be a drive toward a more streamlined approach as institutions look to reduce operational and technical overheads, automate internal processes and benefit from connectivity with external providers. The long standing debate over build versus buy appears to have lost impetus as organisations recognise the burden of attempting to keep pace with dynamic nature of regulatory changes.

Financial entities of all sizes are now looking for options to assist them with meeting the compliance criteria, coping with increased volumes and minimising trading costs. The increase in margin volumes as firms deal with both legacy and new regulatory agreements, and the additional initial margin required by central securities depositories, mean that many organisations may now have to manage four agreements (with clearing) rather than one for each relationship. The repapering challenge alone means many organisations may not be fully prepared for the deadlines.

The costs of assets considered eligible for collateral are likely to increase significantly due to an increase in demand. This in turn causes other issues, such as increased settlement risk due to the additional volumes and potentially puts pressure on organisations to additionally manage liquidity buffers. Managing the intra-day exposures and related settlements only increases existing funding pressures particularly in times of stressed markets. Firms need to review and understand costs for each product and look to streamline where possible. Sell-side organisations will look towards how those costs are provided to clients as they demand increased transparency.

In Europe, the additional concentration limit and wrong-way risk rules create added complexity for those looking to use alternatives to cash. The need for system enhancements, whether in-house or vendor provider, to be delivered within a short timeframe has created further burdens that may prove onerous to some of the smaller players.

Segregated custody accounts for uncleared margin are now being required in relation to initial margin and both principal and counterparties need to be able to send required value notifications for matching and validation to triparty agents as opposed to just the exposure and margin requirements. Limit rules mean that connectivity to multiple custodians may be required. This in turn creates additional costs and fragmentation as organisations attempt to record what they hold and where.

Operational risk increases with the rise in expected substitutions as the margin volumes and reasons for potential ineligibility grow. Ineligibility reasons, tracking of substitutions and associated settlements add further pressure on resources as does the expected increase in dispute tracking as a result of differing variation and initial margin exposure calculations.

The new proposals currently being developed for risk exposure measurement will have far reaching implications on current processes and result in increased demands in terms of the systems required to calculate exposures and the amount of capital needed to be held. As a result, technology will remain at the forefront of financial institutions focus for the foreseeable future and investment in both people and platforms will be vital. Solutions need to cover all instruments and enable holistic management across regions and business lines for both cleared and uncleared products—with the flexibility to be offered as an installed platform at a client site or in the cloud.

Those that lead and innovate will strive to provide competitive advantage and agility while others will be content to follow the market. Increasing focus will be on resilience and connectivity, automation and scalability across platforms. The spotlight will be on utilities and their proposed offerings and ability to keep pace as the market evolves—as will the big data and blockchain activities. What is certain is that the collateral landscape will change dramatically over the coming months. **SLT**

"Those that lead and innovate will strive to provide competitive advantage and agility while others will be content to follow the market"

Helen Nicol, Global product director—Colline, Lombard Risk

Giving stock loan a home

Scot Warren outlines where OCC is taking its stock loan programme next, with collateral optimisation for all participants high on the agenda

As we move into the second half of 2016, expanding OCC's centrally cleared model for securities lending remains a high priority for the world's largest equity derivatives clearing organisation.

Our prioritisation is driven by the growing number of market participants that are looking at how a central counterparty (CCP) solution can enhance securities finance transaction (SFT) activity for beneficial owners, the agent lenders they work with, and the broker-dealer borrowers.

There are several factors pushing for a centrally cleared solution. There is growing consensus today regarding the resource and risk management benefits of cleared activity with regard to balance sheet utilisation, regulatory capital, and counterparty credit risk. Market participants from the sell side and buy side have additional clarity on the new regulatory environment. Incentives on both sides are more aligned than ever as the evolving regulatory and capital requirements become clearer.

As a result, there is an evolving ecosystem for SFTs. The evolution is designed to preserve existing relationships and minimise changes to workflows. Similar to the bilateral model, the design will allow agent lenders to both manage lending and cash reinvestment activity on their clients' behalf, while the CCP provides risk management and ensures performance.

There is a compelling alignment of interests. For broker-dealers, there is the benefit of regulatory capital efficiencies. There is greater operational efficiency through a centralised mark-to-market process and potential margin offsets with other cleared activity, along with simplified credit risk management. For agent lenders and beneficial owners, the value of a CCP model for SFTs is that there is a highly rated counterparty that provides risk management and insures performance. The capital efficiencies being provided to their counterparties helps to optimise pricing.

Regulatory change is creating a tailwind for cleared solutions, resulting in demand for CCPs to expand the solutions they provide to the market. As new regulations create a more resilient financial services industry, they have also introduced higher capital requirements that affect costs for bank-owned broker-dealers. As a result, OCC's securities lending programme, which is the only US CCP to provide clearing services to stock loan participants, has evolved to focus on delivering capital and credit efficiencies and growing and expanding participation.

Clearing volume at OCC for securities lending increased 16 percent in 2015 with notional value growth up more than 1,100 percent since 2011. In July 2016, OCC's securities lending CCP activity increased 24 percent in new loans from July 2015 with nearly 144,000 transactions. Year-to-date stock loan activity at OCC is up 41 percent from 2015 with nearly 1.1 million new transactions. The average daily loan value cleared by OCC in July 2016 was over $149 billion.

The opportunity for credit, capital and collateral efficiencies makes OCC's securities lending programme a compelling value proposition for market participants. We are working with an industry coalition to refine the collateral model to allow for expanded participation in our clearing solution, and we are building the processing and operational framework that the market needs to function so we can have the technological, risk management, and regulatory framework to support it.

As securities lending remains a high priority for OCC, we intend to continue working in a very collaborative fashion with the industry to determine the future direction of cleared stock loan. **SLT**

“Regulatory change is creating a tailwind for cleared solutions, resulting in demand for CCPs to expand the solutions they provide”

Scot Warren, Chief administrative officer
OCC

A path to greater capital efficiency

Eurex Clearing's new solution promises higher capital efficiencies with derivatives and securities finance transactions, says Matthias Graulich

Capital efficiency is now at the top of the agenda for clearing firms and their clients as a result of Basel III and other changes in the regulatory environment. How is Eurex Clearing responding to this need?

Our industry is facing many challenges. There is increasing regulatory pressure and uncertainty on client clearing on multiple fronts, from Basel III to the European Market Infrastructure Regulation (EMIR) and Markets in Financial Instruments Directive (MiFID) II. Overall we are seeing an increase in capital requirements and the demand for collateral, while at the same time the supply of collateral is tightening and the need for clearing is rising. Eurex Clearing's objective is to help clients address these challenges by offering solutions and services to mitigate these regulatory impacts.

Our integrated central counterparty (CCP) model allows for capital, margin and collateral efficiencies while at the same time offering superior client protection and a solid default management process. By offering solutions such as cross margining through Eurex Clearing Prisma across listed and over-the-counter (OTC) derivatives, we provide the tools for our clients to optimise their margin requirements. Our latest solution is ISA Direct, which provides direct access to the CCP for buy-side clients. It allows for higher capital efficiencies with both derivatives and securities finance transactions, while increasing the safety and integrity of the market by reducing concentration risks, increasing asset protection, and improving likelihood for portability. We are currently working with clients in a pilot phase and the full service will launch this summer.

Eurex Clearing now offers portfolio margining for interest rate futures and swaps through Eurex Clearing Prisma. What types of members and clients are most likely to benefit from this service?

Sell-side and buy-side clients alike can benefit from cross margining at Eurex Clearing. Eurex Clearing Prisma permits cross margining between products as well as across markets. Prisma calculates risk and margin on a portfolio basis segmented by pre-defined liquidation groups, each comprising closely correlated products. Our default management process, by the way, is also aligned to these product groups. Since February, our Italian and Spanish interest rate derivatives (FBTS, FBTM, FBTP and FBON) are part of the cross-margining optimiser, giving our members a broader exchange-traded derivatives product range in order to offset OTC exposure to reduce their initial margin requirements. Of course, clients with offsetting positions in listed and OTC derivatives, such as firms running relative value strategies or those using futures to hedge or warehouse their OTC exposures, benefit the most. However, all clients benefit from a single risk management approach across all derivatives products, with payment netting across all cleared products.

Overall, I believe that the full potential for cross-product margining, including listed, OTC and hybrid products such as the deliverable swap future, will unfold in the coming 12 to 24 months as banks become more accustomed to using the full suite of derivatives products more flexibly to manage their risks.

Eurex Clearing is introducing a new account structure called ISA Direct. How does this differ from existing models for clearinghouse membership?

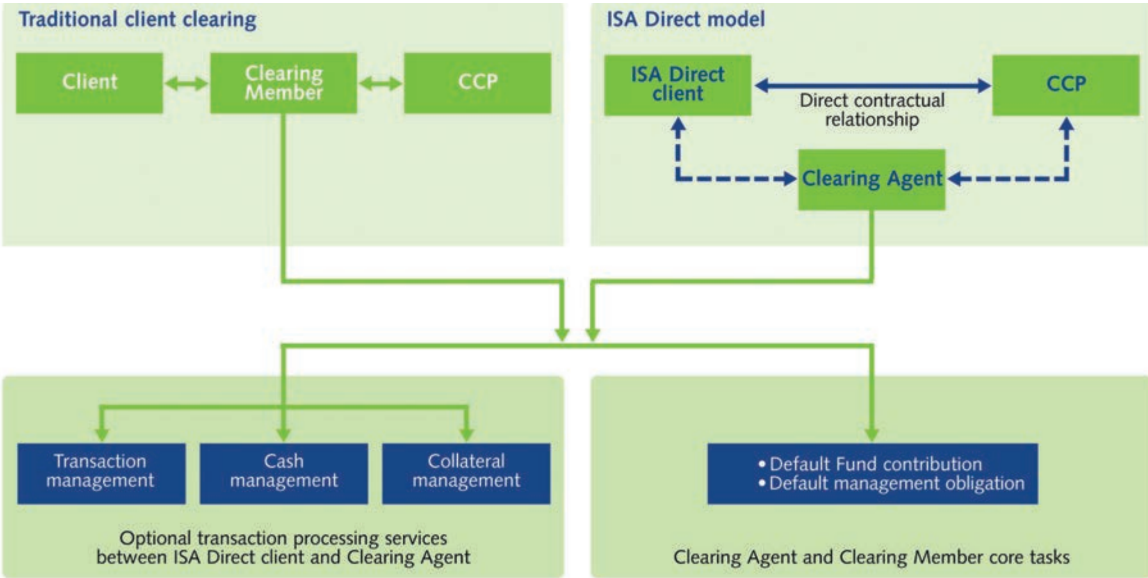
This type of account structure combines elements of a direct clearing membership and the traditional service relationship in client clearing. Our regular clearing members will continue to act as a clearing agent, providing a variety of mandatory and optional service functions, but the client becomes a direct member of the clearinghouse. We think this will reduce the impact of the Basel III capital requirements on the cost of clearing and expand access to clearing for buy-side firms such as fund managers and insurance companies.

What are the main benefits for clients?

One important benefit is that this model will enhance portability. In other words, it will be easier for clients to move their positions and assets from one clearing firm to another. This is especially important given the declining number of firms that are willing to provide clearing services. Another important benefit is cost.

We expect that this account structure will reduce the capital requirements for banks that provide clearing services, and that will enable the banks to offer better terms to their clients.

There is also a benefit in collateral management. Once a client becomes a member of Eurex Clearing, it will be able to take advantage of the integration between our clearinghouse and Clearstream. For



example, an asset manager with an ISA Direct account will be able to use our Repo and GC pooling services.

What types of products will be clearable through ISA Direct accounts, and what types of clients do you expect to use this type of account?

When we launch this summer, we will limit the product range to interest rate swaps and repo transactions. Our view is that this is where the potential demand for direct access is especially urgent. But we plan to extend the new account structure over time to all asset classes that we clear, including listed futures and options. We mainly expect insurance companies, pension funds, investment funds and other financial institutions to show the most interest. Another group of potential clients would be banks that are not clearing members and need to clear their derivatives trades. I should caution that firms must be domiciled in the EU or Switzerland in order to become an ISA Direct client.

What responsibilities will clients have if they become direct members of Eurex Clearing?

They will be responsible for meeting margin requirements by posting collateral under the same conditions and deadlines as with our other account structures. They can opt to do this themselves, or rely on their clearing member to handle this on their behalf. That is up to each ISA Direct client to decide in negotiation with its clearing firm.

They will not be responsible, however, for contributions to the Eurex Clearing default fund or any of the functions that clearing members must undertake whenever there is a default. For example, an ISA Direct client will not be required to participate in an auction for the assets of a defaulted member.

What will be the role of the clearing member in this type of account structure?

In some ways, the role is not that different from the traditional role. The clearing member covers the default fund contribution and the default management obligation for its clients. The clearing member also handles certain operational and financing functions for its clients, such as cash management and the movement of collateral, if the client decides to delegate those functions to its clearing firm.

What is different is that the client has a direct contractual relationship with Eurex Clearing and maintains legal and beneficial ownership of all collateral. **SLT**

> ***They will not be responsible for contributions to the Eurex Clearing default fund or any of the functions that clearing members must undertake whenever there is a default***

Matthias Graulich, Chief strategy officer and member of the executive board and head of cross-market strategy, Deutsche Börse Group

Confessions of a self-confessed technophobe

Flexibility and choice remain at the heart of a combined offering, according to Karl Wyborn of CloudMargin

I'm a self-confessed technophobe. Whether it be at home or at work, I've managed to steer well clear of anything that looks like modern technology. Not, I should add, because I fear new technology, rather because I like what I know and it always seems such a faff to learn something new. To live in blissful ignorance has historically been tough in the home but much easier in the workplace.

At home, little by little, modern technology has crept in. To the point now where my fridge 'talks' to my computer, I can turn the heating on from 20 miles away and from my iPhone, not only can I turn music on in any room, I can also check if anyone is strolling around the house on CCTV. The contrast between this and my work life is stark. In the 20 years that I spent in an investment bank, very little changed. I began using very clunky mainframe-based technology in various operational roles and, two decades later, ended up selling solutions to institutions that were based on the very same, clunky old system I was using a decade earlier.

Many of my core beliefs about technology were formed during this period. I came to learn that the cost of maintaining IT platforms was eye wateringly expensive and time consuming. Worse still, the thought of changing these platforms brought many out in cold sweats. Three-year, $5 million projects would rapidly 'evolve' into five-year projects costing multiples of the original estimate. It's perhaps not unsurprising that, given this inflexibility, the reliance on manual processing was significant. Ultimately, it was easier and cheaper to use Excel.

All this said, we were no different to any other bank. All were struggling to keep up as markets were developing so quickly. We all accepted this IT mess and tried to ameliorate the situation through increased expenditure. Increased profits made this a very easy decision, along with the absence of any alternative solutions. This merry-go-round of significant expense for marginal gains became standard operational procedure for the industry at large.

Two years ago, I left banking and joined a financial technology company. I was asked to join as I knew the 'domain' well. As a technophobe (a topic we covered in the interview for the position), it was safe to say that I was perhaps not the best positioned to promote the advantages of the cloud. Fast forward to the present day and I can honestly say that the past 24 months have been the biggest learning experience of my professional career.

Getting to grips with the (cloud-based) nature of innovative solutions was relatively simple. A lot of jargon I'd heard for many years was suddenly becoming clearer. What took longer was really understanding the philosophy that sits behind software as a service (SaaS). This involved challenging all my preconceived ideas about technology.

For those that haven't been on this 'journey', I will simply summarise this concept as: the desire to fundamentally change how companies implement and support their IT infrastructure and, by doing so, provide enormous efficiencies and competitive advantage to those institutions adopting this new model.

The learning doesn't stop there, however. It really gets interesting when you take this message on the road. I had assumed that the objections to cloud-based solutions would be either security concerns or the challenges we faced from heads of technology as they try to protect their fiefdoms. How wrong I was. It was clear from my first few conversations that many of even the largest buy-side and sell-side side institutions are embracing cloud-based services. Sure, they have questions around security. These are reasonable. They expect their cloud-based providers to meet the same exact standards that they would impose upon themselves. With this confirmed … no problem.

As for the heads of IT, they are the ones tasked with achieving the impossible. They are being asked to significantly improve systems whilst at the same time radically cutting costs. These IT folk require the equivalent of modern-day alchemy. Cloud computing along with a series of other modern technologies may just be able to achieve this. Again, from the outset, I often found myself pushing an open door.

Sounds simple… not so quickly. Not everyone has got cloud religion quite yet. It seems (not dissimilar to myself two years ago), for those who are not versed in the benefits of this new technology, there remains a certain scepticism. Before we analyse this, I think it makes sense to analyse what these benefits are. In the context of SaaS, at least, this means sophisticated, secure and functionally rich platforms that can be implemented in weeks, not months (or years). Platforms that cost a small fraction of their locally installed or developed equivalents. Solutions where all users are on the most up-to-date version, with new functionality released on a weekly basis. And finally, platforms that talk to each other, or, if they don't, platforms that can be made to talk to each other with a few days or weeks of development only. As our American brethren say, what's not to like?

Why, therefore, do certain constituencies remain sceptical? One key element is that it all sounds too good to be true, especially for those companies that have been relying on antiquated technology for years. Secondly, there's an element of 'giving away control' where ownership of the platform no longer resides with the institution using it. And finally, and we have to be honest about this, the young financial technology startups that promote this brave new world are exactly that—young and start-ups. They'll struggle to provide 10 years of fully audited accounts as a rule. None of these concerns are unjustifiable. And yet, as time passes, and cloud-based solutions become more ubiquitous, even these concerns are being voiced less.

In summary, fintech and the emergence of SaaS solutions is coming of age. This is reflected in both the length of time that some of these 'new' companies have been in existence and the sheer number of institutions that have migrated to the cloud in one form or another. One need only go to the websites of some well-known cloud providers to see the sheer number and nature of their users.

In perhaps more formal terms, adding an historical perspective, what I'm saying is many heads of IT and their business sponsors are confronted today with the options of 'build, buy or partner'. Looking at each in turn: build has become the expensive option and business sponsors are increasingly unlikely to give IT an 'open cheque book'; build has been the popular option in recent years, but as large enterprise software companies consolidate and 'manage' their clients rather than innovate, these solutions too have become expensive both in terms of time and budget; and partner is, in effect, the cloud. These best-of-breed solutions are open and highly connected. They represent an entirely natural evolution, particularly in today's business world where connectivity, speed of deployment and cost effectiveness have become a virtual mantra.

In the context of the financial services industry, the success of the cloud is a function of the symbiosis between the push coming from the application of new technologies and the pull from an industry sorely in need of a solution for an age-old problem. Better still, the future looks rosier still, where a number of cloud solution providers are joining forces to create a fabric of best-of-breed solutions, all of which interoperate but are provided in such a way as to ensure that flexibility and choice remain at the heart of the combined offering. And, before you ask, I know that sounds too good to be true as well. **SLT**

"The success of the cloud is a function of the symbiosis between the push coming from the application of new technologies and the pull from an industry sorely in need of a solution for an age-old problem"

Karl Wyborn, Global head of sales
CloudMargin

Collateral RFPs: 14 points to consider

Martin Seagroatt and Jonathan Cooper of Broadridge provide a 14-point checklist for choosing the right collateral management system

So what happens when a firm realises they need to invest in a new collateral management system? Either they have an outdated collateral management system that is unable to meet their needs or they are still using manual methods (speadsheets, emails and even paper ticket) that cannot scale.

New regulations, increased focus on labour costs and a continuing effort to squeeze the best economics out of collateral have forced many companies to consider buying a collateral management system from solution providers such as Broadridge.

Selecting a new collateral management system is not an easy decision. How do you differentiate the vendor systems (and vendors) out in the marketplace? What about buy versus build? The weight of the regulatory burden has made it more onerous and expensive to keep in house systems up to date. This is therefore shifting the market towards buying rather than building.

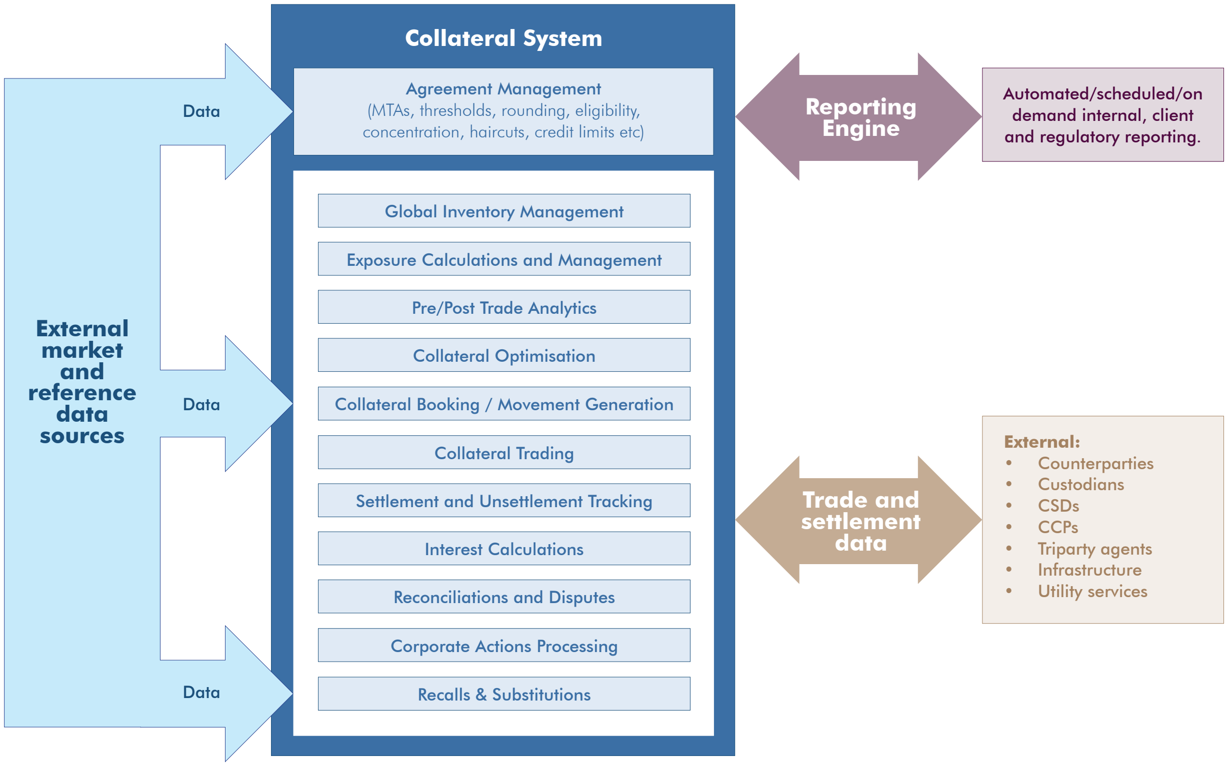
Many institutions are now coming to the conclusion that the costs and resourcing demands entailed by regulatory compliance are best shared across multiple clients of a vendor that can manage these wide ranging step changes on their behalf.

Request for proposal

However, not all vendors are created equally. Functionality may sound alike, but is it really? Enter the request for proposal (RFP). This is the document sent to potential collateral management solution providers to determine if their system does what you need it to do.

Will it manage cleared and non-cleared derivatives? What about repo and securities lending exposure? Can it handle multiple agreements across currencies with the same counterparty? What about vendor risk? Who does the implementation? What will it cost?

Figure 1: Typical Collateral System Functional Areas



Creating an RFP can be tricky. While RFPs may look alike, they need to reflect the firm's needs and priorities. Where to start?

The following checklist provides some ideas around how to create an RFP that will allow you to compare 'apples with apples' and avoid some of the common pitfalls that make the process of vendor selection more time consuming than it needs to be:

ONE Define your operating model. Is this a front office function, operations or both? Is this an opportunity to pivot internally?

TWO Decide which functional areas are important to you—this can differ widely for different types of firms. Figure 1 shows a map of some of the generic, high-level functional areas supported by collateral systems. While it can be tempting to include everything, particularly whatever functionality is mooted as 'the next big thing', try to work out what will actually benefit your business model. For example, a mid-sized buy-side firm may get enough benefit from basic single 'cheapest to deliver' collateral optimisation tools rather than implementing complex bespoke optimisation algorithms.

THREE Work out what is realistic within your timeframes—if regulatory compliance is important by a hard deadline, then getting a vanilla system in place can be a good move. You can then build it out with more advanced functionality and customisation using a phased approach following initial compliance with mandatory regulatory deadlines.

FOUR But—think strategically—avoid tactical solutions with multiple systems bolted together if you can. Try to evaluate your long-term vision and goals around what your collateral operating model should look like. Then select a vendor that can offer a future proofed solution.

FIVE Decide on the product scope of your system. Are you looking for an enterprise-wide, cross-product solution to manage inventory and exposures for securities lending, repo and derivatives in a single system? Or will it be a more siloed system that simply manages collateral for one or two business lines? Different vendors have varying advantages in this respect, particularly around the complexities of margining securities finance transactions and managing non-cash collateral.

SIX Consider running a shorter RFP first to filter down vendors. With a recent increase in collateral vendors entering the market, this allows you to narrow the shortlist down to four or five key vendors. This in turn can save time reading through lengthy RFP responses from many vendors.

SEVEN Keep it simple—too much information can be confusing. Write your RFP in a way that allows you to make it easy to compare vendors and that matches your actual requirements.

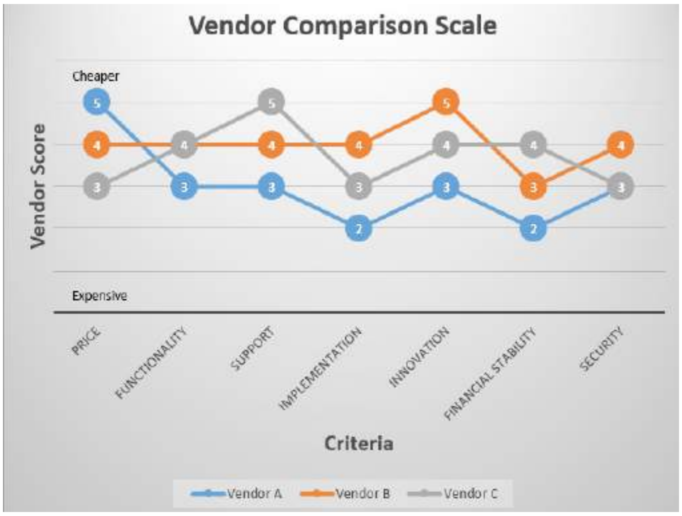
EIGHT Is it worth using a scoring mechanism that allows you to objectively compare vendors? One way to do this is to:

- Split functionality into mandatory versus 'nice to have/optional' and weight the scoring accordingly.
- Use a five-point scoring mechanism for whether the vendor offers the functionality: (i) In live use at a client; (ii) requires minor customisation; (ii) is on the vendor's product roadmap; (iv) requires significant bespoke gap development; (v) the vendor does not and will never support the functionality.

NINE Try to avoid asking multiple questions within one question. Often that makes it hard for you to break down whether the vendor supports your requirement or not.

TEN Don't be afraid to encourage comments. It allows the vendor to go off script a bit but some questions simply aren't 'yes' or 'no'.

Figure 2: Example of a Vendor Comparison Scale (Note: in this rating scale, a high score for price means a cheaper solution/lower cost of acquisition)



ELEVEN Think about integration points—as the collateral ecosystem becomes more integrated there are more touch points with, for example, triparty agents, central counterparties (CCPs), market utilities used for messaging or margin reconciliation, and custodians/central securities depositories (CSDs). Don't neglect feeding to/from internal systems, including books and records, exposures, legal agreements, settlements, compliance, risk and others.

TWELVE Try to focus on a holistic view of a vendor based on your unique requirements rather than just functionality. This can include:

- Does the vendor have a global footprint? With collateral management now a mission-critical activity, can they offer 24/7 'follow the sun' support in the event of a major issue?
- How many similar projects has the vendor implemented in the past? Do they have a mature project management methodology with lessons learned from past projects?
- Does the vendor have a strong research and development and regulatory monitoring capability? This is particularly important in the current environment. Vendors are no longer just technology partners but are also expected to offer a consultative approach to adapting to new regulations as a value-added service. Evaluating the quality of a vendor's thought leadership content can provide a good way to check this.
- Can the vendor build out new functionality quickly? How willing is the vendor to customise? In terms of the vendor's client base, will you be a small fish in a big pond or a large fish in a small pond, or somewhere in the middle?
- Does the technology provider have staff with the expertise and experience to understand your business?
- With information security and cyber-security a key issue, does the vendor have strong procedures in place, including an externally audited information security policy?
- Bear in mind that some smaller vendors may not have reached a level of maturity as an organisation to tick the boxes of information security policies, global support and financial stability to support a mission critical activity such as collateral management.
- Quantifying and visualising your data can help to make sense of the different vendor strengths and weaknesses. Figure 2 shows how three hypothetical vendors could score on different criteria. Visualising the data can help you to spot trends you may have missed when looking at raw data in a table.

THIRTEEN Think about hosted versus systems that reside within the firewalls. This is not just about ease of upgrades and maintenance but has a profound impact on security. Organisations will answer the question differently depending on their needs and objectives.

FOURTEEN Finally, remember it is during the demo where you will really get a feeling for the vendor. The RFP should be used as an initial guide, where if you have non-negotiable requirements you can strike vendors off your shortlist.

However, elements such as system look and feel/usability can only be established during a product demonstration. Demos also allow you to get a feel for whether you can see yourself establishing a personal rapport and trust with the vendor.

Selecting a vendor will always entail risks due to the complexity of the collateral management process and the level of information asymmetry between the customer and the vendor.

With tight regulatory deadlines and the now critical importance of collateral management, choosing the wrong system can have a significant impact on business performance.

However, having a clear definition of your firm's requirements and then running a well-thought-out RFP and selection process can mitigate a lot of these risks.

It is worth remembering that many collateral management vendors now offer a consultative approach to software sales and can help with defining operating models and system requirements. Engaging with them early on in the process can provide many benefits. **SLT**

Martin Seagroatt
Director, securities financing and collateral management marketing
Broadridge

Jonathan Cooper
Director, sales
Broadridge

The end game

The ability to see all the moving parts within each business, and across the firm as a whole, is critical to success, says Laura Allen of Trading Apps

The optimisation of inventory, liquidity access build-out, and the control of operational costs are at the forefront of everyone's agenda. For banks and other market players, the internal challenges are vast. For these new objectives to be met there is a requirement for an internal business model restructuring and technology build which is typically outsourced.

Optimisation of any sort isn't achievable without complete inventory management. If your total inventory isn't visible, you can't optimise it.

The cost and availability of collateral is driving firms to question where the inventory optimisation function should reside. Is it the securities finance desk, which undoubtedly has the expertise and market knowledge surrounding collateral financing rates, but doesn't necessary have the overall view of the firm's inventory and margin obligations? Is it better managed at an individual business level, each of which has to work to a prescribed model bespoke to each firm? Or is treasury best placed, given its understanding of the firm's liquidity and regulatory reporting obligations? Whoever is tasked with inventory optimisation will need to understand the capital footprint of the firm, and to achieve this they need software to provide them with a consolidated inventory view.

The buzz topic of collateral optimisation isn't achievable without a complete view on inventory. An evolution in collateral management from a cost centre to a profit centre is occurring on both borrower and lender side, and firms need to focus on improving the accuracy and financial efficiency of their total inventory. Trading Apps offers solutions that can interact with multiple legacy systems creating a centralised view of inventory allowing traders to make informed to-the-minute decisions.

Agent lending models have historically benefited from having a single pool of assets made up from a large number of clients, enabling standardisation of operational models and achieving economies of scale. But this model is facing several challenges, managers are now calling for the segregation of their assets and capital charges are being applied—which leads to disparity in the cost to lend—and fair allocation models are no longer viable. Some traditional providers may find that their technology stack is not capable of servicing their clients' changing needs.

With this in mind, lenders as a whole require the ability to view lending pools at a granular level: visibility over collateral schedules; efficient collateral allocation models; clear hurdle rates, including cost of trade attribution such as indemnification and capital usage; and extending relationships with service providers such as tripárty agents and central counterparties (CCPs) to ensure retention and growth of market share. For many, this will require a new business model and the need for innovative technology solutions.

For borrowers the focus is on return-on-equity, increasing profits and reducing capital consumption. To achieve this, borrowers require technology and tools to centralise inventory, calculate exposures, allocate a cost to collateral buckets, understand collateral eligibility and consider the content of legal agreements.

There has been an increase in buy-side activity. Firms that have traditionally been collateral takers are now becoming collateral providers, mobilising long assets through platforms such as Clearstreams' Global Liquidity Hub to meet the margin obligations of their derivatives business.

For the market to support the continued increase in volumes, collateral verification, eligibility and allocation is going to have to be automated. Participants will need seamless software connectivity to external platforms such as CCPs and liquidity hubs. Trading Apps recognises the need for this inter-connectivity and has established close links with market platform providers to provide this to our clients.

The ability to view and mobilise inventory across regions and jurisdictions, and to manage multi-depots, is now the focus of market participants' technology requirements. The ability to gather, analyse and interpret data will become increasingly important—that's why at Trading Apps, we put a strong emphasis on delivery data analysis competencies, giving users full transparency.

> ***The ability to view and mobilise inventory across regions and jurisdictions, and to manage multi-depots, is now the focus***

Laura Allen, Director of sales for the UK and Europe
Trading Apps

In order to take advantage of the full dynamic of the market, technology should allow simulation scenarios considering, for instance, compatibility of incoming portfolios or assets to obligations, or potential credit rating changes to assess the full impact on the inventory pool. Trading Apps technology can provide this with its 'what if' functionality, which allows users to measure the impact of market or inventory changes on their book, affording them the advantage of being a first mover within the market.

The securities lending model will continue to be challenged and investment in technology will continue to grow, but for all market participants inventory optimisation should aim to fulfil prudential liquidity management, regulatory compliance and profitability requirements. This can only be achieved through technology. **SLT**

The future's bright

The economic environment, regulatory pressures and technological advances are creating entirely new opportunities for the industry, says Bimal Kadikar of Transcend Street Solutions

The securities finance industry is going through a major evolution, driven primarily by regulatory and economic forces. A vast amount of literature and research has been published about the size and impact of these forces, and they are finally beginning to take shape. These changes are causing an increase in the demand of collateral and, at the same time, decrease in supply of high quality collateral. It is important to use collateral strategically, as a misaligned source and use of collateral may result in a significant capital impact due to liquidity coverage ratio (LCR) regulations. These dynamics are changing some of the most well established principles in the industry and creating some unique opportunities.

It is clear that this transition has already begun and many firms, either individually or with the help of consulting advisers, are busy identifying the appropriate target operating model. This operating model needs to address some critical questions and considerations. Given the significant rise of collateral requirement for initial and variation margin for cleared and uncleared businesses, it is imperative that collateral needs to be optimised. Should margin operations take on the challenge of optimisation or do they need to leverage front-office expertise to manage this process? Regardless of the operating model of choice, it is clear that securities lending and repo businesses will need to have a much tighter coordination with OTC and other margin operations functions.

Similarly, how should equities and fixed income funding businesses manage liquidity and coordinate with treasury and regulatory functions? New liquidity regulations such as the LCR and net stable funding ratio (NSFR) are very specific about how they treat various sources and uses and their term structure of liquidity in capital calculations. If these functions did not coordinate liquidity management and analytics, they would have significant punitive impact on capital.

In addition, new regulatory guidelines for recovery and resolution planning such as SR 14-1 also mandate specific capabilities for collateral and liquidity management. So, collateral and liquidity can no longer be managed in silos and firms need to have a broader and more comprehensive approach.

This sentiment is echoed in various industry conferences and events and most will agree that securities lending, repo trading, and traditional collateral management functions are evolving into a 'collateral and liquidity trading' function. Many firms are making organisational changes to support this evolution. Some firms have made ambitious moves and created one large organisation that manages all collateral and liquidity trading activities under one unit, whereas others have taken baby steps to make progress in this direction. This will probably go on for some time before it settles into a consistent organisation construct across the industry.

Organisational changes start to align incentives and priorities, but the key challenge is to align business, operational and technology capabilities across business silos to take advantage of the new organisation structure. Just like any other major change in the industry, there will be winners and there will be losers. It is clear that firms that embrace this change and adopt a strategic approach in managing their collateral and liquidity trading from business, technology, and operations perspective will have an edge over competition.

Currently, most firms have dedicated technology and operational capabilities for specific silos such as securities lending, repos, margin operations, treasury, and regulatory areas. There is some coordination of data and analytics across silos, but for the most part they operate on their own individual platforms. This is a huge challenge for firms to figure out how to develop a business and technology architecture for the new paradigm.

Some firms look for specific connectivity that needs to be built across units and address those requirements as per business priorities and pressures. This may seem like a practical approach but the key challenge is that, over time, firms will end up with a chaotic architecture that will be very difficult to manage, maintain, and modify.

In a slightly different approach, some firms are looking to identity an existing system and make it as an anchor platform that can be used by other areas. This approach will end up with a better architecture but is very difficult to execute. The typical technology platform for this industry is at least a decade old, and the number of changes that need to be implemented can overwhelm the technology and project delivery capabilities. Most firms are not yet comfortable with the thought of an uber monolithic platform that can serve the need of all business units in a meaningful way.

However, there is an alternative. At Transcend Street, we have focused on developing a strategic approach and technology that is specifically designed to support businesses through this evolution. Our approach is a thoughtful integration of existing systems, while providing new capabilities through state of the art technology developed for the new paradigm. Our technology fits into an existing business enterprise and does not mandate any major retirement

or reengineering efforts for current platforms. This enables firms to leverage their current investments for the purpose they serve, but also develop next-generation capabilities in a smart and more predictable manner.

We see a three step process in building next-generation collateral and liquidity data management to support requirements across business areas. The first step is to focus on the biggest challenge in this space—data. We have developed targeted business models of data focused on the new reality, but which also leverage some of the new generation technologies to ensure easy extension and flexibility. The main focus is harmonisation and integrity of the data such as collateral agreements, trades, positions, settlement ladders, margin and exposure data, reference data for securities, accounts, legal entities, market data, and so on.

The second part is analytics and decision support services that operate on this data. This is how data is turned into information. Decision support is where a collateral substitution or optimisation process can result in quantifiable cost savings or new opportunities.

The third, and most visible part, is the rich user dashboards. Our dashboards bring information to users in a business friendly and actionable way. In addition, allowing users to control how decision support services should operate really drives the evolution of data into information and then into action. Our primary goal is to provide a powerful technology platform and give users control via our dashboards.

This approach, coupled with next generation functional capabilities provided by CoSMOS, unlocks a massive opportunity for firms as they navigate through this evolution. CoSMOS provides several functional modules

Agreement Insight: This module allows firms to bring various collateral agreements together and harmonises them such that they can be evaluated consistently across business areas. Agreement Insight can connect to repositories of agreement data, external third parties such as triparty agents, as well as allow agreements to be captured and managed on the system. This module provides a key capability in meeting SR 14-1 compliance requirements for agreements.

Real-time Inventory/Position Management: CoSMOS connects to internal systems in front and back offices. It also has external settlement platforms to provide a real-time view of inventory as well as collateral across the enterprise with detailed traceability of transactions. This module allows users to identify exact collateral location, its liquidity and trading profile, ownership, and pace of movement through settlement ladders—all in real-time. This module is a critical component of the SR 14-1 requirement for visibility of collateral across the firm.

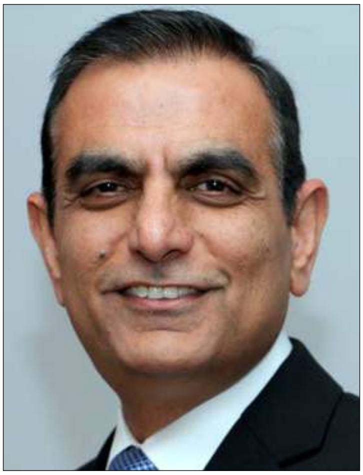
Margin Dashboard: Most firms have multiple margin centre such as over-the-counter (OTC) derivatives and repos. These margin centre can be a significant source and/or users of collateral in the firm and in most places they are buried in back-office infrastructure. CoSMOS margin dashboard connects operational margin infrastructure to the front-office collateral traders to plan and execute optimal collateral decisions.

Collateral Optimisation: The CoSMOS optimisation module provides the ability for businesses to optimally allocate collateral across businesses and functions. Sophisticated optimisation algorithms allow firms to leverage unique solutions from CoSMOS for optimisation decisions. Optimiser is then integrated with the appropriate processing platforms for straight-through operational capabilities. Firms also have flexibility to choose their own algorithms and integrate with the platform to leverage and the rest of data, analytics and straight-through processing capabilities.

Liquidity Analytics: CoSMOS provides many ways to manage and measure liquidity analytics across the firm. A sophisticated and rules-based sources-and-uses engine is a critical backbone for many functions such as cost of funds, client profitability, term structure of funding, to name a few. This engine can be customised for firm-wide or business specific scope and can also provide a 'what if' scenario for firms to evaluate new client or firm portfolio and its impact on liquidity profile. Other metrics include client portfolio trends as well as triparty allocation efficiency analysis and planning. In addition, CoSMOS provides an easy and extendable architecture to build new metrics and dashboards very quickly for user reviews and adoptions.

These are exciting times as the economic environment, regulatory pressures and technological advances are creating entirely new opportunities for the industry. This is a big change and, like any large scale change, it needs to be navigated carefully. There will inevitably be winners and losers, but we strongly believe that an enterprise-wide collateral and liquidity management function to drive optimisation of cost and capital is a key differentiator in the new era. We will see a lot more integration and automation in the coming years across securities lending, repo, treasury, OTC derivatives and operations areas, and their silo-based systems will come under a lot of stress. Firms that embrace this change smartly and focus on developing a strategic operating environment with a sharp focus on execution will be clear winners. **SLT**

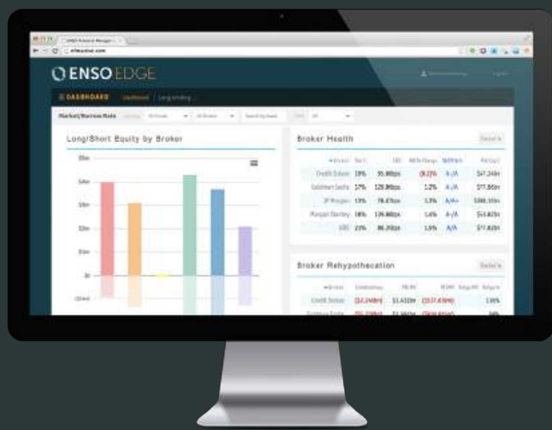
These are exciting times as the economic environment, regulatory pressures and technological advances are creating entirely new opportunities for the industry



Bimal Kadikar, Founder and CEO
Transcend Street Solutions

ENSO EDGE

ENSO Edge is the emerging manager offering built from the award-winning ENSO Core platform, providing scalable portfolio finance and treasury solutions to assist the daily operational needs of a growing manager.



"ENSO has helped us gain a holistic view of our exposure to the street and manage our financing relationships. As a growing manager, it is essential that we have the most developed and secure technology that the marketplace is using to validate our counterparty relationships and support investor due diligence." — Bocage Capital

- **Scalable treasury and work-flow tools to grow your business**
- **Evaluate and manage counterparty relationships**
- **Independently validate counterparty strengths with ENSO Broker Scorecards**
- **Support the investor due diligence process**
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Trickier trading

Firms that have moved towards automation for managing exposures are better placed to deal with changes in demand, says Duncan Carpenter of Pirum

Collateral management has been a hot topic for a while now and one that isn't going away anytime soon. It is a key area of securities finance programmes for all parties involved in the chain, starting with the beneficial owners all the way through to the hedge funds (not forgetting the lenders and borrowers in between).

With the multitude of regulations that have already arrived, and more due in the next few years, the costs associated with inefficient collateral and exposure management have only continued to increase. However, this also means the cost savings that can be obtained by optimising these processes has never been greater.

As market participants begin to review how they manage these processes today, technology platforms such as Pirum are a key tool that firms can utilise in order to realise efficiencies without having to utilise often scarce internal technology resources.

Regulation affecting collateral management

The increasing and ever evolving regulatory framework is continuing to shape not only how firms source, allocate and manage collateral, but further defining acceptable collateral parameters. There has also been a particular focus on the re-use of assets intertwined with enhanced disclosure, which is present in Article 15 of the Securities Financing Transaction Regulation (SFTR). The industry has worked hard on reviewing collateral arrangements and drafting disclosure documents to ensure compliance with the July 2016 implementation deadline.

The biggest hurdle that counterparties on either side of the trade will have to overcome relates to Article 4 and reporting. In the current level one text, firms are required to report both their SFTs and collateral, along with a collateral pool identifier included on both data sets to allow the regulators to tie back the collateral to the original SFTs.

The reporting of principal level collateral reporting and pooled collateral in particular would prove to be an extremely complex task resulting in huge volumes of data, particularly from the perspective of the borrowers that would be largely reliant on data received via the agency lending disclosure (ALD) process to which the borrower typically only has limited visibility. It remains to be seen how granular the collateral reporting requirement is once the level two text is released, given that the industry has voiced strong concerns on the practically of the task. There is help at hand as Pirum is already developing a robust reporting solution to minimise the operational burden for our clients.

Other regulations such as Basel III and the US Dodd-Frank Act are continuing to influence how both agent lenders and borrowers manage their balance sheets and the associated cost of capital when transacting a loan. The borrowers, already affected by the liquidity coverage ratio (LCR) and net stable funding ratio (NSFR), are encouraged to hold on to high-quality liquid assets (HQLAs), which are primarily government bonds and had previously formed a large part of the collateral pledged against SFTs.

This has resulted in borrowers favouring lenders that are able to offer more diverse collateral schedules and acceptance of other asset classes, in particular equities. This trend is expected to increase as additional provisions of Basel III are enforced, which will effectively discourage banks from having equities on their balance sheets.

On the lender side, Basel III will affect the way in which firms capitalise their borrower default indemnification, often provided

as a standard to their beneficial owners. As a byproduct, there will be more scrutiny on the collateral they accept in their programmes and how it affects the overall cost of their loans. This in turn is prompting discussions between agent lenders and beneficial owners about how they collateralise their loans, including the ways in which revenue generated is apportioned to both parties.

To this degree, balances can grow or shrink merely because of a borrower's collateral requirements. For beneficial owners, collateral is primarily a tool to manage risk, but if they are able to accept a more expansive range of collateral types, for example, equities, then they will increase their attractiveness to borrowers, maintain their on-loan balances and grow revenue, which is also the ultimate goal.

While the trend for non-cash collateral is continuing to grow is the US, cash collateral remains the king at the top of the pile and is likely to do so unless the long anticipated changes to Securities and Exchange Commission Rule 15c3-3 materialise, allowing broker-dealers to pledge equities as collateral when borrowing from clients.

These various collateral profile changes have amplified the demand for triparty collateral agents. However, managing these agents and their various intricacies can be time consuming, which is where the Pirum RQV service can add significant value, enabling both lenders and borrowers to ensure full and timely collateralisation of their loans and allow clients to focus on other primary business activities.

Automation: dealing with demands

As the industry adapts to these changes, which are increasing the complexity of collateral requirements and the costs associated with both pledging and receiving different asset classes, there is a greater need for automation in the collateral process.

For any firm to accurately assess its collateral needs, the starting point is to ensure it has a timely picture of its exposures to each of its counterparties. Previously, many firms would have run manual reports from their systems to retrieve their internal exposure numbers and then engage in a manual process of agreeing these with each counterparty over email and phone.

If the exposure numbers were disputed, this often meant the parties exchanging reports of their own positions and prices and asking the other side to manually compare the two information sets on a line-by-line basis.

These manual processes would have several impacts on the cost and efficiency of the whole process. Firstly, through simple human error, as with any manual process, the final agreed exposure number could be mistyped or incorrectly communicated to a triparty agent, resulting in the wrong amount of collateral being allocated to an account.

This could potentially be costly to the collateral giver, particularly if more collateral is utilised than was needed for the exposure in question, both through the cost associated with sourcing the additional collateral and the added capital cost attached to the collateral in excess of the actual exposure.

Secondly, the time consuming nature of the manual process meant that, often, the final exposure figures would not be agreed until much later in the day, affording those responsible for sourcing and allocating collateral to the accounts precious little time and reducing their ability to ensure the most cost-effective collateral is utilised.

Finally, the time associated with the overall process created a direct correlation between increased business and increased cost, with additional accounts requiring additional resource to be covered. This would potentially impact on the viability of some smaller accounts, where the cost to support them on a manual basis may have outweighed the potential revenue generated.

All of the above has driven the industry to look at automated, scalable solutions allowing them to manage an increasing number of separate exposures with the same resources. The ability for exposures to be compared and agreed automatically on a real-time basis, with exceptions automatically highlighted to both parties, is a key factor in reducing the time a firm spends simply trying to figure out its collateral requirements. This in turn allows the same firms to spend more time on the management of the collateral sourcing and allocation itself, allowing them to focus on utilising their collateral in the most efficient manner in terms of both cost of capital and cost to source.

The trend is already well developed in the market and when you add on the increased scrutiny that transactions reporting of SFTR will bring, particularly if the requirements of linking collateral back to the original SFTs are retained in the final text, the need to automate and streamline the process of exposure management will only increase. Those firms that have already moved towards automation in the way they manage exposures are much better placed to deal with the changes in demand in their collateral management programmes. **SLT**

> ***These various collateral profile changes have amplified the demand for triparty collateral agents***

Duncan Carpenter, Strategic product manager
Pirum Systems

The good fit enterprise

Technology vendors will increasingly be expected to leverage cross-asset, end-to-end processing, regulatory compliance and liquidity management capabilities in a single enterprise platform, says Etienne Ravex of Murex

Securities finance is at a turning point. The Basel Committee on Banking Supervision's liquidity coverage ratio (LCR) and net stable funding ratio (NSFR), the Dodd-Frank Act, European Market Infrastructure Regulation (EMIR), and uncleared margining are all examples of the complex regulations that have increased capital requirements, balance sheet consumption and the overall demand for collateral assets.

At the same time, an increase in the consumption of high-quality liquid assets (HQLAs) is significantly affecting the supply. Securities finance and treasury desks must act as business enablers to adapt to market conditions. To facilitate the access and the management of collateral assets across the enterprise, new operating models are being established. Financial institutions are realising the benefits associated with new business models and services, including lending programmes, collateral transformation and optimisation services.

The rise of synthetic financing is also at the forefront of client service discussions. New market infrastructure solutions and the increasing focus on the central clearing of repos is being closely monitored. Regulation directly targeting the securities finance industry, namely the Securities Financing Transaction Regulation (SFTR), is also on the way.

What are the drivers for securities finance and their impact on technology requirements?

Pressure on collateral supply

The possibility of liquidity or collateral scarcity is an undeniable challenge for actors in the capital markets. The Basel III LCR is a driving force behind this development. The LCR requires banks to hold a stock of unencumbered HQLAs to cover the net outflows for the next 30 days. Clearing obligations and uncleared margining rules, with the mandatory exchange of both initial and variation margins, are also key factors.

There have been a variety of market responses to the increasing demand for high-quality assets. Data reports surrounding securities lending confirm the correlation between a decline in the role of cash collateral and increased usage of non-cash collateral.

This development highlights how new regulatory regimes are forcing borrowers to turn to alternative forms of collateral to access and borrow HQLAs. Reports also expose a strong move towards the term repo market and the rise of evergreen or extendible structures to ensure easy access to pools of available HQLAs.

The new regulatory regime is having an indirect impact on the repo market. Under the LCR and NSFR rules, banks are not permitted to offset market-to-market exposures. As a result, they are reluctant to accept high-quality government bonds as collateral for derivatives. In light of this, typical bank clients, such as pension funds whose holdings are mostly concentrated in high-yield assets rather than cash, might need to turn to the repo market to release the required cash. This puts more pressure on the repo market.

In addition to these immediate concerns surrounding liquidity, the possibility of further monetary policy evolution over the coming years has created concerns among key market players.

To facilitate quick access to security assets and optimise their usage, leaders in the industry, including lenders and borrowers from both the sell and buy sides, have started turning to centralised, bank-wide asset monitoring, which creates a single view of all asset classes and geographic markets, aggregating the pool of available securities with an equity and fixed income mix.

The rise of synthetic financing

Synthetic financing is seen as a valuable complement of client services. For example, total return swaps (TRS) or portfolio swaps are enabling buy-side institutions, such as pension funds, to access emerging markets and a wider range of assets, without the regulatory and operational constraints of physical financing.

Synthetic financing has also been gaining momentum because of the lower capital costs involved. Similar to derivatives, synthetic financing falls under the umbrella of the upcoming standardised approach for measuring counterparty credit risk regulations. It offers more netting opportunities than repo and securities lending.

Developing this new type of business model requires the correct technology. In addition to supporting the operations of over-the-counter derivatives, the technology must also support repo and securities lending.

In particular, it requires advanced analytics measurement and dynamic hedging capabilities for a wide range of risk factors. Credit risk capabilities, to measure capital costs involved, are also becoming a key element.

The need for cross-asset efficient operations

As well as focusing on operational efficiency in the face of liquidity scarcity, institutions need to be prepared for increasing volumes following the introduction of the uncleared margining rules.

Firms turning to synthetic financing need to process a large variety of products, such as TRS, portfolio swaps, contract for difference and dividend swaps. By investing in an enterprise-wide operations factory, financial institutions can support the business, control costs and reduce operational risk.

The upcoming SFTR is increasing the need for data centralisation. Starting in 2018, this regulation will require firms to report a granular level of information on assets positions to an approved EU trade repository.

An enterprise solution that allows for the centralisation of transaction reporting across regulatory regimes can leverage similar reporting solutions for derivatives and ease the compliance process.

Accurate internal cost allocation

Costs related to capital, collateral and funding charges need to be reflected accurately in the performance measurement of the various business lines.

Securities finance and collateral desks will play a central role in this internal process.

Taking this into consideration, firms need the right technology to integrate transfer pricing and capital cost consistently across business lines.

Many banks are relying on a disaggregated, multi-system infrastructure to support each business function. Individual legacy systems for the back office, collateral management, securities finance, liquidity and derivatives trading, with a regulatory reporting layer, are not uncommon.

Banks need to modernise these systems and rethink their business processes. The typical target model is a centralised inventory of assets, across activities and entities, with efficient integration with trade lifecycle management, corporate action automated execution, collateral transformation and liquidity optimisation engines.

This may require the complete overhaul of obsolete infrastructures and the implementation of new integration channels. Banks can regroup traditional trading silos in an effort to manage resources and risks effectively and centrally. Where synergies are identified, business areas can then be regrouped to improve efficiency.

Alternatively, banks can invest in a single technology platform. Enterprise platforms are gaining traction among the leaders in the capital markets. There is a growing realisation that the flexibility and the best-of-breed associated with a multi-system approach is outweighed by high integration and maintenance costs.

The enterprise platform bridges the gap between multiple silos, decreases the total cost of ownership and increases efficiencies at every step of the value chain.

With a single platform, operational processes are rationalised around a single data source. This ensures that unnecessary reconciliations between front office, back office and risk functions are avoided.

Financial institutions preparing for external capital markets challenges and internal technology challenges want to build long-lasting partnerships with technology vendors they can trust.

These partnerships will result in an effective technology strategy and the definition of an achievable roadmap for the future.

On top of providing a wide range of functionality for securities finance, collateral trading and treasury desks, technology vendors will increasingly be expected to leverage cross-asset, end-to-end processing, regulatory compliance and liquidity management capabilities in a single enterprise platform. **SLT**

The typical target model is a centralised inventory of assets, across activities and entities, with efficient integration

Etienne Ravex, Product manager for securities finance and collateral management solutions, Murex


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Amid a changing financial landscape, managing your collateral doesn't need to be intimidating. Explore our universe of collateral management and segregation solutions as you navigate the capital markets. With an expansive range of solutions, our Collateral UniverseSM is designed to help you unlock the value of your assets. Benefit from our tools, our expertise and our global perspective.

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Broadridge Financial Solutions, Inc is the leading provider of investor communications and technology-driven solutions for broker-dealers, banks, mutual funds and corporate issuers globally. Broadridge's investor communications, securities processing and operations outsourcing solutions help clients reduce their capital investments in operations infrastructure, allowing them to increase their focus on core business activities. With more than 50 years of experience, our infrastructure underpins proxy voting services for over 90 percent of public companies and mutual funds in North America, and processes more than $4.5 trillion in fixed income and equity trades per day.

Broadridge Securities Financing and Collateral Management Solutions offer global, multi-asset systems designed to enable global investment banks, asset managers and service providers to optimise their regional and global collateral management, repo and securities funding operations. Used together, or as standalone solutions, traders and collateral managers have real-time access to collateral inventory positions, and can easily navigate screens and enter information for quick deal entry, collateral allocation and transaction maintenance. Advanced reporting and workflow options provide users with a streamlined approach to managing large amounts of complex data. From collateral optimisation to master netting and messaging, additional product enhancement modules create a complete platform for securities financing and collateral management teams.

For more information about Broadridge and our proven securities financing and collateral management solution, please visit our website.

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Calypso Technology is a leading provider of cross-asset front-to-back technology solutions for financial markets. It provides customers with a single platform for consolidation, innovation and growth. With 19 years of experience delivering software and services for trading, risk management, processing and accounting, the Calypso solution helps bring simplicity to complex business and technology challenges.

Calypso solutions address needs for the capital markets, investment management, clearing, collateral, treasury and liquidity. Clients can benefit from greater efficiency, improved risk management, better allocation of capital, faster regulatory compliance, quicker time to market and reduced TCO. Calypso Technology offers solutions that improve reliability, adaptability and scalability.

Calypso's securities finance platform is a full front-to-back solution that is able to meet the complex demands of the securities finance market. It provides users with a real-time view of their securities universe for security lending, repo, and collateral management (including efficiency, optimisation, and upgrades). Calypso's securities financing and collateral management solution is used by buy- and sell-side customers as well as clearinghouses and central banks.

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CloudMargin was formed in 2013 by a group of professionals with over 35 years of combined experience within collateral management, OTC derivatives, technology and capital markets. They came together to create a system, built primarily for the buy side, that eradicates inefficiencies in collateral management and to bring a new approach to the ever-changing market landscape.

CloudMargin, the worlds first web-based collateral management system, is hosted securely over the internet, so all you need to use CloudMargin is an internet connection and web browser, meaning there is no need for costly hardware implementation. Nothing to install. Nothing to support. Nothing to upgrade.

CloudMargin offers real-time, exception-based visibility in all collateral books, which is fast becoming a necessity for firms if they want to survive and remain in control of their assets and ultimately their business. CloudMargin presents the users with the capability of true cross-product visibility, opening the doors to the margin efficiency of netting. CloudMargin's collateral technology solution will present users with the ability to make the right business decisions without the inefficiencies that traditional methods of managing collateral impose.

CloudMargin has produced a powerful web-based interface that gives total visibility of proprietary and counterparty or CCP positions, while state of the art data visualisation and reporting puts clients firmly in control of their business.

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- Regulatory impact analysis
- Post-trade services

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Repo and securities lending are the engine of the financial markets. However some institutions are having difficulty pricing repo and securities lending transactions because regulatory initiatives often make transactions economically unviable, leading to dysfunctional collateral markets.

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Global peer-to-peer electronic trading venue, designed to provide a transparent and unbiased venue for trading collateral and seeks to address the growing issues around liquidity which have been affected by on-going market evolution.

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- Collateral upgrade/downgrade

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ENSO Financial Analytics (ENSO), an ICAP Post Trade Risk and Information Group Company, is a market-leading portfolio finance and treasury workflow solution offering hedge funds and prime brokers the ability strengthen their counterparty relationships.

ENSO Core: A fully hosted web-based solution which provides managers access to security lending and repo financing analytics, counterparty exposure and risk metrics, wallet share, cash and collateral management, margin analysis, peer benchmarking, as well as bank commentary.

ENSO Edge: The new emerging manager offering built from the award-winning ENSO Core platform, providing scalable portfolio and finance solutions to assist the daily operational needs of a growing manager.

ENSO Color: A feature set of ENSO Core, which allows clients to consume securities lending desk flow commentary directly from prime brokers.

ENSO ROA Optimizer: An extended distribution channel within ENSO Core, allowing prime brokers to strategically advertise to clients and prospects, which connects supply and demand of post-trade collateral. Clients can easily quantify their prime brokers financing strengths by asset class, currency, and region, as well as manage their balance sheet usage and profitability.

ENSO Broker Vote: Enables client to understand their wallet, manage broker consumption, and track meetings. It aids fund investors and portfolio managers in facilitating the vote and delivering the result along with historical analysis.

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Eurex Clearing is one of the leading central counterparties globally—assuring the safety and integrity of markets while providing innovation in risk management and clearing technology.

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Together with Eurex Exchange, the European Energy Exchange, Eurex Bonds and Eurex Repo, Eurex Clearing forms part of the Eurex Group.

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FIS provides best of breed solutions for all aspect of securities finance and collateral management. We help a broad range of participants address all aspects of their securities borrowing and lending, repo, synthetic nance, and enterprise collateral and optimisation needs.

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GFT is a specialist global consulting firm focused on delivering management consulting, programme and project management, user experience design, technical strategy and implementation services for financial services firms. Headquartered in Stuttgart, we support our clients with consultants based in key locations for capital markets, including: London, New York, Toronto, Boston, Barcelona and Frankfurt. We deliver technical design, implementation and support services from our nearshore facilities in Poland, Spain, Costa Rica and Brazil.

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Today's challenging times, now more than ever, demand the most comprehensive and dependable securities finance and balance sheet management tools available. With the ability to provide 'the small company touch' responding to the specific requirements of each individual customer, but with the added security and resources of being backed by parent company Cantor Fitzgerald, Helix Financial Systems continues to be a leading provider of software solutions, hosting and consulting services for the buy and sell-side communities.

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For more information about Helix Financial Systems and our solutions, please visit our website.

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Lombard Risk is a leading provider of collateral management and regulatory reporting solutions to the financial services industry. Through intelligent automation and optimisation, Lombard Risk's clients are able to improve their approach to risk management, gaining the agility they need for competitive advantage. As well as bringing immediate and urgent solutions to clients' needs, Lombard Risk's global team of experts look beyond today's reporting and collateral management to develop technology solutions that help them adapt as industry challenges evolve.

COLLINE is a web-based solution that supports all of your regulatory and strategic collateral management needs anywhere your business operates, across all time zones. The solution enables firms to move away from managing collateral in business silos. COLLINE supports multiple business lines on a single platform thus permitting more efficient collateral management, collateral optimisation and proactive management of liquidity and capital charge constraints.

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Automatically calculate exposure and balance collateral needs
Manage end-to-end margin call workflows
Reconcile margin call disputes
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Support an array of sophisticated risk and trade analytics

Find out more at www.lombardrisk.com

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Since its creation in 1986, Murex has played a key role in proposing effective technology as a catalyst for growth in capital markets, through the design and implementation of integrated trading, risk management, processing and post-trade platforms. Driven by innovation, Murex's MX.3 Front-to-Back-to-Risk platform leverages the firm's collective experience and expertise to offer an unrivalled asset class coverage and best-of-breed business solutions at every step of the financial trade lifecycle.

MX.3 for Securities Finance and Collateral Trading reinvents active trading off the enterprise asset inventory, providing funding and collateral trading desks with a real-time view of their equity and bond enterprise inventory.

Key features include:

- Comprehensive product coverage for bilateral and triparty repos with native connectivity to multiple agents, security lending borrowing and synthetic financing
- Powerful lifecycle and STP management, including corporate actions automated execution
- Advanced collateral transformation and optimisation
- Flexible compliance and concentration rules
- Full uncleared margins regulatory compliance

OCC

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OCC is the world's largest equity derivatives clearing organization and the foundation for secure markets. Founded in 1973, OCC is a low-cost customer driven organization that delivers world-class risk management, clearance and settlement services to 19 exchanges and trading platforms for options, financial futures, security futures and securities lending transactions. It operates under the jurisdiction of the U.S. Securities and Exchange Commission (SEC) and the U.S. Commodity Futures Trading Commission (CFTC). OCC has been designated by the Financial Stability Oversight Council as a Systemically Important Financial Market Utility (SIFMU), which reflects OCC's critical role within the U.S. financial markets infrastructure.

In 2015 OCC cleared 4.2 billion equity derivatives contracts, up three percent from the previous year and representing its third-highest volume year ever. OCC stock loan activity in 2015 was up 16 percent from the previous year with nearly 1.4 million new loan transactions. More information about OCC is available at www.theocc.com.

Pirum

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Pirum provides highly innovative, functional and reliable electronic services specialising in automating post-trade processes in the equity and fixed income securities finance markets globally. Our strong focus is on product and service excellence, providing the highest levels of efficiency and STP.

Pirum's Classic Service delivers:

- Contract compare
- Billing compare
- Billing and position delivery to everyone of your clients

Pirum's mature real-time service delivers new levels of automation and straight-through processing to the industry, streamlining manually intensive and time-critical processes throughout the day and covers the following:

- Marks automation with STP rates over 99%
- Automated triparty RQV processing, with links to BNY Mellon, J.P. Morgan and Euroclear triparty agents for international and domestic business, and covering every one of your clients
- Bilateral exposure reconciliation
- Automated returns with STP rates over 97%
- Automated prepay and cash return compare
- Real-time contract compare and pending compare
- Collateral coverage and automated loan release

In addition, Pirum acts as a hub with links to Markit for data purposes, and as a CCP gateway with Eurex Clearing allowing novation and providing full post-trade services.

Pleeco Inc.

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Pleeco's mission is to improve sustainability and resilience of systemically important financial institutions by providing them with advanced technology for balancing profitability objectives and liquidity risk constraints.

Our financial resource management technology platform helps banks, broker-dealers and buy-side firms in optimising their balance sheet, cash, capital, funding and collateral for multiple constraints and across asset classes and business silos. The platform serves as a single "command center" for monitoring business activities, limits and performance targets. It also provides business tools for trading inventory, pricing products, managing relationships, minimizing costs, allocating charges, running what-if scenarios and planning for contingencies. As a direct result of this versatility, the platform is typically utilized by multiple business lines and functions within an organization, including front office, financial control, risk, treasury and regulatory compliance.

In addition to the functional aspect, our technology also delivers remarkable user experience. We have developed a unique Information as an Interface approach to enable quick and interactive analysis of vast financial data.

SECURITIES SERVICES

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CO:RE

CO:RE (Collateral & Repo) is the real-time integrated securities finance offering powered and operated by SIX Securities Services. It brings together trading and collateral management capabilities in a fully integrated value chain starting from trading through settlement and finally to collateralization at the CSD or custodian level. The need to drive efficiency, reduce risk and control costs has made an efficient collateral management offering essential for every market player and provides benefits for banks, broker-dealers, insurance firms, commercial banks and asset managers alike.

BUILDING TEAM SPIRIT TOGETHER

SOCIETE GENERALE
Corporate & Investment Banking

Societe Generale Prime Services

www.cib.societegenerale.com

Societe Generale Prime Services, part of the Global Markets division of Societe Generale Corporate & Investment Banking, is the bank's prime brokerage business, offering a unique combination of execution, clearing, custody and financing services. It is truly multi-asset and multi-instrument across listed derivatives, equities (cash/synthetic), FX, fixed income and OTC cleared. As the world's leading derivatives broker, the prime services business offers unrivalled access to 125+ markets and exchange venues; offering both agency or principal execution, and extensive value added services.

The full service platform offers access to significant securities financing capabilities, extensive capital introduction and best-in-class cross-margin capabilities as well as straight-through processing with an industry leading post-trade platform aligned with Societe Generale's extensive research product.

At the core of Societe Generale's universal banking business model, the corporate and investment bank is a well-diversified and leading player with nearly 12,000 professionals present in more than 34 countries across Europe, the Americas and the Asia Pacific.

Standing by its clients across sectors, the corporate and investment bank tailors solutions for them by capitalising on its worldwide expertise in investment banking, global finance, and global markets.

Trading Apps

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Trading Apps (TA) has developed software services to the securities finance businesses of financial institutions worldwide since 2011. Within the securities finance industry, TA aim is to fill the gaps in functionality that exist with the major vendor products. We are quicker to market than proprietary-based systems with targeted applications that keep pace with the business and regulatory changes in the finance industry. By leveraging our robust application-building platform (Glass) we bring a tangible and immediate return on investment to our clients.

Our apps work in tandem with the existing client infrastructure to leverage ROI. They are relevant, contextual, and employ a consistent look and feel. The client can pick and choose which of our solutions are best suited to their business, and most importantly, employ additional apps as their business needs evolve. We target the many applications still running in Excel or legacy proprietary systems, improving security, regulatory transparency, as well as creating flexibility for the user and the back office IT team.

For more information please contact us via sales@tradingapps.com

Transcend Street Solutions

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Transcend Street Solutions provides next generation collateral and liquidity management technology solutions for fast changing capital markets industry. Transcend team thrives on solving complex business challenges and building sustainable technology solutions. Our team has decades of hands-on experience in some of the top tier wall street banks, in the areas of capital markets trading, funding, prime brokerage, clearing and operations, and a successful track record of developing and delivering enterprise-wide front- to back-office strategies for solving complex business challenges.

Team Transcend brings you CoSMOS, an innovative approach and technology that allows you to embrace the challenges of collateral and liquidity management with a modular, agile and scalable technology platform.

CoSMOS gives you a highly effective means of collating, harmonising, mining and analysing all dimensions of collateral information across your enterprise, without the need for expensive systems replacements.

CoSMOS core modules are:

- Agreements Insight
- Real-time Inventory/Position Management
- Margin Dashboard
- Liquidity Analytics
- Collateral Optimisation

SECURITIES FINANCE & COLLATERAL MANAGEMENT

Proven and reliable solutions to manage and automate your entire securities finance business

A suite of managed services to help reduce the total cost of ownership of your securities finance and collateral solutions

Innovative solutions for enterprise-wide collateral management, trading and optimization

Access to global intraday securities lending market data and insightful analysis

FISGLOBAL.COM