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Keeping up with collateral

SECURITIESLENDINGTIMES

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The process of collateral management has gone through somewhat of a change since the collapse of Lehman Brothers and the onset of the financial crisis (that markets have yet to fully recover from). It is no longer deemed to be a process—today, collateral management is a business, and a booming one at that.

Industry figures suggest that collateral in circulation rose 24 percent—from $2.9 trillion to $3.6 trillion—over the course of 2011. Whether this increase in collateral use is market driven or regulatory driven, with higher values comes greater responsibility. As one industry professional commented recently, the spotlight has always been on collateral management, but it is probably burning at its brightest at the moment due to heightened fears around counterparty defaults.

Collateral managers who are faced with multiple trading desks and have a diverse collateral portfolio to oversee—not to mention counterparties to assess—are being forced to into the limelight more than ever before. It is important that they take a step back to look at how their businesses are collateralising trades, what they are collaterising them with and who they are dealing with.

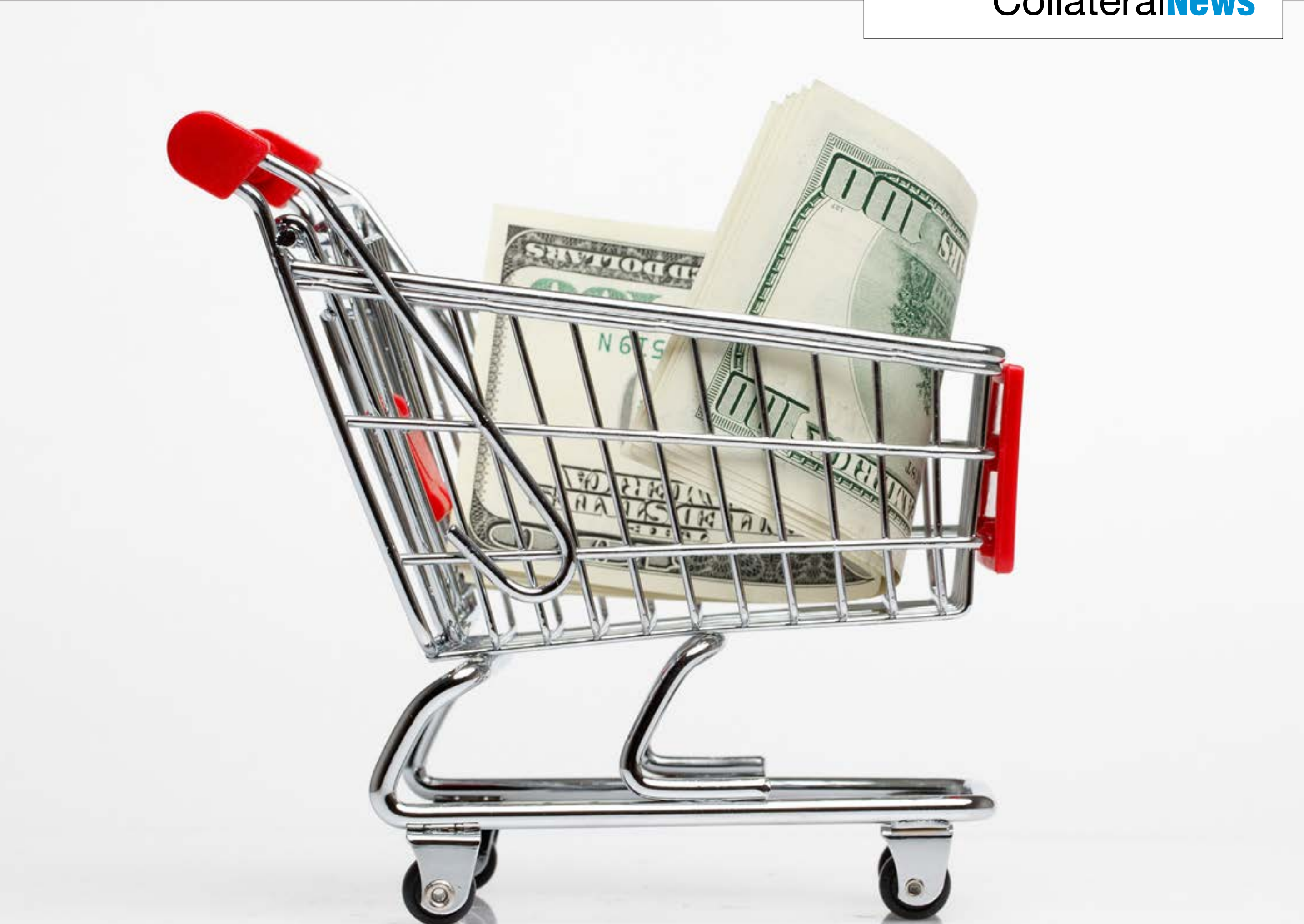
Only a fully informed collateral manager can begin to break down silo barriers and overcome restrictive internal cultures, while anticipating the effects of pending regulatory change and deciding whether to outsource some or all of a collateral management operation.

The 2012 edition of the Securities Lending Times Collateral Management Annual Report suggests that collateral management is about securing trades as efficiently as possible without compromising on quality.

According to the edition's contributors, good pools of collateral remain undiscovered, sophisticated collateral management operations are deployable across businesses, and while regulatory changes will put a lot of pressure on industry technology, partners exist who can help to ease the burden.

The business of collateral management is evolving. Industry professionals need to be prepared to keep up with the times, or risk being left behind.

Mark Dugdale
Editor



Banking on change

SLT looks back over recent collateral news, from Euroclear's 'Collateral Highway' to collateral changes at Morgan Stanley, J.P. Morgan and BNY Mellon

JENNA JONES REPORTS

Morgan Stanley posted $3.7 billion in collateral and other payments after ratings agency Moody's downgraded the investment bank's credit ratings.

Morgan Stanley posted $2.9 billion during Q2 2012, along with an additional $800 million in Q3 after its rating dropped two notches.

Reports claimed earlier this year that a three-notch downgrade could have cost Morgan Stanley $9.6 billion in collateral.

Ruth Porat, CFO at Morgan Stanley, said in a recent statement that prior to the ratings cut, clients, particularly in the fixed-income trading business, held back on doing business with Morgan Stanley as they waited to see what would happen.

"As this process wore on, we could really see—in particular through June—clients were really taking a wait and see approach because it wasn't really clear where Moody's might come out."

Porat said that since the downgrade, conditions have improved and the pace of collateral calls and termination payments has slowed.

J.P. Morgan extended its collateral management product to enhance the security and control that its clients have over excess collateral in response to the billion dollar trading losses that it announced in Q2 2012.

In July, it revealed a Q2 2012 net income of $5 billion, but there were "several significant items that affected the quarter's results—some positively; some negatively".

These included losses of $4.4 billion on the chief investment office's (CIO's) synthetic credit portfolio, as well as $1 billion worth of securities gains in CIO.

J.P. Morgan's additional collateral service supports its clients' listed derivative and OTC cleared activity, "allowing them to maintain excess collateral in a depository institution, J.P. Morgan Chase Bank NA, separate from their clearing broker, and have on-demand reporting and access to their account," said J.P. Morgan in a statement.

The service also allows clients to centralise the movement of collateral "as needed" to meet margin requirements across any clearing broker. This reduces the time that is needed to reconcile accounts, giving clients greater operational efficiency.

"In addition to greater transparency and operational efficiency, this product enhancement is also designed to provide clients with increased confidence in how their collateral is managed," said Emily Portney, head of agency clearing, collateral and execution (ACCE) at J.P. Mor-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gan. “That peace of mind is important given recent events.”

ACCE provides agency clearing, collateral management and execution for CIB clients.The business brings existing capabilities under one roof “in order to provide a holistic, end-to-end solution to J.P. Morgan clients across both the buy side and sell side,” said J.P Morgan.

The bank integrated the teams responsible for brokering client derivatives and securities trades with those that look after the back office aspects of those trades at the end of June.

Portney, who was already the global head of futures and options within J.P. Morgan’s investment bank, leads the consolidated teams in an expanded role that also has her overseeing clearing and collateral management.

J.P. Morgan was in the news again recently when its Worldwide Securities Services’s (WSS’s) triparty offering for the Chicago Mercantile Exchange (CME) IEF4 programme began supporting corporate bonds.

The change came in conjunction with CME Clearing’s decision to expand eligible collateral to include corporate bonds.

“Expanding our collateral programme allows us to continue to meet the needs of our very diverse customer base, particularly as we approach the new regulatory realities that require more collateral from market participants,” said Kim Taylor, president at CME Clearing.

J.P. Morgan’s WWS business also executed Hong Kong’s first HKD triparty repo transaction between Bank of China and Barclays in August.

The bank and the Hong Kong Monetary Authority collaborated on a repo financing collateral management programme to facilitate repo financing transactions between members of Hong Kong’s Central Moneymarkets Unit (CMU) and international financial institutions. The programme launched in June.

It allows CMU members to accept a broad spectrum of international securities that are lodged with J.P. Morgan and other securities depositories as collateral.

J.P Morgan developed a collateral management platform to support the programme. The trade between Bank of China and Barclays is the first one to be executed since the programme’s launch.

The trade “leveraged the cross-currency, cross-border and global capabilities of the repo financing programme and J.P. Morgan platforms by mobilising US Treasuries against HKD liquidity,” said J.P. Morgan in a statement.

J.P. Morgan is not the only bank to get in on the collateral management action.

BNY Mellon recently formed Global Collateral Services to serve broker dealers and institutional investors with collateral management needs.

Global Collateral Services brings together BNY Mellon’s global capabilities in segregating, allocating, financing and transforming collateral for its clients, including its own broker dealer collateral management, securities lending, collateral financing, liquidity and derivatives services teams.

Kurt Woetzel, senior executive vice president and the head of global operations and technology, will lead the new service.

“Global regulations and changing market dynamics are mandating new and complex requirements for the use of collateral, which are forcing both sell-side and buy-side firms to re-evaluate their need for and use of collateral,” said Gerald Hassell, the chairman, president and CEO of BNY Mellon. “We have a compelling opportunity to build on our industry leading position in this space given the clear and growing client requirements for secure, efficient and reliable collateral services.”

BNY Mellon operates one of the industry’s largest securities lending programmes, with $3 trillion in lendable assets. The bank also operates a proprietary global collateral management technology platform that is designed to efficiently handle all asset types that are denominated in any currency.

Woetzel said: “[R]egulatory mandates will result in an unprecedented need for and effective deployment of collateral across our entire client base, significantly increasing the demand for the collateral management services that we deliver.”

“Global Collateral Services addresses the growing need for our clients to manage their counterparty and market risk through the full range of innovative collateral management solutions we offer. This move will accelerate our on-going product development in an area where we already enjoy a significant competitive advantage.”

BNY Mellon now allows futures commission merchants (FCMs) to post a wide range of collateral, including corporate bonds, for futures and cleared swaps margins at CME Clearing.

CME Clearing accepts corporate bonds along with cash, government bonds, agency and mortgage backed bonds, money market funds, letters-of-credit, physical gold, equities, and bank deposits to collateralise transactions in the futures and the OTC derivatives market.

“As demand for non-traditional collateral grows at clearinghouses in the wake of regulatory reforms, it is critical that market participants have access to superior operational solutions and support to post and track their collateral,” said James Malgieri, head of global collateral management and securities clearance services in BNY Mellon broker-dealer business.

“BNY Mellon has for many years provided tri-party collateral management services for traditional repo transactions and has expanded the model to meet the requirements of the centralised clearing environment.”

“CME Clearing’s expanded collateral programme will help create efficiencies for our customers who are migrating their OTC interest rate swaps into CME Clearing,” said CME Clearing president Kim Taylor.

Seven banks agreed to work with European clearinghouse **Eurex Clearing** of the Deutsche Börse Group on its new clearing service for OTC interest rate swaps.

Barclays, BNP Paribas, Citibank, Credit Suisse, Deutsche Bank, J.P. Morgan and Morgan Stanley supported the launch of EurexOTC Clear for IRS.

The move to set up a new clearing service for OTC IRS comes ahead of European efforts to push OTC trading into clearinghouses with new regulations.

Andreas Preuss, CEO of Eurex, said: “We are excited to work closely with the leading OTC derivative dealers in rolling out our new service. Our objective is to deliver the market leading solution for OTC client clearing in Europe.

The service has been ready since July and should launch at the beginning of Q4 2012.

Euroclear has devised what it terms a ‘Collateral Highway’, with the aim of creating the first fully open global market infrastructure to source and mobilise collateral across borders.

It aims to help market participants move securities from wherever they are held to serve as collateral for access to central bank liquidity, secured transactions such as repos and securities loans, and margins for central counterparties (CCPs) and bilaterally cleared OTC derivative trades.

Jo Van de Velde, managing director and head of product management at Euroclear, said: “As central banks and CCPs are to become the biggest takers of collateral, and given the amounts of collateral required, it is important that the market has a systemic and open solution to maximise collateral availability and mobility across borders 24 hours per day.”

The highway is open to all CCPs, central securities depositories (CSDs), central banks, global and local custodians, and investment and commercial banks. Custodians, agent banks and CSDs without a collateral management service offering will be able to use the highway as their own for their domestic clients. **SLT**

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Being in the liquidity limelight

SLT talks to Andrew Howat of LCH.Clearnet about what the central counterparty is up to in the run up to the collateral crunch

MARK DUGDALE REPORTS

Where did LCH.Clearnet's collateral and liquidity management business come from?

One of our key focuses over the last 12 months has been to develop the collateral and liquidity management (CaLM) services that we provide. Essentially, LCH.Clearnet takes all of the cash that is placed with it for initial margining and invests it via repo. It also takes large amounts of non-cash collateral from clients to mitigate the risks that they bring in through the clearing services. Identifying and then providing a link between liquidity and collateral in the form of the CaLM service was quite intuitive.

Our plan is to develop our CaLM service in France, refine the CaLM service in the UK, and bearing in mind that that we have just established an LLC in the US, we need to develop the CaLM service in the US as well. We have a collateral and liquidity management strategy developing there. We believe that collateral and liquidity management will be a key differentiator for central counterparties (CCPs), so we are focusing on internationalising and refining the CaLM service.

What are you focusing on?

An increase in cleared volumes as a result of the regulatory mandates will bring with it increased demand for the high quality collateral that clearing houses require, so we are focusing on two important processes. Firstly, we are trying to make our collateral service as efficient as possible. Recently, some CCPs were being instructed to take and repay collateral via fax, It's 2012 and about time that manual practices are eliminated now front-end portals are available.

We have also developed good solutions in terms of automation with the major triparty providers that we think provide operational efficiency. We are persuading our clients of the operational benefits of using triparty services, while maintaining the choice for them to use single line lodgment for collateral. When we invest our money, we tend to use triparty services, so we are fully aware of the efficiencies of that process. As a part of our more global expansion in the US, we are in active dialogue with vendors and providers to make sure that what they are developing for clients is something that we can accommodate.

Secondly, whilst driving efficiency, we plan to open up pools of collateral that historically have not been commonly used. This has to be done in an operationally efficient way and on a tightly risk-managed basis too. Should a clearing member default, the CaLM service deals with the liquidation of collateral that has been received, so we ensure that we have adequate liquidation services when the collateral that is supporting the trading has to be turned into money. Money-good assets are essential, but there are some distinct boundaries in view of current market conditions as to what count as money-good assets. A CCP has make sure that it has robust methods of liquidation, because it is the next default that we must always be prepared for, not the historical ones.

How much high quality collateral is there up for grabs?

There is a lot of high quality collateral out there, but we need to think strategically as to what else we can do. There is huge regulatory oversight on what they deem to be of the highest quality, and so appropriate to CCPs. We know that we are dealing with high quality collateral when our own risk governance and regulatory authorities are all comfortable. It is always mutual, but we would never suggest anything to them that could not be effectively risk managed by us.

With mandated clearing, regulatory bodies clearly have a view on the definition of high quality collateral, and it is not yet clear under the European Market Infrastructure Regulation or the US Dodd-Frank Act what the outcome will be. We are mindful of the requirements of our clients, but we must maintain high standards of risk management.

There continue to be areas of our existing acceptable collateral grid that we can make more efficient and open up. We have experience of working with both Euroclear and Clearstream in Europe at the international central securities depository level, so we have a lot of experience in what types of collateral come from our clients in these arrangements and what the challenges are of liquidation.

We have a lot of experience in this area and in 2011 the average daily cash and collateral under management was €73.1 billion. This is a significant challenge to the CaLM service. We invest a lot of our daily liquidity through the repo markets and are not seeing too much constrain on the capacity of that market. **SLT**

Andrew Howat
Group head of collateral and liquidity management
LCH.Clearnet

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A disciplined approach

Ted Allen of SunGard examines the disciplines of margin and collateral optimisation

Optimisation is a term that is used fairly loosely for a broad range of activities, particularly these days when the topic of collateral management is high on the agenda. There are many different aspects to a collateral optimisation programme, but taken as a holistic concept we can consider it to be a process whereby an institution can attempt to minimise the cost of collateral that its business activity incurs and to maximise the return on its assets.

This has become an absolute necessity for many institutions, both on the buy side and the sell side in the new regulatory environment. Required collateral volumes are increasing hugely in proportion to the size of the outstanding positions. The impact of collateral terms for any given trade is a key determinant of how profitable that trade will be and so there is a strong incentive for institutions to operate their collateral programmes as optimally as possible. This changing environment has brought the distinct but related disciplines of margin optimisation and collateral optimisation to the forefront.

There are a number of different dimensions to the collateral optimisation problem. Any new trade will affect overall collateral requirements. If a trade is centrally cleared, as the majority of OTC derivatives soon will be, it will attract initial margin and variation margin requirements according to the rules and models of the central counterparty (CCP) concerned. The initial margin component will be calculated according to the exchange's methodology as approved by its regulator and will likely be based on a VaR calculation. If a trade is bilateral, the terms of the collateral agreement in place with that counterparty and the existing portfolio will determine the cost. Even if the trade is bilateral and there is no collateral agreement in place, it will be hedged and that hedge will attract collateral requirements.

That the transformation of the OTC market into a centrally cleared model is a game-changing event is well documented. There are various estimates of the amount of additional collateral that will be required overall, which run into the trillions of dollars. We have also seen recently the BIS / IOSCO consultative document proposing broadly similar provisions for initial margin on bilateral trades. The impact of this, if it were to become a reality, will also be huge and will pose new and interesting problems to the market.

In this environment, it is imperative to minimise the impact of this burden of extra collateral in terms of the amount of collateral that is required and the cost of funding that collateral. To state the optimisation problem succinctly, we should look at two key questions:

- How can I minimise the overall cost of collateral that I put up?
- How can I make the best use of my pool of available assets?

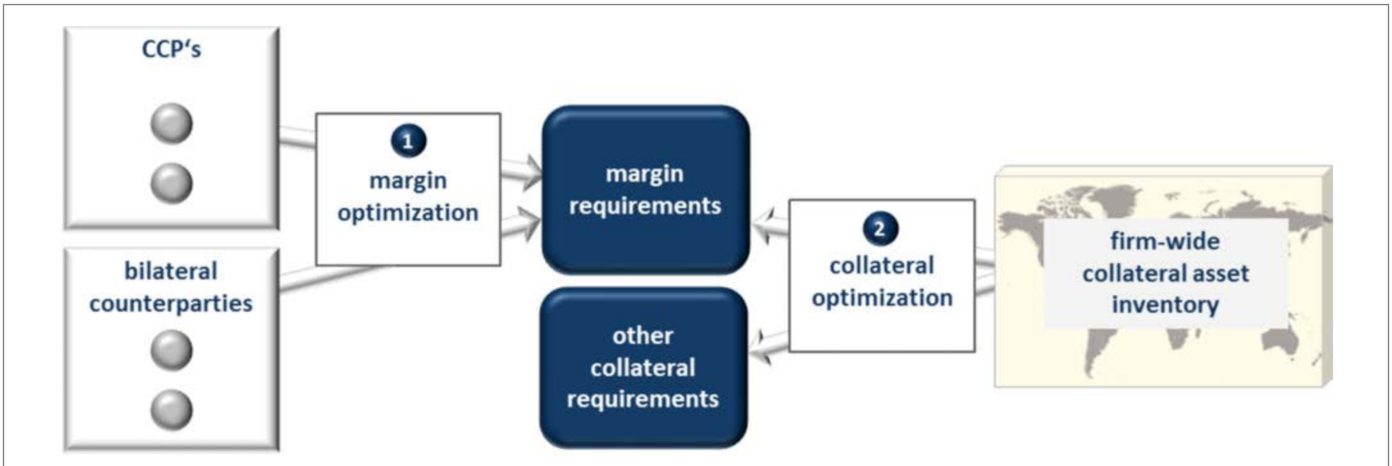
We can then summarise the answers to these questions in two rather simple statements:

- I need to optimise the settlement location of new trades. We might call this margin optimisation
- I need to optimise how I allocate my assets to my collateral requirements. We might call this collateral optimisation

Margin optimisation

Let us consider the first statement regarding margin optimisation. When I decide to put on a new trade, there are decisions to me made about where and how to trade. There are CCPs operating in various locations and more entering into the market. Assuming that I am a member or have access to more than one CCP through clearing brokers, I need to understand the cost of transacting at each one. Each CCP has its own margin terms and the amount of margin that is required will depend on its model and the trades that I already have there. In many instances, I may also have the choice of doing the trade with a bilateral counterparty. I will have negotiated bilateral collateral agreements with my direct counterparties and each of those will have specific rules governing eligible collateral and haircuts, and the collateral requirement calculation terms (thresholds, minimum transfer amounts, and so on). In addition, there may well also be the newly proposed initial margin requirements as proposed in the BIS / IOSCO paper. These agreements may have been negotiated some years previously and there may be some scope for renegotiation of these terms (which in itself can be regarded as a form of optimisation), but in the short term they can be regarded as fixed.

The key to solving the margin optimisation problem lies in working out how best to balance the portfolio of trades across the various counterparties and possible settlement locations. The goal is to minimise the amount of collateral that is required across all of the obligations, but also to take advantage of preferential eligibility and haircut rules for various collateral types that will match my portfolio of available assets. These potential offsets also need to be taken into account in the decision making process around deal allocation. We know from optimisation theory that there must be a single objective function to any optimisation, and so these rules



and constraints must be presented to a margin optimisation engine as a cost parameter to determine how to maximise revenue from the asset portfolio. To achieve margin optimisation, we need to calculate the funding costs of collateral for a new trade with any of the possible counterparties or settlement locations and choose the best one.

For each counterparty or CCP, we can simulate the impact of the new deal by adding it to the existing portfolio and running through an approximation of the relevant initial margin calculation for each potential counterparty or CCP. This way, I can estimate the amount of extra collateral that will be required and the funding cost of that collateral. This calculation is often referred to as the Funding Value Adjustment (FVA). One methodology that is used for calculating FVA is to perform a Monte Carlo simulation on the underlying portfolio and also all the collateral assets using the funding or collateral yield curves for each currency or asset. Along each scenario, the collateral balance across each time-step is integrated with respect to the spread between the funding and the collateral rates using the simulated yield curves, and this can be averaged across all scenarios to recover the total cost of collateral. The inputs to each calculation are therefore the underlying portfolio and market data, the current collateral balance and the assets that it comprises, a funding rate per currency or per asset where non-cash collateral is used, and a collateral rate per asset representing the contractual rate that is paid when the asset is held as collateral (for example, the interest on cash). The calculation also needs to include the collateral requirement terms, the applicable posted and received haircuts per asset and so forth. For the calculation to be meaningful, we may also want to assume some time band for the funding requirement to be considered rather than the entire length of the deal.

We will then want to identify which is the most advantageous settlement location. The result could vary widely given the portfolio effects of the existing population of deals at the various locations. So a deal placed at one CCP may add significantly to the initial margin requirements there, whereas the same deal may have an offsetting effect at another CCP and would actually decrease the initial margin requirements. These calculations look difficult and operationally intensive at first, but in fact if you are already performing CVA calculations, there should not be much incremental effort. However, you do need to perform the calculation for each potential settlement location and identify the optimal counterparty or CCP fast enough for the result to be useful pre-deal.

It is important to note that the optimal location will not always be the one that gives the best absolute result in terms of the value of initial margin that is required; you will also need to take into account the profile of eligible collateral and how that matches your funding profile in the various asset classes. For centrally cleared transactions, some CCPs are now offering the capability for members to define the set of futures that they may wish to offset their swaps in the VaR margined portfolio and those that they wish to keep in the SPAN margined portfolio. I have left out the cost of capital to support the trade, which will differ potentially greatly depending on whether the trade is bilaterally or centrally cleared, but that is also clearly an important component of the final result.

Ultimately, the profitability of a deal must take into account the cost of the collateral that is required to support it. If this can be measured and estimated pre-deal, then it must factor in to the deal pricing and whether or not to enter into the deal in in the first place. This is a part of the process for the pre-deal decision support and a more incentivising tool to the front office than charging back actual costs of collateral to the desk on a historic basis, which is perhaps a more traditional method.

Collateral optimisation

It is immediately apparent when we look at the challenges of collateral optimisation that we will get better results if we cast a wider net. We need to run our optimisation algorithms across the broadest set of requirements possible and with a single consolidated view of the available inventory. When we consider the new collateral landscape, it is clear that the old model of business-level silos does not cut it any more. Many institutions have adapted and have brought those silos together into a single enterprise collateral management ecosystem. Getting different business lines to buy into a single collateral organisation and centralised decision-making process for collateral allocation can be difficult in some institutions. Of course, there is still scope for optimising within product silos, optimisation tools and costs can be shared, and this is better than no optimisation at all. Nevertheless, the benefits of a centralised inventory and of centralised allocation decisions are potentially significant and certainly measurable.

Once we have the centralised global inventory of assets and the associated eligibility and haircut rules, we then need to determine the optimal way to allocate these assets to the collateral requirements resulting from the margin optimisation exercise above. There is the temptation to take a ‘fire and forget’ approach to collateral allocation. That is the way that it was traditionally performed——make a decision on the cheapest-to-deliver collateral at the time that a call is received, post out those assets, and forget about them until the exposure drops and they can be recalled. Even refinements of this approach, whereby you have some kind of ranking of agreements and assets and you allocate them sequentially, is demonstrably not the way to solve the collateral optimisation problem.

Optimisation algorithms work differently and much more effectively. They have a single objective function, which is to minimise the overall opportunity cost of the pledged collateral assets, or in other words, maximise the revenue from the overall collateral asset pool. This is an important distinction. A crucial aspect in the context of collateral optimisation is the distinction between single requirement-based optimisation and overall optimisation. The first type is to optimise the allocation of collateral assets for a single requirement in isolation, ie, find the lowest quality of accepted collateral for a single margin call and do this sequentially or by a ranking. The latter is working across the global set of requirements to find the cheapest overall combination of assets that are allocated to the various collateral requirements. This is how a true optimisation algorithm will work and it will yield significantly better results.

The algorithm must also consider not only new pledges of collateral in performing the allocations; it must consider that previously posted collateral may be substituted and redeployed elsewhere. There is something of an art to the calibration of these algorithms. The costs of use of different assets must be determined, including movement costs, and they must be tailored to understand the constraints of a feasible solution (eligibility rules, haircuts, concentration limits, and so on), and they must take into account operational constraints such as the number of substitutions that you can physically perform in any one optimisation run. The next part of the optimisation process is to automate the collateral trade generation to cope with the increased number of movements that will occur once optimising the allocation is started. Such a collateral optimisation solution, if correctly deployed, represents a significant competitive advantage and constraint on the costs of doing business.

Margin and collateral optimisation are relatively new disciplines that are gaining traction as institutions formulate their responses to the new regulations. When central clearing kicks in, these activities will no longer be a luxury; they will be a necessary tool for institutions to deploy their capital most efficiently and to retain their competitive edge. **SLT**

Ted Allen
Vice president, capital markets collateral
SunGard

Collateral choices

Claire Johnson of CIBC Mellon makes the case for outsourcing collateral management in OTC derivatives

With the ability to provide substantial flexibility at relatively low cost, it is no surprise that derivatives continue to grow in popularity. Derivatives enable participants to obtain exposure to a counterparty's profit or loss on a given investment, with OTC derivatives enabling participants to trade bilaterally with a counterparty of their choice. Commonly backed by securities or cash collateral to guard against counterparty default, OTC derivatives transactions today underlay a wide range of hedging and alternative investment strategies.

Following the 2008 market downturn, derivatives market participants, regulators, legislators and other stakeholders have been moving towards a number of trends, including: standardisation and simplification of OTC derivatives contracts; greater market transparency through the establishment of trade repositories; migration of OTC derivatives business to central counterparties (CCPs); and requiring market participants to engage in risk mitigation processes. Today's OTC derivatives markets demand stronger reporting, more intensive processing, more accurate pricing and much more effective management of collateral.

The wheres and the whys

A 2010 BNY Mellon survey of Canadian, European and US pensions and foundations found that the most common reasons for using derivative investments were "meeting fund allocations" and "hedging asset class exposure". The two most popular forms of derivatives were futures contracts and swaps, which enable participants to increase or decrease a given exposure.

Survey participants were also asked about their perceptions of risk related to derivative instruments. Approximately 80 percent of survey participants viewed OTC derivative instruments as embodying relatively greater risk than their exchange-traded counterparts. Participants cited increased counterparty risk and lack of transparency as the greatest risk concerns, with liquidity risk, misinformation or lack of understanding of the complexities, pricing concerns and operational risk being additional concerns.

Global market, global regulation

The OTC derivatives marketplace is global and cross-border, leading regulators around the world to align their efforts. The G20 nations made joint declarations at the 2009 and 2010 summits, calling for OTC derivatives contracts to be traded on exchanges or electronic trading platforms, and cleared through CCPs—or be subject to higher capital requirements.The G20 nations also agreed to accelerate measures to improve transparency and regulatory oversight of OTC derivatives. The US Dodd-Frank Act and the European Commission's legislative proposal for OTC derivatives regulation reflect these commitments.

The Canadian Securities Administrators (CSA) Derivatives Committee is working to develop a national framework for derivatives. In February 2010, the committee recommended an effort to ensure CCPs clearing OTC derivatives possess adequate rules and infrastructure to facilitate the segregation and portability of collateral in a manner that provides market participants with appropriate protections. On 31 July, a new OTC rule came into effect in all Canadian jurisdictions except Ontario. The new rule requires disclosure by issuers with a significant connection to a Canadian jurisdiction whose securities are quoted in US OTC markets; and discourages the manufacture and sale in a Canadian jurisdiction of US OTC-quoted shell companies, which the CSA notes "can be used for abusive purposes".

Quebec in close vision

Quebec passed Canada's first comprehensive legislation governing OTC derivatives activity in 2009, and updated this legislation in November 2011 to align with G20 commitments. Among other things, Quebec's derivatives legislation empowers Quebec's financial markets regulator to monitor the market through information requests and inspections, and enforce market rules through the imposition of administrative penalties.

As the Montréal Exchange is Canada's primary clearing house for derivatives, Montreal is a hub for derivatives expertise—though much of the derivatives activity has been between the large banks. Despite Quebec's leading regulatory position, the percentage that is allocated to derivatives in Quebec is perhaps slightly lower than the average Canadian pension plan. Patricia Tonelli from CIBC Mellon's Montreal office explains why this might be:

"There have been a handful of high-profile issues in Quebec in recent years with hedge funds using derivatives-based strategies. This chilled interest among many pension plans and led to a lower appetite for derivatives products. Now, we are seeing a gradual return of derivatives-type investments as many plans recognise the value of this type of product as a means to both mitigate risk and gain desired exposures in the market. In many cases, pension plans are seeking strategies powered by derivatives such as currency overlay products and LDI strategies that use derivatives models."

The move to centralise and regulate is welcome, but it is not without challenges. The reporting and tracking that is associated with central settlement and new regulatory frameworks can mean loss of flexibility, increased cost of financing positions, greater reporting requirements and expanded operational requirements. Pension plans are faced with a choice: invest significantly in internal reporting and management systems, or outsource reporting requirements to a third-party provider that can provide the necessary expertise, systems and support.

Guard against these common process deficiencies

Firms should work with their investment managers to ensure appropriate steps are taken against:

1. Inadequate counterparty credit risk governance
2. Weak documentation
3. Extensive manual workarounds for trade management and accounting
4. Dependency on counterparty valuations
5. Limited capacity to accurately quantify counterparty exposures and concentrations
6. Deficient counterparty credit limits and framework
7. Infrequent portfolio reconciliation
8. Limited capacity to call collateral from counterparties
9. Margin requirements that distort portfolio strategies
10. Weak counterparty dispute resolution processes

Best practice trends

With the ongoing march towards expanded regulation, reporting and risk mitigation requirements, and the analysis that has been undertaken around derivatives in recent years, several trends in best practices have emerged for both substantial and occasional OTC derivatives market participants:

- Engage in bilateral exchange of collateral with respect to OTC derivative exposure
- Use forward-looking potential future ex-

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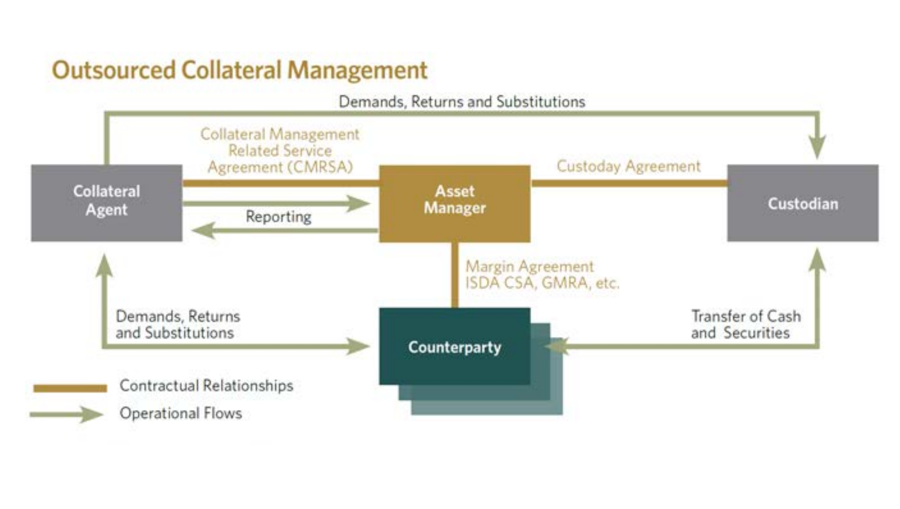
posure calculations, which are superior measures of counterparty credit risk than mark-to-market valuations
- Ensure OTC derivatives positions are priced and exposures calculated in a systemic manner
- Ensure robust independent pricing of OTC derivatives to validate collateral demands
- Keep all documentation up-to-date and ensure it captures comprehensive information about OTC derivatives activities
- Conduct regular and frequent portfolio reconciliation with OTC derivatives counterparties
- Establish and apply appropriate counterparty credit limits to control concentration
- Engaging experts with a robust collateral management system will support the effective use of collateral.



Source: ISDA Market Review of OTC Derivative Bilateral Collateralisation Practices, 2010

Outsourcing collateral management

In January 2011, BNY Mellon released research into OTC derivatives that shows significant gaps in implementation around mitigation of counterparty credit risk, and that substantial investment will be required on the part of many clients with regards to forthcoming regulatory changes and best practices. Key findings included:
- Forty percent of institutions that were surveyed do not have internal OTC derivatives pricing capabilities
- Only 10 percent use best-practice potential future exposure calculations for counterparty credit risk measurement—90 percent continue to use mark-to-market valuation
- Just under 50 percent have outsourced collateral management—25 percent have deployed vendor collateral management solutions internally, with the remainder reliant on bespoke applications and spreadsheets.

For some large institutions, effectively measuring and mitigating credit risk across thousands of counterparties may justify building proprietary systems or purchasing a vendor solution. Others are outsourcing the administration, documentation and technology investments that are associated with counterparty credit risk and collateral management to their custodians. As the systems and expertise to support these programmes are aligned with the solutions that custodians have deployed in support of client securities lending programmes, there are notable efficiencies gained that have led some of the largest OTC derivative participants to outsource collateral management.

Even for smaller pension plan managers, the segregation of assets across various portfolios and legal entities, multiplied by current and emerging regulatory demands, can result in substantial operational overhead being consumed in bringing OTC derivatives activities into alignment with risk-mitigation best practices. These factors make the outsourcing of collateral management attractive for institutions desiring robust collateral processes without dedicating substantial internal investment to the issue.

In an outsourced collateral management system, pension plans and their investment managers retain bilateral relationships with the preferred counterparties. A collateral agent is responsible for valuations, margin call calculation, and processing the movements of collateral on behalf of their buy-side clients, while the custodian executes on the transactions and transfers of cash and securities. The outsourced solution enables asset owners, investment managers and counterparties to focus on executing investment strategies, while leaving the operational, regulatory reporting and transaction requirements around collateral management to the custodian and collateral agent.

The upshot

OTC derivatives have become a key tool for a variety of investment strategies, even as the associated operational, regulatory and risk-management requirements continue to grow. The choice of building, buying or outsourcing a collateral management system will depend on the firm's individual needs. Regardless of your choice, it is critical to work with your investment managers to carefully consider and implement best practices for risk and collateral management around OTC derivatives. **SLT**

This article originally appeared in French in the May edition of Canada's Avantages magazine (Rogers Media)

Seven OTC derivatives questions for your firm to consider

1. What level of derivatives activity is appropriate for my firm?
2. What are the essential elements of best practice that are relevant for my particular scale of OTC derivatives activity?
3. What products and services are available in the market to assist me with the creation of a robust counterparty credit risk management framework?
4. How can I ensure that my documentation on OTC derivatives activity is up-to-date and comprehensive?
5. How can I ensure that my OTC derivatives positions are priced and exposures calculated in a systemic manner?
6. What are the appropriate portfolio reconciliation and collateral management processes for my firm?
7. Should I fully outsource collateral management, deploy a vendor's collateral management system internally, or build my own collateral management system?

Claire Johnson
Head of marketing, product, and client integration solutions groups
CIBC Mellon

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Racing ahead

SLT's panel of experts look under the hood of collateral management to find out what is making it tick and how it is being finely tuned to go the distance

Antonio Neri
4sight Financial Software
Executive director

Simon Lillystone
IBM Algorithmics
Collateral management

Paul Harland
BNY Mellon
Managing director—EMEA sales director, securities clearance and collateral management

Saheed Awan
Euroclear
Head of global collateral services

John Rivett
J.P. Morgan Worldwide Securities Services
Managing director and global head of collateral management

Ted Leveroni
Omgeo
Executive director of derivatives strategy and external relations

Elaine MacAllan
Lombard Risk Management
Business matter expert and product consultant

James Tomkinson
Rule Financial
Specialist in OTC clearing and collateral management

Mat Newman
SunGard Capital Markets
Senior vice president/general manager for the Apex Securities Finance and Collateral solution suite

Sander Baauw
Synechron
Managing director—continental Europe business

In what ways has collateral management changed in the last few years?

Ted Leveroni: Following the financial turmoil of 2007 and 2008, collateral management underwent some significant practical changes. Prior to that time, the way that collateral was managed, particularly on the buy side, was non-standard to say the least. While some investment managers had balanced and detailed International Swaps and Derivatives Association CSAs (ISDA credit support annex) in place that allowed for daily bilateral collateral management, along with an automated process to support it, many others were subject to one sided CSAs that were in favour of the brokers and had small or non-existent collateral management operational teams.

This has changed. Today, we are seeing the buy side revisit their CSAs to ensure that collateral flows both ways—to and from their brokers. We are also seeing these investment managers implement dedicated, automated collateral management operations to support daily processing. While many buy-side firms still have a ways to go, many investment managers have implemented significant advancements.

Saheed Awan: Collateral management is undergoing a transformation in nearly all financial institutions, if only because prior to the crisis—indeed a few years ago—a large portion of the business was still conducted on an unsecured basis and this, across market segments. Collateral management is no longer viewed as an isolated and reactive back-office function, but as a key enabler for firms to mitigate their counterparty risks. Even more importantly, collateral is increasingly needed to meet their daily liquidity and financing needs.

Since the crisis began, a raft of new regulations has propelled collateral management to the fore. The forecasts of new and additional collateral requirements due to regulatory impetus are going to be substantial. This in itself is forcing almost all financial institutions—both the buy- and sell-sides—to redefine their operating models for collateral and margin management. The key focus is on optimisation, transformation and global or enterprise-wide inventory management. Firms are realising that managing collateral, and thereby counterparty exposures, within business silos is no longer an option.

Institutions are looking to have a global view of their available positions across asset classes and locations. And on top of viewing all their positions, the need is then to mobilise securities as collateral optimally, with the objective of minimising the overall cost of funding.

At the same time, investors are continuously looking at ways in which they can improve their risk controls. The latter has put collateral management firmly in the spotlight as an integral part of risk mitigation. Collateral must be marked-to-market, adequately margined and diversified.

Collateral is ultimately about managing the worst-case scenario, namely a counterparty default. At that point, collateral must be accessible without any impediment to facilitate a timely realisation of value.

Paul Harland: BNY Mellon has been in the collateral management space as long as anyone, since the early 1980s. With balances exceeding $1.8 trillion across our programmes, we manage substantially more than any other collateral manager. Our size and depth of experience has given us exposure to every market change over the last few years and we have responded to meet such challenges with innovative product development.

Collateral has always been used as a means to mitigate risk; triparty collateral management was originally developed as a means to mitigate financing risk. However, in recent years, it would seem as though collateral has become more broadly accepted and is now required by institutions across all sectors, including those outside of the traditional triparty world.

Market expectations around collateral have also changed. As a result of the market dislocation of 2008, today there is a greater focus on transparency, optimisation and customer control. The industry is also grappling with heightened risk sensitivities and the requirements of an ever-changing regulatory paradigm—in particular, the collateral requirements embedded within centrally clearing business that was previously settled bilaterally. Institutions ranging from the traditional sell-side firms through to the buy side (in all its various guises) now partner with BNY Mellon and the central counterparties (CCPs) in an effort to understand and respond to the new requirements.

For us at BNY Mellon, industry changes led to the formation of a new business unit, Global Collateral Services (GCS). GCS builds on BNY Mellon's extensive collateral management capabilities to offer one of the most comprehensive set of collateral services in the industry, including collateral finance, securities lending, liquidity management, and derivatives services.

Harland: Collateral has always been used as a means to mitigate risk; triparty collateral management was originally developed as a means to mitigate financing risk

Sander Baauw: In my previous role, I have seen it changing from a daily exposure management job at the middle/back office to a sophisticated front office trading activity, which optimises your entire trading book and mitigates your risk. Due to the volatile market circumstances and changing regulatory environment, it is now required to have a dynamic and fully fledged, focused collateral management team, which is not only in very close contact with the traders but sometimes even more with the risk managers. One of the results is that it is now almost the standard to handle your collateral via multiple routes. In the old days, some parties could handle it with only one asset class (cash for example) and only dealing bilaterally, but nowadays a lot is done via different triparty agents and with a variety of asset classes. Every asset class nowadays has its own price, and even within the asset class, there is a wide range of price differentiation, which affects the collateral costs. As you can see, it is all much more detailed these days and everybody takes into consideration multiple criteria such as credit ratings, country of issue, average daily volume, maturity, and so on. However the most important aspect is all these factors in combination with the risk on your trading counterparty. Taking all these factors in consideration, it is not possible to do this in a spreadsheet with a price feed, but you need reliable systems that can handle multiple locations and have the ability of interfacing with all possible systems.

John Rivett: For many firms, effective collateral management processes have increased in importance, given the capital and cost pressures driven by the regulatory reform agenda. Central clearing is likely to change the composition of margins posted to CCPs, increasingly favouring non-cash collateral. This is driven by several factors. Buy-side participants wishing to avoid holding large un-invested cash pools will represent higher drivers of flow. Improved service models reducing historic cost and operational complexity to manage non-cash collateral can be overcome by adopting triparty solutions.

Furthermore, collateral preference changes have occurred due to an increase in risk sensitivity. In securities lending, for example, the majority of the European market already operates on a non-cash basis, and post-crisis, a larger proportion of the US market is also moving that way. Collateral terms are being renegotiated to be more risk averse and to remove or reduce what used to be normal practices, such as high thresholds or margin call frequencies set as 'monthly' or 'quarterly'.

Mat Newman: There has been a big shift in emphasis over the past couple of years from the operational management of the collateral process to the optimisation of asset allocations to reduce costs and enhance yields. Whilst operational efficiency and cost containment are still important factors in the back-office functions that are related to collateral, we have seen much more interest coming from the front office in terms of collateral availability and collateral upgrades. This is partly driven by regulatory changes, which have put enormous pressure on banks in terms of both capital usage within the trading businesses and the amount and quality of liquid assets that they need to use. This compression of profitability and additional demands for assets mean that any edge a trader can gain in terms of cost of funding and cost of collateral is a significant factor in whether his business can remain viable.

Elaine MacAllan: Traditionally, collateral management has been managed in product silos, so a collateral technology was implemented to take data from a siloed upstream (front office) system, and manage the margin calculation and workflow to the point of settlement and reporting. As the cross-product markets have evolved, precedence, technical capacity, and varying legal agreement definitions at product level have created a wide variety of global collateral management practices.

Historically, collateral has been fairly cheap and widely available, with collateral teams readily accessing long positions of trading or treasury desks, and there was less focus on the cost of collateral—it was an accepted and acceptable cost of risk mitigation. Furthermore, collateral operations tended to be viewed as a standard operational function, with the front office, treasury and credit risk departments establishing the guidelines and then generally leaving the back office to manage the process, positions and costs.

Since the banking crisis, there has been an intense focus both by firms and the regulators on collateral operations, as one of the key tools available to manage and increase control over credit and market risk.

Appetite for risk has been drastically reduced—bilateral thresholds and credit limits are being reduced and therefore increased levels of collateral are being demanded. Furthermore with the advent of mandated clearing, and the regulatory imposition of minimum margin levels—these collateral requirements are only set to increase.

Neri: Collateral management has effectively moved from a way of mitigating risk to a business opportunity

As a result, collateral is more expensive and less readily available. There is an increasing pressure to make the best use of available collateral, calculate the cost and maximise the cost savings, within the collateral programme. Credit risk teams are clearly operating at heightened levels of awareness, and treasury and front-office functions are becoming increasingly involved or responsible for collateral inventory management and cost attribution.

Collateral operations are no longer seen as just another operational function and cost. Firms are looking at collateral strategy as a top priority in a time of unprecedented market change and upheaval.

Antonio Neri: Collateral management has effectively moved from a way of mitigating risk to a business opportunity. Sound collateral management is still a powerful way of moderating counterparty credit risk. However, it has also evolved into a way to boost revenues and reduce costs as pricing of collateral and credit risk becomes more sophisticated. As time goes on it will increasingly become a way for firms to differentiate their offerings in a highly competitive market and is rapidly gaining more and more attention among both buy side and sell side firms as regulatory deadlines move closer.

From a buy-side point of view, there is also attention on greater segregation of pledged assets as end users seek to ring fence collateral in the event of a broker default (as in the recent case of MF Global, for example). Bankruptcy remote collateral will also have a lower risk weighting under Basel III.

Likewise, restrictions around re-hypothecation of collateral are also becoming more prevalent following the demise of Lehman Brothers. This should have the effect of reducing the velocity of collateral and further increasing its cost.

From a technology perspective, collateral optimisation is currently the hot topic, and we have seen huge interest in our collateral optimisation solution. Driving this are regulatory demands for banks to hold more capital, coupled with a need to post margin with CCPs as derivatives trading moves to a centrally cleared model. This is increasing demand for high quality collateral and firms are therefore seeking to use their collateral pools more efficiently. It is also prompting a move to centralise the collateral function across all business lines a firm is involved in, which facilitates a more holistic view of assets and more effective allocation.

James Tomkinson: The changes in collateral management have been tremendous over the last few years, with indications that the rate of change will continue to accelerate in future. There are a number of key drivers causing this change, but because of market interconnectivity and interdependence, no single event occurs in total isolation of any other. Three key factors that most would identify as dominant drivers of the changes are:

- Reduction in the availability of uncollateralised credit in the market
- Regulatory changes
- Increased usage of CCPs.

The reduction of available uncollateralised credit lines has been driving the increased activity of collateralised trading for some while, but it is predicted that the effects of new regulation will increase the value of collateral being held in 2013 and beyond, as more players implement their margining solutions in order to become regulatory compliant. This will be accompanied by an increase in the number of CCPs and the inevitable further increase in margin activity.

Simon Lillystone: The demand for advanced, robust, enterprise-wide collateral and margin management systems has never been greater. This could be seen as a natural outcome from the seemingly cyclical, often systemic market failures, whether driven by regulators or more stringent internal risk management policies, but there are many other reasons. The key ones are:

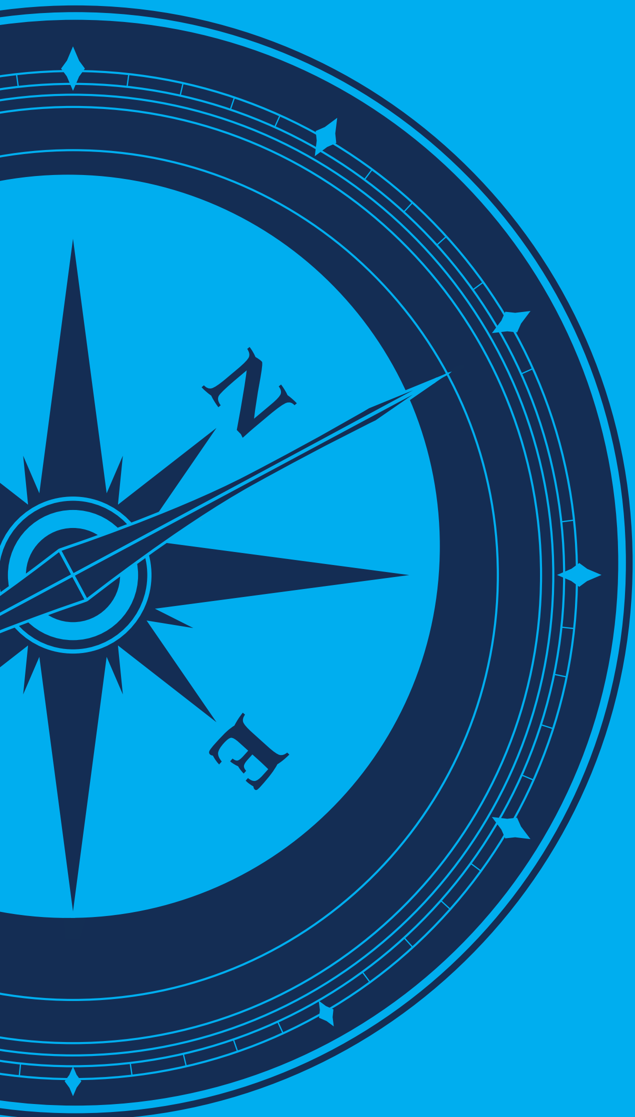
- The diversity of participants has never been broader, and the communication/messaging web that needs to lie between them never more complex
- A growing number of third-parties, such as brokers, clearers, custodians, fund administrators, and other intermediaries are keen to offer collateral management as a service to others (often alongside their proprietary business)
- There has been a steady, relentless move from unsecured to secured, collateralised trading across just about all asset classes
- Numbers of collateralised relationships has risen dramatically, largely due to the increasing presence of derivatives in fund portfolios, and the growing preference for risk diversification through the use of multiple, rather than sole prime-brokers
- There has also been a transformation from reactive to active portfolio reconciliation, which can be overwhelmingly challenging without the support of advanced technological solutions
- More recently, with the increasing use of initial margin, and the flight to quality in terms of collateral and its allocation to margin obligations, collateral management is finally having to do what it says on the tin.
- There is a greater emphasis on best practice in risk management in general, and collateral management in particular. Fewer and fewer firms are relying on regular office tools, such as spreadsheets, to manage their risks.

These and other aspects have not only pushed risk, collateral and margin management ever further into the limelight, and demonstrated its pivotal nature at macro and micro levels, but have also highlighted the critical need for advanced, enterprise-wide collateral management solutions.

Is collateral management a profitable business, a risk mitigation strategy, or both?

Baauw: This is dependent on your business model in combination with your risk appetite and the position you have in the securities financing value chain. I think that it is all about finding the balance between these items. If you are a pension fund and only want to lend government bonds versus German government bonds as collateral, you will see it as a risk mitigation strategy. If you are a bank with a collateral management trading team that is able to trade all kinds of asset classes versus other asset classes, you will see it as profitable trading business. For most parties, the balance will be somewhere in the middle.

Harland: It depends on your perspective. From a front office, repo or stock borrow loan perspec-



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tive, the core function is embedded in income and profit. However, if you consider collateral as an operational or middle-office function, then it may be seen as more of a risk mitigation strategy.

Collateral management can be both income and cost driven, but it is not unreasonable to suggest that using collateral management as more of a risk mitigation strategy may dominate thinking going forward.

Awan: Collateral allows clients to extend their trading limits against their counterparties and trade more often

Rivett: Collateral management has been a core business activity for J.P. Morgan for more than 20 years. It is a risk mitigation tool providing controls and automated solutions to manage concentration limits, asset allocation orders and haircuts. Collateral management also ensures that positions are not unnecessarily over-collateralised, allowing clients to use assets for alternative activities. The ability to offer a holistic approach to collateral management, whether clients are active in swaps, futures or securities, is a key business enabler that helps clients to meet regulatory pressures in the most cost-effective and secure manner. An important driver, especially for sell-side participants, is to reduce their operational burden through improved optimisation, quick substitution and automated allocation of their collateral process.

Awan: Collateral allows clients to extend their trading limits against their counterparties and trade more often. Sound and efficient collateral management will enable banks to reduce their risk-weighted assets and expand their funding capacity. Lowering the cost of accessing liquidity and reducing the amount of risk capital required for trading definitely adds to their bottom line.

However, as a result of the financial crisis, managing collateral is increasingly about managing risks. Effective collateral management has become a key component of any investor's risk mitigation strategy. In addition to having comprehensive portfolios of accessible collateral and fully automated processing, transparency is an important element. Investors need granular views on the type of collateral they are holding so that they can assess whether their exposure is sufficiently covered. And, of course, in the event of a counterparty default, collateral needs to be liquidated. Therefore, easy access to collateral and liquidity, in its broad sense, then becomes vital.

Newman: Collateral managed used to be thought of purely as a risk mitigation strategy, much in the same way people viewed netting agreements and credit limits. Now, there are opportunities to optimise collateral usage across multiple silos and to actively pursue substitution strategies to increase overall returns, so the collateral management area is becoming a profit centre.

MacAllan: Fundamentally, collateral is an essential risk mitigation function, and always will be. It represents a cost to the firm, but ultimately regulatory reform will ensure that a poorly managed collateral programme will become even more costly from a capital, liquidity and availability perspective. Therefore, a strategic focus on the cost of collateral, and the attribution of those costs, is engaging the front office. They are looking for ways to both reduce exposures to bring down collateral requirements, and also to limit the cost of collateral through an effective optimisation process.

Traditionally, collateral was only a revenue-generating business for those involved in directly selling collateral functions—for example, triparty service providers. This is changing: firms are identifying how collateral optimisation can become a value-added, chargeable service for their clients, and starting to develop technology solutions and product offerings within this space. Collateral transformation services in the clearing space are a good example of how broker-dealers are transforming a potential increasing cost to the firm's collateral programme, into a revenue opportunity.

Neri: We should never detract from the fact that collateral management is primarily a risk mitigation tool and as it evolves, it will continue to use ever-more sophisticated methods of assessing counterparty credit risk and managing exposures.

However, due to shortages of high-grade collateral it is also becoming both a cost reduction and a profit generation tool. Successful firms are now pricing and deploying collateral more effectively while also expanding trading opportunities through efficient collateral use and more informed decision-making. In this sense, collateral management is moving towards becoming a front-office trading discipline as well as an operational process. The point should also be made that firms with superior operational capabilities in collateral management can win market share through better client service and more competitive pricing.

Tomkinson: In the first instance, collateral management is a process that is designed to mitigate risk for all firms, principally by converting counterparty risk into operational risk. However, as the rules and regulatory requirements of collateral are applied, there are inevitably different ways to build a collateral management capability. Firms that are particularly 'balance sheet hungry' have every incentive to build a collateral capability that minimises the trading effect on the balance sheet. With the super-large volumes involved, a small improvement in the collateral management capability can have a multiplier effect, thereby having a significant impact on the balance sheet utilisation. Hence, those firms that are highly balance sheet sensitive are highly incentivised to optimise their collateral management capability in order to deliver increased profitability.

Lillystone: Collateral management should be measured as a service and servant to risk management, and firms should be primarily concerned with the effectiveness of their risk mitigation strategies, of which the cost (or profit) is just one part. Enterprise-wide technology solutions have been developed to focus on features that enhance effectiveness, and reduce resource requirements, such as offering STP, event-driven and exceptions-based workflow, collateral optimisation and analytical techniques, electronic messaging. Naturally, there are ways that firms can either recoup costs or even generate profits, such as through the reuse of collateral, if that is permitted, through paying attention to liquidity, and enabling collateral managers and repo traders to share their inventories, or by ensuring that collateral is optimally allocated.

Leveroni: Today, collateral management is primarily still a risk mitigating strategy, and I do believe that it will always be

Leveroni: Today, collateral management is primarily still a risk mitigating strategy, and I do believe that it will always be its most fundamental purpose. That said, there are real opportunities for some firms to create a profit through re-hypothication, collateral transformation, and implementing automated collateral solutions. The key to devising a business plan around a 'for profit' collateral business is that you cannot lose sight of the primary purpose of the process,

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which is to reduce risk. Fortunately, the two goals—risk reduction and profit in the collateral space—are not mutually exclusive. There are some smart safe moves that firms can take to realise both goals at the same time.

What can be said is that comprehensive, best-practice collateral management is a core risk management process, and managed well it can not only mitigate losses, but can create opportunity for profit, through collateral trading, optimisation, and so on.

How are firms that act across multiple product lines integrating collateral management into their operations?

Harland: The concept of enterprise-wide collateral management has been around for some time, but has not been widely put in to practice. However, with the latest market pressures it seems that the concept is really coming to life; though it is certainly not without meaningful challenges around data, technology and business structure.

Effectively collaborating across internal business lines may not be easy. Firms will need the buy-in of all the people who are involved, investment in technology and strong working relationships. The benefits, however, could be significant. Breaking down silos allows for greater transparency, aggregation and control of data, which will lead to optimisation of collateral. Arguably, it is collateral optimisation along with liquidity risk management that are going to be central to an enterprise-wide collateral management solution.

MacAllan: Most firms will already have integrated collateral management functions, though generally in product silos, meaning that they are supporting operations and technology in product streamser—generally when this is the case it is an enormous challenge to consolidate information across products and gain a truly cross-product view.

But it is becoming clear that being able to view firm-wide exposures across product lines, and ideally, operate within an entirely cross-product collateral technology environment, is a priority for firms. At a recent Lombard Risk webinar event, 90 percent of attendees confirmed that 'cross-product' was a key strategic aim for their firm.

Firms are responding to challenges of the current environment in different ways. Whether the aim is just to provide reporting at a firm-wide level, or to be able to truly consolidate all margin functions into a cross-product environment, firms are focusing on:

- Establishing stakeholder(s) to address global, firm-wide collateral management strategy, breaking down product-silos and providing a cross-product view for both bilateral and clearing markets
- Creating a collateral change programme, engaging front office, treasury and risk and legal departments
- Understanding their technology infrastructure across all product lines
- Understanding the synergies and differences between product lines and technologies
- Identifying best of breed from a process perspective
- Engaging external vendors and internal technology leads to review and establish the best fit for their defined needs.

Awan: Collateral management operations are historically organised in silos with separate pools of collateral being managed independently, per business line (repo, securities lending, treasury and derivatives) and most often by geographical location. On top of regulatory incentives, the relative scarcity of collateral and the fundamental transformation that is taking place in some market segments, such as OTC derivatives, will force firms to better integrate their collateral management functions.

Such integration first requires a deep dive analysis of their current operating models for the management of the firm's collateral assets across business silos, and who owns or runs them. Often, the treasury function is the biggest single user of collateral for funding purposes. However, they are often separated from another key part of the firm's trading activities—the OTC derivatives or rates business. This part of the firm may be giving away the firm's liquidity to meet CCP margin calls while the treasury is borrowing cash, sometimes from the same counterparty with which the OTC derivatives people are trading.

> MacAllan: Firms are responding to challenges of the current environment in different ways

Therefore, the first key decision in redefining a new operating model for collateral management and optimisation is to appoint a collateral tsar—the owner of all the firm's collateral assets. From there, a new operating model that crosses business silos and trading desks can be defined to serve the collateral and funding needs for all of the firm's business lines. The key point to appreciate is that collateral needs to be managed from a single, global pool with a comprehensive view of the entire collateral inventory.

From an operational perspective, switching to an integrated collateral management model is a major challenge for the industry. Collateral management is ultimately about anticipating the worst-case scenarios. Given the scale of the current and future needs for collateral, the question of 'do-it-yourself' versus outsourcing to a specialised service provider will quickly come on the table.

Baauw: Global centralising across multiple product lines is the optimal situation, although I know that this is very hard to achieve for most banks. The problem lies most of the time in the fragmentation of the organisational set up and/or the system infrastructure. I have seen, for example, some banks using different systems for repo and securities lending, with the result sometimes being that they cannot see the long position in the system and cover their shorts externally. This is a small example, but when you are looking at the bigger picture at a global bank with multiple trading disciplines, it is extremely important to have an up-to-date overview of all your assets across the firm, so that you can run your collateral management efficiently across multiple product lines. Besides the almost inevitable challenge to overcome the internal politics, you can do this by interfacing a lot of systems and decommissioning a lot of systems to arrive at one over all multiple product system or put one consolidated multiple asset trading system on top of the existing systems.

Newman: The first step is to get a single inventory of all collateral assets. This gives consumers of collateral the full picture of what is available to pledge and how that inventory is going to evolve over time as assets are returned and used. Next you need to understand all the competing claims on that collateral pool, be they from the OTC derivatives business, exchange traded instruments, CCPs or the funding and stock lending desks. You also have to satisfy central bank requirements. The final piece in the jigsaw is an automated optimisation process that can take all this information into account, along with the differing haircuts and costs that are associated with different collateral movements, and produce the optimal assignment of available collateral to outstanding claims so that the overall cost of collateral posted is minimised. This needs to be a dynamic process because your portfolio will change over time.

So the question should not be, 'What collateral should I use to meet this new margin call?' There should be a regular review of collateral allocations across the board to understand what combination of collateral allocations to collateral requirements will give the optimal result.

Neri: We have helped a number of clients with this process and there are three elements to successful centralisation of collateral management:

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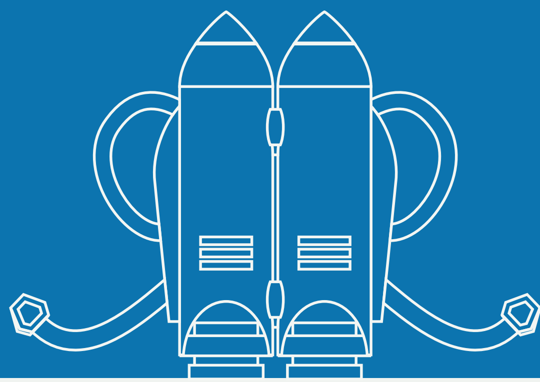

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technology, operations and culture. This equates to changes in systems, processes, and importantly, the mind set of people previously used to working in separate business silos. Firms planning to integrate their collateral management across securities lending, repo and OTC/exchange traded derivatives need to address each of these factors and this can be a complex process.

However, there are significant benefits to centralisation. Firstly, because technology systems can now consolidate views of collateral across product lines, users can gain a clearer snapshot of risk across the entire organisation or determine net exposures with specific counterparties. This will help firms adapt to regulatory change and reporting more smoothly, for example, around the US Dodd Frank Act rules on credit exposure limits.

Tomkinson: The essential issue is that although collateral represents the crossroads for an increasing number of business lines, the various businesses have different priorities

Secondly, this centralised view of collateral can help drive decisions on the best way to deploy assets based on their opportunity cost and the return on economic capital a given trade can generate. Finally, cross product netting could materialise at some point in the future should agreements for full netting of securities lending, repo and derivatives trades become common.

Tomkinson: Generating an integrated collateral management operating model across multiple product lines is a complex process that most firms find particularly challenging. Often, the different businesses have developed along independent lines, with their own technology, operations and control systems. Historically, although there have always been advantages in developing a single centralised collateral pool, the political complexities and financial costs have proved too great for most firms to realise these benefits. The essential issue is that although collateral represents the crossroads for an increasing number of business lines, the various businesses have different priorities, and essentially compete with each other for the control and use of available collateral. Although the firm as a whole may be incentivised to manage a single collateral pool in order to optimise collateral utilisation and therefore balance sheet usage, resolving the conflicts and aligning the different businesses continues to challenge most banks. However, the prize for being successful in this endeavour has never been greater, particularly for institutions that are balance sheet hungry.

Observations of firms that have been successful in making progress in this area indicate a priority to first implement organisational change and to establish a single business head across all of the business areas. Having a single business head with authority to manage across the different business areas appears to remove the log-jam of political conflicts. This enables an effective allocation of resources to the key technical and operational areas responsible for achieving a truly integrated collateral solution, providing the necessary controls to achieve true collateral optimisation and the required balance sheet management benefits.

Lillystone: There has always been a desire, especially on the sell side, to coalesce the collateral management of OTC derivatives, repo and securities lending. This is quite natural, given that repo and securities lending desks will often be the primary funders of collateral for the OTC business, and can also benefit from long positions taken by collateral management. It seems more important than ever that the inventories of each need to be known by the others. However, divisions of responsibility between desks for the subsequent servicing of transactions post-deal, such as re-pricing repos and rebooking amended transactions, can impede developing a cross-product approach.

Many firms are adopting a pragmatic approach beyond this, realising that we are essentially talking about two activities—margin management, and collateral management. One feeds the other—a successfully negotiated margin call needs to be converted into an equivalent, securable amount of collateral—to enable external systems to deliver margin calls to a central collateral management system that offers not only views on the global inventory, but also advanced techniques for optimisation and allocation, as well as handling incidental cash-flows and corporate actions.

While historically exchange-traded and triparty business might have lain outside of the scope of the enterprise-wide collateral management approach, the move towards centrally-cleared OTC derivatives is leading to renewed efforts to draw more business lines onto the same collateral management platform. Ultimately, the development of flexible systems that can enable disparate parties, both inside and outside of the organisation, to contribute appropriately to collateral management processes, is essential.

Leveroni: In the past, collateral management was typically managed in silos, attached to each business line. We are seeing this change with a number of major players on the buy and sell side reviewing and managing at their collateral holistically, but there still is a long way to go. I believe that holistic collateral management will eventually become an industry standard because it makes sense from both a collateral and operational efficiency perspective. To get there, firms must implement flexible robust collateral management technology that can support OTC collateral management, repos, security finance and other collateralised instruments.

Rivett: Many firms traditionally operate a number of collateral management silos that cover specific transactions, like bilateral and triparty repo, securities lending, OTC derivatives (bilateral or cleared), exchange-traded derivatives and client clearing. However, many firms are looking to centralise their collateral functions to increase synergies and maximise liquidity and funding opportunities including new collateral trading functions. But achieving this objective is not just an operational issue. It requires consideration of how collateral management processes tie into treasury functions, and how these activities are reflected in the legal documentation across these trades. This is an on-going evolutionary process, but the involvement of an external provider can help to facilitate this quicker.

Should the need for high quality collateral in large quantities be balanced?

MacAllan: Due to regulatory reform (including mandated margin levels and increasing capital requirements), there is an increasing focus on exposure management, and a reduction in risk appetite. There is a global increase in collateral requirements (quantity) and collateral requirements (quality), and a reduction in collateral availability.

Firms are addressing these issues by focusing on identifying and achieving the optimal (most effective) use of available collateral.

Optimisation is becoming a 'catch-all' term, which actually, when you drill down into it, means many different things to many different people. Depending on who you talk to, the goals of optimisation can be very different, and the scale of what different firms expect to achieve through collateral optimisation is extremely varied.

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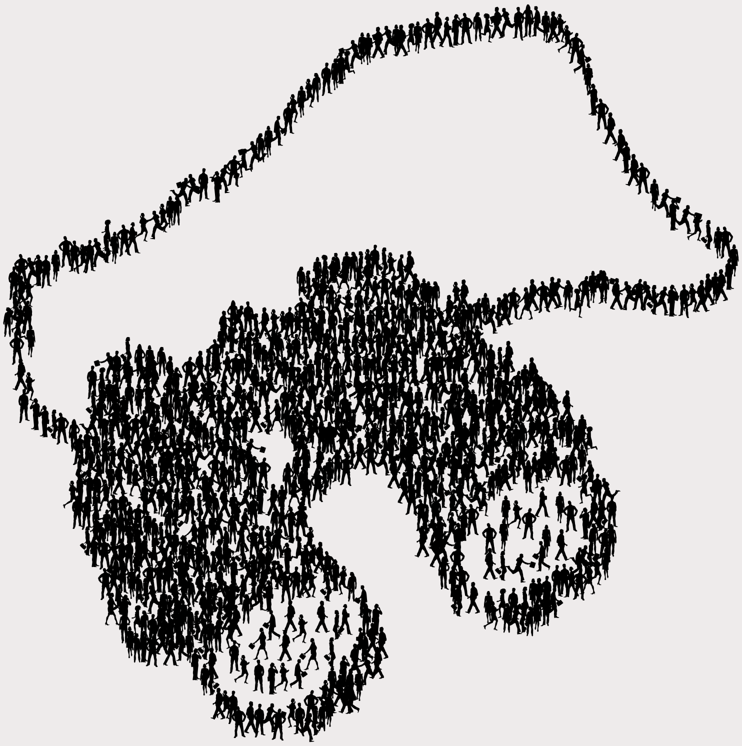

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There is a danger here, because we hear the term 'optimisation' being widely used in the market, and the context is usually one where it is being proposed as the answer to some very real contemporary business issues. However, unless you can clarify exactly what you mean by 'optimisation', you cannot begin to understand how you can achieve it. What is your definition of 'most effective use' of collateral?

Some hope to be able to simply make sure that they are posting the lowest available quality collateral that they can, within single margin call events, and accessing only a proportion of available inventory. Some want to be able to optimise collateral across all their firm-wide collateral obligations, utilising the entire firm-wide inventory. Some want to be able to calculate the cost savings that can be realised through the process of collateral optimisation, and others want to be able to attribute and allocate the cost of collateral back to the trading desks as the source of exposure. At the other extreme, others are looking to establish a triparty optimisation model within their bilateral margin collateral relationships, ie, the full regular and recurring hypothetical sweeps of all pledged assets back to zero, and a full optimised reallocation, which is supported by an automated substitution process to achieve optimal allocation.

Rivett: There is a concern that a shrinking supply of safe assets combined with ever increasing demand driven by regulatory requirements could negatively affect the overall functioning of financial markets. There are on-going discussions to address this issue. Market concerns centre around the level of consistency of collateral eligibility between CCPs, Basel III and central bank funding, and if so, should the eligibility criteria allow for broad or a narrow set of assets? Additionally, if the cost of collateral rises, how will that affect the economics of certain transactions? At present, regulators have commissioned further impact studies on some of these issues. But we believe that the answer is clear: the market will need some flexibility in terms of collateral eligibility, combined with strong risk controls, to avoid a potential liquidity squeeze.

Awan: The need for collateral—or more precisely, the need for high-quality collateral—as a result of new regulatory requirements and multiple major downgrades will become a very strong driver for collateral optimisation. Collateral is not a 'virtual' resource. The best way to ensure collateral optimisation, while keeping safe the variety of assets that are involved, is to pool such assets in a few safe locations. It is important to have easy access to these assets and to your counterparties via the same providers in order to ensure low-cost and efficient use of collateral.

Newman: There are competing demands for high quality collateral across a bank from the liquidity coverage ratio, the funding desks and the collateral management department. Again, getting the complete inventory view is essential if you are going to make rational decisions across the organisation, as opposed to working in silos.

Harland: It is difficult to talk about 'balance' because CCPs are going to be prescriptive about what collateral they accept. When it comes to variation margin posted to CCPs, it has to be cash; there is no balance or flexibility. There is an option for cash or securities as an initial margin, though at present securities will need to be high quality G7 government bonds.

When considering OTC swaps, either cleared or non-cleared, cash remains king, with government bonds second. Other assets, such as corporate bonds and equity, are important in repo and securities borrowing and lending, and will be central to collateral transformation.

The question then becomes 'what can I give as initial margin?' This opens the door to the question of transformation and optimisation and the question of 'how much is it going to cost me?'

Newman: Getting the complete inventory view is essential if you are going to make rational decisions

Neri: While high-grade collateral will most certainly become scarcer, the pain could be eased somewhat by CCPs accepting lower grade assets as collateral and through the use of collateral transformation techniques. There is some debate over whether collateral transformation will be viable for everyone, due to the economics of collateral upgrade trades and associated costs. The regulatory standpoint on collateral transformation may also influence the shape of the market.

Some firms may also simply stop carrying out certain derivatives transactions due to onerous collateral requirements and instead look for alternative methods of trading and hedging risk. Furthermore, collateral optimisation, interoperability between CCPs and more efficient netting and offsetting processes, particularly across product types, could also reduce the need for large amounts of collateral.

Tomkinson: As institutions focus on the changing regulatory requirements and solutions are being implemented, a number of scenarios are being identified that raise questions around the ability of individual firms (mostly buy-side players) to maintain collateral margin payments during more extreme market circumstances, such as the events of 15 September 2008. These events are best described as low probability, high impact events—for example, a fully invested fund manager that is required to deliver large swap trade-related cash margin payments on an intraday basis as a result of being in extreme market circumstances. A variety of these market scenarios are generating the need for institutions to consider the alternative approaches, to identify preferred responses and to plan and implement agreed solutions.

The ability to access high quality collateral in large quantities in the event of severe market volatility is one such scenario. Responding to the need for such contingency arrangements is forcing a number of difficult conversations—for example, for buy side institutions that are employing an outsourced collateral management solution using a third-party service provider such as a global custodian. In such an event, there are expectations that a collateral transformation solution should be included as part of the overall outsourced solution provided by the global custodian.

Practically, this would require the global custodian to pre-agree a series of conditions under which it would guarantee to accept lower grade (non-eligible) margin collateral provided by the customer in order to make available high quality (eligible) margin collateral in return. It is becoming evident that as much as this may represent a solution for the customer, the balance sheet ramifications and costs mean that the global custodian is not in a position to offer this type of service on an on-going basis.

In reality, each institution has a requirement to ensure that it is able to meet its own margin requirements and it is not practical to rely on a single service provider to guarantee a solution (who can be sure of their situation in the event of the need to activate under high stress market conditions?). Hence, there are no prescriptive solutions to these collateral scenarios, and it is anticipated that a hierarchy of responses will need to be identified that will ultimately require the transacting counterparty to model their potential requirements against the available solutions as part of their risk and control functions.

Lillystone: Consolidating margin calls across business areas and creating a single view of

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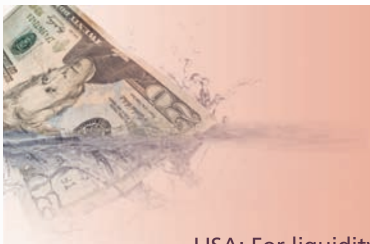

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London, Hong Kong, Luxembourg, New York, Shanghai, Singapore collateral requirements is the first step towards optimisation. With this combined picture, firms will be better able to determine the 'best' way to meet collateral demands. Collateral optimisation is not necessarily only about finding and selecting collateral at the lowest cost. It can also include many other criteria when selecting the assets to use. With the right optimisation engine in place, firms should be better placed for selecting the optimal collateral to use, regardless of the amounts involved.

Baauw: We see a lot of demand for tools on top of all of the triparty agents and their existing trading systems

Leveroni: Collateral inventory will become one of the major challenges in the post Dodd-Frank and the European Market Infrastructure Regulation (EMIR) world. High quality collateral will be available, but it will come at a price. The ability to optimise a manager's existing collateral pool will become a must. But, that only goes so far. Many firms that face a shortage of high quality collateral will need to evaluate the collateral needs of the transactions before the trade is executed, as well as conduct a cost benefit analysis to determine those transactions that are worth the cost of collateral and those that are not. The vast majority of market participants are not doing this today, but will need to in the future.

How is technological innovation shaping collateral management?

Rivett: Traditionally, the industry found itself challenged to replace legacy systems, given the complexity involved. However, increasing client demand is forcing a need for change, as clients need to support their businesses with more sophisticated tools such as eligibility testing, multi-layer concentration limits and substitutions, as well as global availability and 24-hour access to systems. Technological innovation has helped. IT systems are increasingly component-built, allowing functionality to be leveraged—once developed—across different business lines. This offers clear cost advantages.

Equally important are the changes in the consumer industry, which have led to increasing demand for better user experience. Clients are looking for more personalised reporting, or even the ability to have mobile access to data. Collateral management services are not isolated from such trends in technological innovation.

Baauw: I think that this is topic number one for all of the system vendors and consultants based on the requirements their clients have these days. They have been working on system configurations since the day people began realising the cost variation of different kinds of collateral asset classes is not something temporary and the business has been changed forever. At Synechron, we see a lot of demand for tools on top of all of the triparty agents and their existing trading systems, for optimising the collateral flows via algorithms. You can only achieve this by having detailed static data with a dynamic collateral cost price attached for every asset class. The result is that your entire trading book could be optimised thanks to collateral cost transparency. Besides this, your profit and loss reporting will be more detailed and transparent as well, and you will be able to run scenario simulations on your portfolio.

Harland: Technological innovation has always shaped collateral management. As we all begin to seek greater efficiencies and risk mitigation, continued advances will be necessary in order to meet the latest market requirements.

A technology driven firm, BNY Mellon continuously develops its collateral engine around rule-set implementation, market pricing data feeds, and haircut computation. We also modify our proprietary technology for triparty and apply these changes to connect clearing brokers and CCPs for the allocation and reporting of non-cash collateral. In the future, technological innovation for both new and established vendor systems on the market will be of critical importance. We use a vendor solution as part of our Derivatives360 outsourcing service, and the vendor's regular updates allow us to be ready to service our clients post-Dodd-Frank/EMIR.

In summary, technology plays a pivotal role when processing and optimising collateral, especially when meeting the vast number of collateral obligations that are required by central clearing.

Awan: Efficient collateral management solutions are essential to enable market participants to tackle the many operational complexities they face when managing collateral for multiple purposes in different locations. The ability to value and deliver multiple asset types as collateral while taking into consideration the different operational practices across various market segments and counterparties requires technological innovation.

The growing need for high-quality collateral inherent to new regulatory regimes will force collateral resource accessibility on a much broader scale than today. Technology will need to be adapted to meet such huge scale and speed requirements. Technology will also need to support greater interoperability between market infrastructures at all levels of the post-trade processing chain.

Newman: Technology is essential when you are looking to optimise collateral usage—it is not something that you can do by hand for anything more than a few positions. This involves data capture, transformation and management as a starting point and then a sophisticated optimisation engine to sit on top. Collateral allocation problems tend to involve non-linear analysis, which can be fairly compute intensive, so a fast and scalable engine is key. Technology is also automating collateral optimisation, which can result in large numbers of collateral movements and substitutions. Finally, there is the distribution of management information. The collateral process can produce a lot of detailed information, and providing intelligent summary information that enables managers to take actions helps cut through the noise and lets people understand the key aspects of their operation: where is the concentration risk? Where does the process break down? How efficient is my allocation algorithm? This holistic view of enterprise collateral management is made possible by technology.

Tomkinson: The complexities of collateral management solutions are highly technical, so technical innovation is fundamental to shaping the changes underway in collateral management.

The need to work at an enterprise level with a single consolidated collateral pool across numerous product silos has challenged the markets for some time. Recent technological focus has generated solutions to realise this vision—albeit at different levels of sophistication, as individual firms identify and address their own specific business needs.

It is possible to identify three key stages in the collateral management evolutionary process of most firms. The first stage simply addresses data integrity and ensures that data is captured in an accurate, timely and usable form. Good examples are the codification of legal documents into operationally readable form and consolidating settlement data from different sources. The second stage involves maximising the data integration processes—improving operational efficiency and processes. The third stage, which is currently the focus of a number of the more sophisticated firms, provides the real value-add processing, often driven by the overriding need to minimise balance sheet utilisation that results from collateral optimisation algorithms and sophisticated operational practices such as monitoring the opportunity cost of collateral.

Neri: Technology is helping collateral managers to automate manually intensive operational processes, and improving the flow of data on exposures and collateralisation throughout the organisation. This is allowing more time to focus on strategic decision making about asset allocation and liquidity.

Technology is also driving cutting-edge optimisation techniques that are rapidly becoming a necessity for balance sheet management in the new regulatory environment. Optimisation is helping firms make better use of valuable collateral and enabling a smoother transition to the regulatory capital requirements that are laid out in Basel III.

Once the migration of standardised bilateral derivatives contracts to CCPs is fully underway, technology will also help collateral managers to make best execution decisions based on each CCPs margining criteria and netting capabilities. Finally, collateral management systems will allow users to forecast exposure scenarios and resulting margin requirements through the lifecycle of a given trade more accurately. They can then price this into the cost of collateral calculation and predicted profit and loss at the start of the trade, and make more informed decisions on which trades will be most profitable.

Lillystone: Firms can now handle hundreds if not thousands of active agreements across multiple business lines at once, automatically generating and publishing margin call information, performing daily reconciliations of portfolios, accessing global inventories, which are often distributed disparately, and helping to negotiate and settle collateral within ever tighter deadlines. This would not have been possible without the application of technology and technological innovation.

In these times of heightened awareness of visible and hidden risks, collateral managers need to keep all their interested parties, both internal and external, integral to and informed of current and potential situations on an almost continuous basis.

It is in this area where collateral management is harnessing new technologies, such as through the use web-based tools, new data-mining techniques, and advanced data visualisation solutions. These extend the reach of collateral management within firms to offer counterparty-facing interfaces that draw the margining parties closer than ever, to deliver user-definable reporting, and also to offer self-service collateral management portals.

Self-service portals enable collateral managers, whether service-providers or not, to deliver fundamental as well as advanced features and functions to others, both inside and outside of the organisation. Collateral management now has practical tools and solutions that enable them to rely on portals to handle interactions with customers and custodians, such as enabling customers to choose eligible collateral from that available in the portfolio to satisfy a negotiated margin call, and for custodians to be made immediately aware of the agreement between the collateralising parties.

Communication between parties and custodians is now migrating from the flimsy, insecure telephone/email paradigm for negotiating margin calls, reconciliations and collateral transfers, to one founded on resilient, fault-tolerant, guaranteed-delivery electronic messaging. While this has long been discussed, it is finally but slowly coming to market.

Leveroni: Technology is the foundation for almost everything that we have discussed. Managing a daily collateral management process, thriving in a mixed cleared / non-cleared environment, and facilitating collateral optimisation all require an automated, efficient technical solution. If a firm wants to truly manage their counterparty risk, spreadsheets and manual processes are just not good enough anymore. The required collateral calls are too frequent, collateral eligibility has become too complex, and the overall collateral will be in short supply. Simply put, technology allows us to eliminate the potential for a repeat of past mistakes, while well preparing us to capitalise on future opportunities.

MacAllan: To an extent, technological capability has always shaped collateral management. Many of the standard practices that we see in the market today have been defined by early technology solutions and the extents or limits of their capacities.

More so than ever, firms are looking to technology to provide the tools with which to meet the current challenges of the collateral market, across products. Frequently, in all but the largest firms, internal change and technology teams do not have the capacity to support change at a sufficient rate to meet all emerging requirements in this space, and so are looking to third-party vendors to provide solutions.

Technology vendors see the current environment as a double-edged sword—it is a rapidly changing environment that presents a challenge, as today's solution may not be fit for purpose for tomorrow's as-yet-unknown requirements. However, it also presents a golden opportunity to innovate and design configurable and flexible tools that can be adapted to the shifting demands of the market.

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Quality over quantity: IT in securities finance

SLT catches up with Sander Baauw and Raymond Vuyst of Synechron about how they are steering the IT company towards a strong securities finance brand

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Why did you decide to join Synechron?

Sander Baauw: Raymond Vuyst and I were both at ABN AMRO, and before that we were at Fortis GSLA for more than 10 years. I was running the equity finance desk and Raymond Vuyst was running the IT solutions department for equity finance and equity derivatives. We never thought about leaving ABN AMRO, but Synechron gave us the unique opportunity to set up a fully fledged global securities financing business consultancy practice on top of the already existing successful IT solutions and services practice.

Raymond Vuyst: Synechron is a privately owned young, dynamic company that was founded in 2001. It is profitable since inception and is growing every year—it has 4000 members of staff at the moment but that is increasing every month—and it has an open culture that stimulates any new idea. We thought that this is the kind of company that we want to work for and move ahead with.

Where do you see the consultancy practice heading?

Baauw: There are different kinds of consultants around in the market, but they can usually be put into four categories. There are the pure business consultants that do very expensive 200-page presentations on organisation and governance, which are general and not really specific to a particular market, such as securities finance. Then there are the massive IT consultancy firms from India that service a variety of industries but with a limited amount of specialised domain expertise in a niche market such as securities financing. And there is the one-man band that does specialised work.

Vuyst: We do not fall into any of these categories—we fall into the fourth category. In the past, Synechron's practice has always been focused on banking, financial services and insurance IT services and solutions. Now, with the new strategy, business consultancy is an extra specialty on top of it. Our style of consultancy is really hands-on and focused on pragmatic execution. We do not have a consultancy background, but our differentiator is that we have been practitioners for a long time in the centre of the entire value chain of securities financing and we have experienced it all ourselves. In addition to this, we have enough back up from our very experienced IT staff to scale up and down fairly easily during a project.

What do you do when you are called into a business?

Baauw: We see what we do as a four-step programme. We do business consultancy as step one and this could cover, for example, a SWOT analysis, a gap analysis and an execution plan for the next couple of years. This could then result in strategic decisions such as opening a desk in a new jurisdiction because there is more flow coming up due to new market circumstances. The second step is analysing the existing IT environment that is in place. This means that we look at the current IT systems and review whether these systems will continue to function properly during the next few years according to the requirements. The other options are to build an entirely new system or to buy one.

Vuyst: Once this analysis is made, we move to the third step, which is testing, application development, documentation, and making sure that everything has been executed and implemented according to the client requirements. The fourth and final step is support and monitoring, from both a functional and a technical angle. This can all be done in cooperation with the internal IT department and/or other vendors. Alongside this, a key component of each project is to decide with the client what the optimal ratio between onsite and offshore recourses is in relation to quality and cost.

Baauw: Those are the four steps that we offer when going into a business, but some clients do not require us to carry out all of them. Some clients will need just consultancy services, while others want us to analyse, implement and execute, and then carry out testing and so on. Of course, a specific combination of these steps is always possible, but what we also heard a lot when we were speaking with people at the International Securities Lending Association conference in Madrid was that opting for a combination of steps could cause problems.

Vuyst: The main problem that could arise is the interpretation of documentation that is created by another participant in the value chain and this could result in a lack of clarity and disconnect. But of course we offer and do all four disciplines separately or in any possible combination.

How do securities finance businesses tend to operate—do they go for all four steps or a combination?

Baauw: Most of the time you see a combination, but from time to time you see the entire chain. You see this, for example, in the set up of a new desk or when the plan is to launch a new product. But there is not really one answer to this question because every bank and trading desk has a different structure, scale, number of entities, complexity of products, and so on.

Vuyst: We have seen companies with really sophisticated IT environments, which only look at step four, so we monitor and maintain their legacy systems offshore. Others could be a start up, in a growing phase or undergoing a re-organisation, so they need all kinds of advice and analysis on all kind of topics.

Baauw: On the other hand, sometimes you see trading desks or investment banks thinking that they require a different system to adapt to upcoming changes so they can grow to the next level, but they do not really need it. They only want to buy and bring in a brand new system because they have worked with their existing system for so long and they think the grass looks greener elsewhere. When we come in, we can look at these things with a fresh pair of independent eyes and advise accordingly. If we do not need think that the systems or processes need to change, then this is what we will advise because we always aim to have a transparent relationship with our clients for the long run.

How are securities finance trading desks doing at the moment?

Baauw: Everybody knows that the golden years are behind us and I doubt if they will come back in the next coming years. The securities finance trading desks are trying to keep up flow, which is certainly not always easy, and they are also dependent sometimes on external factors. The larger firms will always get some flow and most of the time they will try to spread it to the larger firms on the other side. But the smaller or medium-size trading desks have the advantage that they can quickly change to a different strategy or adapt to a new situation. This is also what we sometimes see on the IT side. If there is a large bank with multiple locations and with 10 different systems, it is not always easy to change something. If you have one desk with four equity finance traders, two people on the collateral desk, one repo trader and a couple of people on the operations, it is easier to change the IT environment.

Vuyst: The trading desks are always looking for new opportunities, but that is not easy to find these days. On the other hand, the result of this is that the front office is not only becoming more cost aware, but is also becoming more value aware. They are assessing whether the environments and processes in which they operate are still optimal for them. They are very aware of other things—not just trades and new opportunities and so on—they are also looking at the operational and technical sides.

Baauw: The process that Ray Vuyst described has of course had the same impact on profit and loss. Another aspect, which is also changed, is the client side. In the past, it was easier to grow profit on the client side. Finding new clients was just easier to do 10 years ago. It was possible to visit all kinds of countries and find smaller, new players that you had never traded with before. Nowadays, if you—under the existing circumstances—try to do the same you will experience more obstacles from the enabling units that are more careful about risk, compliance and procedures.

Vuyst: One of the other major shifts in interest of the trading desks for the last couple of years is on the collateral side. The pricing of asset classes is done in detail these days and this can make or break your trade. Next to this, the global inventory management of collateral for an entire company is extremely important across all disciplines. To have this entirely automated and with real time reporting and dashboards is one of the biggest challenges for all stakeholders.

What are you charged with achieving at Synechron?

Baauw: We are focusing on securities finance worldwide with a strong focus on business consultancy and IT solutions and services. But in Europe, we are also trying to expand in other areas of the capital markets, such as commodities, via the existing contacts that we have built up in the securities finance market during the last decade.

Most of Synechron's clients have stayed with the company for years and they continue to do so. Without achieving customer satisfaction and creating that staying power, a company can have a very bumpy clientele where clients come and go, which means that there is no pulling power behind the brand. Synechron is not in this situation—when it attracts clients, they stick around.

Vuyst: This is what we want to replicate and build on in securities finance. We want to develop an even better brand and also become well known in our market. We can do this on three ways: (i) expand the work that we do with current clients, not only in securities finance but in different areas that the client operates in as well; (ii) attract new clients, because there is still a lot of potential clients that do not know Synechron, especially in this area; and (iii) set up and expand the business consultancy practice.

Although we are a fast growing company, our goal is not to be the biggest in the market, but we try to be the best in the market. This way we automatically gain good and solid client references by focusing on client satisfaction. This is a core value of the company. In securities finance, we will get customer satisfaction through excellent execution and being able to work in an agile way with a client and other parties that are involved. **SLT**

Raymond Vuyst
Managing director—continental Europe business
Synechron

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Synechron

Following the collateral road

James Tomkinson and Alec Nelson of Rule Financial venture onto the long and winding road to collateral optimisation

Collateral management continues to present the market with one of its most demanding challenges for years. New regulations require banks to demonstrate control of their own and their clients' assets and have forced many institutions to review and implement change, which in some instances has resulted in a complete review of their collateral management processes.

Regulatory changes are designed to encourage firms to manage risk and strengthen their balance sheets by maintaining higher levels of capital adequacy. However, most banks have not traditionally had sophisticated collateral management systems, and those that have had them, regularly struggled to integrate the different collateral management solutions across the enterprise.

The enterprise-wide collateral management challenges have resulted from the traditional 'business silo' approach that is regularly employed by sell-side firms which is an approach that has traditionally resulted in little or no operational synergies between the collateral management functions supporting the different business.

However, recent events have forced banks to refocus on their collateral management processes and procedures. With a market back-drop that is best summarised as 'uncertain', many of these initiatives remain in a state of continual review and development.

- Maximise margin netting capability across all products
- Maximise STP / minimise exception management.

To achieve these objectives, there is an overarching assumption that there is a need to optimise (maximise the value) of available collateral and to minimise the balance sheet usage to the firm.

Inevitably, progress in achieving these objectives varies considerably between different institutions, and while there are some firms fine-tuning their collateral optimisation capabilities, most sell-side institutions continue to struggle in breaking down their internal business silos and centralising their collateral management capability.

The need for banks to focus on their collateral management strategy is becoming more urgent and is being driven by:

- Regulatory changes (and increasing costs of transacting for those not complying)
- The need for balance sheet efficiency
- Traditional lack of focus on collateral processing
- Greater levels of sophistication amongst service provider offerings
- Rapidly changing infrastructure with the increasing number of central counterparties / swap execution facilities
- Increasing need to optimise the use of collateral.

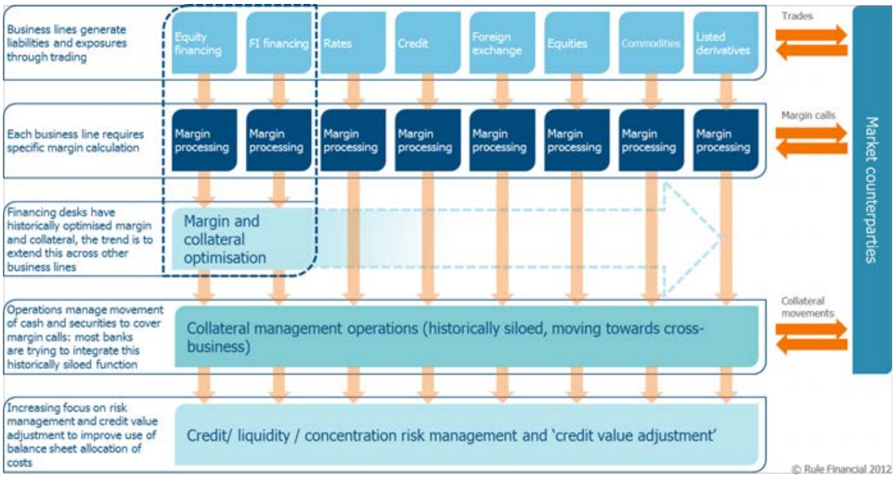

Figure 1: A summarised view of a typical target operating collateral management model

The key objectives of a model such as the one in Figure 1 are:

- A single centralised collateral management function
- Single margin movement across all netable collateral products

Collateral management and market developments

Traditionally, the location of the collateral management function within a firm has been dependent on the type of institution, the level of collateral related business activity and the importance / cost of collateral to the business. Historically, sell and buy-side institutions have great differences in their capabilities, and in the location of the collateral management desk within the firm.

Sell side—highly developed

Over the last two decades, the sell-side players have developed more sophisticated internal mechanisms that are designed to maximise the efficient use of their collateral (increasing the ability to mobilise collateral in order to maximise its value). Accompanying these internal initiatives, there have also been market infrastructure developments, such as greater access to more markets, improved settlement arrangements and triparty repo service enhancements, for example. However, one of the key challenges facing the sell side is the firm's conflicting internal collateral demands resulting from the different internal business users of collateral. This can be further compounded by the differing geographic location in which collateral is held.

Buy side—generally less developed

Over the same period, the buy side which was without the same business need as the sell side to maximise the value of their collateral, have not developed their collateral management capabilities to the same extent. There are still many buy-side institutions that have developed relatively sophisticated collateral management capabilities. However, it is generally considered that the lack of dependence on collateral by the buy-side players has resulted in a less focused and a more piecemeal approach to their collateral management capabilities, with few buy-side institutions having an automated or integrated collateral management solution across different business products.

Credit and collateral management: post-September 2008

Following the 2008 crisis, there was a seismic shift in the collateral management space, as the long term effects of the Lehman Brothers's default started to play out. Institutions that traditionally relied on uncollateralised credit lines have effectively seen their traditional funding sources dry up, with emergency European Central Bank funding now being systematically accessed where necessary. Where credit cannot be found, then collateralised funding arrangements have become the key.

The inefficiency of collateral silos that are traditionally found in firms has come under increasing scrutiny, as firms have been forced to consider smarter ways of using the limited collateral that they have available. In many instances, this has resulted in the implementation of new processes and procedures in line with Figure 1, as firms rethink their collateral-related operating models.

Collateral and credit—the link

The market's need for collateral is inextricably linked to its appetite for credit. Since the events of September 2008, there has been a significant review of the credit arrangements being employed throughout the markets, and this has resulted in a sharp reduction in the amount of uncollateralised credit that is available between transacting counterparties. As the value of interbank uncollateralised credit has declined, the demand for collateralised credit lines have increased, which in turn has generated a sharp focus on the various mechanisms that are available to support collateralised solutions.

Common market challenges for collateral management

The underlying requirement for institutions to improve their collateral management capabilities appears in many forms depending on the type of institution. But there are a number of recurring themes:

Entrenched business silo-based collateral operating models

Despite attempts to manage synergies between the different collateral business areas, the process of merging common functions often proves difficult to achieve in practice.

Although increased pressure to implement an enterprise approach to balance sheet management is applied, the siloed business structure prevails, leading to widespread sub-optimal use of collateral and therefore poor balance sheet utilisation.

Inadequate technology

Few institutions have in place the integrated technology capability to manage their current and future collateral management needs. Many are still struggling with ageing, silo-based systems, even if they are integrating their operations.

Ability to capture and effectively manage reference data

Accessing and capturing the collateral-related, commercial content of different legal agreements across different business areas on an enterprise-wide basis is challenging. In particular, meeting the need to accurately reflect the commitments of legal agreements in daily operational processes is often difficult.

The future?

Banks cannot continue to merely 'manage' collateral operations. Dramatically increased commercial needs require banks to create collateral trading desks, integrating collateral processing across their business lines. Operations areas are increasingly required to provide 'value-added' services to their traditional settlement functions, contributing to collateral optimisation and therefore balance sheet management.

We have identified three clearly defined levels of collateral management evolution:

Foundations of collateral measurement

Making sure that the basic elements of collateral management—documentation; pricing and valuation; inventory; settlement; asset-servicing and compliance—are correct. Practices such as linking collateral eligibility criteria of legal documents into operational events still represent a significant challenge for most firms.

Management, control and efficiency development

This involves extracting value by fine-tuning and improving the operating model, workflow, reporting, risk, reconciliation, availability, trade-automation and STP.

Collateral optimisation

This involves competitive differentiation through re-hypothecation, risk weighted assets / balance sheet optimisation, trader tools and P&L, 'what if' scenario / portfolio modelling, risk analysis, and collateral optimiser 'engines', that monitor collateral for the 'opportunity cost' of its use, initiating substitutions where necessary.

The third level of evolution is a true 'value-add element', and would traditionally not be found in an operations area, but the economic effects of these activities are becoming increasingly important as institutions focus increasingly on collateral optimisation in order to achieve balance sheet efficiency.

True collateral optimisation requires banks to move from the foundation level through management and control, to optimisation. This 'journey' will require the resolution of issues of operational efficiency and business silo fragmentation along the way, so that real value-add can be delivered to the enterprise.

The path to collateral optimisation

A structured approach

Adopting a proven and structured approach for the collateral management journey helps banks to get the results that they want by aligning thinking across business divisions and geographies, and between business and technology. This strategic phase of a project is typically followed by a strategy. This approach is commonly referred to as 'Dynamic Process Modelling' (DPM).

Using experienced DPM practitioners, collateral management improvement projects can be executed quickly and efficiently, maximising communications with key stakeholders while minimising distraction of staff from other day-to-day priorities.

Each of the steps results in clear deliverables, demonstrating visible progress at every stage, and ensuring that the required improvements occur. This process needs to be supported by architecture modelling and road-mapping tools, which can facilitate rapid scenario planning, enabling the bank to evaluate alternative approaches and to quickly make informed decisions on the optimal and bespoke approach for the enterprise.

Despite the lack of full regulatory certainty, most banks now have collateral management initiatives under way.

The way forward is likely to be a long and winding road, with firms being required to achieve regulatory conformity, to reduce operating cost and position themselves in order to optimise their collateral and balance sheet usage. SLT

Dodd-Frank and EMIR requirements

The US Dodd-Frank Act and the European Monetary Infrastructure Regulations (EMIR) require swap contracts to be traded through electronic platforms and to be cleared through central counterparties (CCPs). It is reported that sell-side institutions are already pricing transactions to reflect the ability of the buy-side counterparty to ultimately comply with the regulations. This illustrates how the cost to the buy side of transacting swaps will inevitably increase as participants either invest in infrastructure development to support the margining process of the swap trade, or be subjected to increased swap transaction prices for non-compliant players.

Most buy-side firms have now embarked on a process to develop the necessary connections to CCPs. These are normally via a general clearing member and for contingency reasons there is a recommendation that at least two general clearing members are engaged.

A key question for buy-side firms is whether to keep their collateral management operations in-house or to outsource to a third-party service provider such as a global custodian. Those that have decided to keep full control of their collateral management solutions have embarked on self-build or in-house implementation, while for firms seeking to outsource their collateral management needs, there are a number of solution providers that are offering an increasing range of bundled services; including clearing, collateral and custody-related services. Only time will tell which proves to be the better option.

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Automating markets in a regulated world

Ted Leveroni of Omgeo assesses the size of the undertaking that is facing those that deal with collateral as new regulations take hold

One of the initial goals of regulations such as the US Dodd-Frank Act and the European Markets Infrastructure Regulations (EMIR) was to make markets simpler. In reality, however, they are making things increasingly more complicated. In fact, many believe that regulations are creating the need for more automation across the financial markets, because without more technology, the evolving regulatory mandates will be too difficult to manage. This is particularly true in the derivatives world, with the move to central clearing of OTC derivatives and the increasing demand for automated collateral management services.

The notion under which Dodd-Frank and EMIR were created seemed simple enough—give the same clarity to OTC derivatives clearing that is given to futures. Initially, some thought that they could simply shift their existing futures clearing capabilities to OTC and satisfy their obligations, but that is not the reality. To start, the centrally cleared capabilities that we use for futures today have not become an established best practice. One might suggest that a best practice would be to take a page from the OTC model and have oversight, controls, checks, and collateral calls built into the process. It is not a simple undertaking, however, and there is a need to invest in technology to prepare for the change.

According to research firm Celent, an estimated 40 to 50 percent of OTC derivatives contracts are expected to be cleared by the end of 2013, leaving a $2.5 trillion collateral hole to fill. Firms will need instant access to exposures—to know where they stand at any moment, look at their collateral holistically and facilitate clearing. There is no way that the market can manage its collateral and risk management operations without proper technology to support it. Relying on the current methods of manual processes and spreadsheets is not sustainable.

There are a number of areas where automation can benefit the new OTC derivatives environment. To start, regulations are set to impose more rigorous initial margin requirements for all trades, which will surely increase the number of margin calls in the mixed clearing environment. Every institution—big and small—will have to put up collateral for each derivative transaction. As a result, even the larger investment firms or more credit worthy management houses, which typically would never post an independent amount to their broker, will no longer have that ability. New systems and processes will need to be in place to manage the heightened amount of calls across the market.

The industry is also going to see a loss of exposure netting from firms that currently clear through multiple central counterparties (CCPs) and clearing brokers. In today's bilateral world, these firms can offset, or net, their exposure across multiple transactions with the same counterparty. With trading dispersed across multiple clearing venues, firms will not be able to 'net out', requiring firms to not only have more collateral on hand to cover the same amount of trades, but to also have the ability to quickly assess what collateral they have on hand to make the trade take place. There has been talk of CCPs working together and allowing netting of collateral across the industry, but again, there are many technical and business hurdles that would need to be met to make that a reality.

There is going to be an overriding need for buy-side firms to be able to optimise their collateral usage at all times through improved, holistic management of their margin and collateral calls, as well as for consolidated reporting purposes. Improved collateral allocation processes will certainly make firms smarter and more effective around collateral use, and it is an area of operational investment that is urgently needed at firms across the globe.

It is clear that the transition to a mixed clearing environment is not going to be as straight-forward as once imagined. In order to be effective, the operational process of moving OTC derivatives to a central clearing environment as demanded by regulators is going to take time and investment—from both a process and technology perspective. With deadlines looming, the buy side needs to start assessing how they can best invest in upgrading their current technology. Automation is a welcome change that, in the end, will allow firms to satisfy regulators' needs while bringing the increased levels of transparency and confidence that is urgently needed. We just need to be sure that we take the proper steps in getting there before it is too late. **SLT**

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SLT SECURITIES**LENDING**TIMES

BNY Mellon launches Global Collateral Services

Mark Higgins of BNY Mellon explains what Global Collateral Services can do for its clients ahead of regulatory reforms

New regulations, heightened risk sensitivity and fast-changing market dynamics are combining to make collateral management more critical than ever. To help market participants navigate in this uncertain environment, BNY Mellon recently launched Global Collateral Services.

Global Collateral Services builds on BNY Mellon's strong institutional capabilities to offer collateral management, collateral finance, securities lending, liquidity management, and derivatives services under a single business unit to help clients deal with the wide range of regulatory and market challenges that they face.

BNY Mellon has long served clients' collateral transaction needs, including the first ever tri-party repo transaction more than 25 years ago. We offer sophisticated and innovative collateral services to a wide range of clients including institutional investors, broker-dealers, banks, sovereign wealth funds and asset managers.

New regulations affect collateral

New regulations, heightened sensitivities regarding default, counterparty exposure and volatile market conditions have increased the demand for collateral management services for both buy- and sell-side clients. BNY Mellon is positioning itself through Global Collateral Services to play an active role in helping clients to understand the changing environment as new regulations are implemented. The Dodd-Frank Act in the US, Basel III and the Alternative Investment Fund Managers Directive in Europe, along with several new regulatory proposals in Asia, are changing the face of collateral management.

Among the new regulations are sweeping changes to the OTC derivatives markets that will be adopted in the coming months. The rules will require certain OTC derivatives to be standardised where possible, so that they can be centrally cleared and traded on an exchange. The movement to central clearing and the role of central counterparties (CCPs) will create added complexity and potentially increased frequency of margin calls, especially in times of higher volatility.

As a result of these changes, firms will have to secure certain swaps exposures with collateral, a process that was previously managed informally under bilateral arrangements. These regulatory mandates are resulting in an unprecedented need for collateral, and whenever collateral is required, there is a need for effective collateral management.

SOLVE your collateral challenges

Managing collateral effectively in the new business environment is no simple proposition. It requires a level of expertise that few firms currently possess or are prepared to acquire. To help our clients address their collateral challenges and needs, BNY Mellon's Global Collateral Services created SOLVE, an innovative mix of capabilities that provide end-to-end collateral management services.

Segregation—BNY Mellon offers one of the most extensive safekeeping services in the industry, with more than $27 trillion in assets under custody and administration. We segregate collateral in collateral accounts, which provides much-needed transparency and a strong element of risk mitigation in secured transactions. The scope of our services enables us to provide collateral services for most types of securities.

Optimisation—Global Collateral Services provides optimisation capabilities that help to better deploy each piece of collateral relative to the entire collateral pool being managed. In addition, our proprietary collateral management platform automatically allocates collateral in accordance with predefined client criteria.

Liquidity—This is a critical element throughout the term of a collateralised transaction. Our clients have access to an innovative investment portal that is designed to help clients maximise liquidity every step of the way. This investment portal includes specialised margin services that enable clients to safekeep margin balances, access a wide range of money market funds, and invest directly in individual money market securities through our affiliated broker-dealer.

Value—Global Collateral Services brings added value to the collateral management process through BNY Mellon's securities lending and financing capabilities. We are one of the largest providers of securities lending in the world, with approximately $325 billion in average daily loans outstanding. We collaborate closely with institutional investors and broker-dealers to maximise lending terms and mitigate counterparty risk.

Efficiency—Through BNY Mellon's pioneering collateral management capabilities, we have built a reputation for efficiency and reliability. This is largely due to our ability to handle a wide range of securities that can be pledged to secure obligations under many forms of transactions, including repurchase agreements, securities loans and derivatives transactions.

Collateral management evolves

Collateral to secure derivative exposure was once thought of from only an operational standpoint—a simple bilateral transaction between broker-dealers and their clients and counterparties. Viewed as operational, front office investment professionals rarely took notice of it. All of that changed at the start of the financial crisis in 2008, when seemingly solid financial institutions suddenly went out of business. It was then that collateral management along with counterparty risk, the location of assets, and the use of leverage, came into greater focus.

The financial crisis led firms to question the creditworthiness of their counterparties and led to liquidity issues for many firms. Eager to avoid the consequences of another borrower or counterparty going bankrupt, and looking for more transparency, collateral management quickly became a much more important discipline.

The use of collateral has since been on the rise and ISDA's 2012 Margin Survey shows a sharp increase, with collateral in circulation rising 24 percent, from $2.9 trillion to $3.6 trillion, over the course of 2011 alone. The increase is primarily as a result of the eurozone debt crisis, downgrades of financial firms and declining interest rates.

As collateral becomes more critical for multiple uses, demand across asset classes is expected to increase. Therefore, the ability to use securities in addition to cash as collateral has become more relevant. This will require further connectivity across the cash, bond and equity markets as market participants become more focused on 'enterprise wide collateral management'. This involves business functions becoming aligned to a common goal of supplying enough collateral to meet market and regulatory demand.

Securities lending plays an important role in today's capital markets and the benefits extend to both the buy and sell sides. The buy side can put assets to work and enhance returns. In addition, market participant needs are evolving with OTC derivatives moving to a centrally cleared environment and the greater demands for collateral to be posted. As an example, the sell side can utilise securities lending arrangements to effectively transform securities that are ineligible for posting as collateral to clearinghouses into higher quality eligible collateral and to otherwise support liquidity and financing needs. Collateral transformation will be increasingly important to the sell side as new regulations will require clearinghouse participants to pledge high-quality securities to secure their obligations, especially in connection with derivatives transactions. BNY Mellon has the sophisticated services to facilitate this process, and with approximately $325 billion in average daily securities loans outstanding, we are one of the largest providers of securities lending services in the world.

We have extensive expertise helping clients to utilise and maintain collateral efficiently, which will be increasingly important as they confront the new regulatory and market environment. By just about any measure, the use of collateral is projected to grow substantially in the coming years. This presents many new challenges and opportunities for market participants. With BNY Mellon's Global Collateral Services, our clients will have the operational control and comprehensive capabilities to manage their collateral more effectively and efficiently. The changing regulations mean that a good partner, such as BNY Mellon, can provide substantial help to clients dealing with the implementation of the new rules and can help them to mitigate risk, unnecessary costs and potentially maximise revenue opportunities. **SLT**

Mark Higgins
Managing Director, EMEA business development
BNY Mellon Global Collateral Services

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A friend to both sides

SLT talks to Neil Murphy of IBM Algorithmics about what is in the pipeline for buy- and sell-side participants

MARK DUGDALE REPORTS

As the largest collateral management vendor in the market, and now part of the new IBM Risk Analytics business, can you share some thoughts on what different industry participants are looking for?

Regardless of whether they are buy or sell-side participants, firms of all sizes have traditionally looked for automation and control when seeking to manage their collateral processes. While collateral management may not require the same level of complex calculation as other areas of risk management, it does need to manage large sets of data across wide parts of an organisation, and be able to communicate with other market participants. Managing the often disparate processes effectively can only really be achieved by automating the entire process: data capture from several sources, margin call calculation, client notification, reporting, and so on.

While large investment banks have long recognised that at the heart of a good collateral process is a highly developed workflow, we now see this is as accepted by all market participants. When talking to firms, it is workflow, and the automation that it brings, that is usually top of their list of requirements. Workflow is probably even more important now, as firms need not only the operational control and automation that it can deliver, but they are also coping with the huge level of changes that are under way in the market. Firms are looking to vendors for support with new initiatives around the US Dodd-Frank Act and the European Markets Infrastructure Regulations and to bring these directly into their workflows.

On top of automation and control, an ability to follow regulatory change and to adopt market practice also tops the list of needs of firms that I talk to these days. While internal systems development has often been seen as sufficient for many firms' needs, there is growing consensus among firms that regulatory change, and the associated impact on the collateral process, are sufficiently large to only be capable of being addressed by vendors.

From a technology vendor perspective, we also continue to see that firms want best of breed solutions, both in terms of technology that is available, functionality, and also in choosing their partners. There is recognition that a software relationship lasts several years, and for that to be successful, it requires a level of trust and confidence that firms have chosen the right partner.

Buy-side firms have traditionally been seen as slow to embrace the collateral market and fewer firms have invested in their own collateral systems. Does this point to an inability for technology vendors to support their business needs or a unique set of requirements on the part of buy-side firms?

I don't think that it's a case of either of these factors, but something entirely different, namely an evolving approach to risk management on the buy side. While the bulk of collateral vendors' clients may be on the sell side, this is a reflection that sell-side firms were the first to invest in third-party systems to support their larger trading volumes. If you examine the operational requirements for collateral, they are largely the same for both buy- and sell-side market participants. Therefore, if it is possible to support the sell side on one side of the trade, then the process of margin calculation and processing should be largely the same for a buy-side firm. IBM Algorithmics has experience of providing collateral management solutions to both sides of the market, including banks, asset managers, hedge funds, as well as to custodians and fund administrators that provide outsourced solutions for the buy side. We see support for these outsource providers as logical, given that it allows them to focus on offering operational excellence, while leveraging best of breed systems from a technology perspective. Further, in working with IBM Algorithmics, firms may be able to offer a more comprehensive suite of risk and valuation services.

For the buy side, the key differences from the sell side are in fund structures and the operational challenges linked to this, such as communication with a single broker, possibly on behalf of hundreds of funds. Simplifying the margin call process on behalf of buy-side firms, and also for brokers dealing with fund managers is one area in which IBM Algorithmics has focused on recently, and wider market initiatives around collateral messaging are further aimed at improving margin call communications for all market participants.

I do think that it is true that over the last decade, buy-side investment in collateral management solutions has been markedly lower than that of the sell side, but this reflects a different investment and technology approach of many firms, and is not specific to collateral management. However, post-crisis, the approach to broader risk management requirements is changing rapidly on the buy side. This approach is marked by greater investment around the entire risk process, from real-time market risk analysis to counterparty limit monitoring, and implementation of what can be described as a broader risk infrastructure. With this, we are also seeing greater investment in collateral management. The approach of buy-side firms to investment in risk management is that not only is it a necessary expenditure, but there are tangible benefits. In some ways, we can say the buy side is putting in place a similar set of practices as their bank counterparts.

Given this move to embrace collateral on the part of the buy side, and recognising the myriad options that they have, are there any particular areas that they should particularly focus on?

It's true that buy-side firms have a variety of options available for collateral management. They can manage in-house, either through self-development or use of a vendor platform, or they can go down the route of outsourcing, either part of the process or a full-service option. At the end of the day, whatever collateral solution they choose, the goals largely remain the same, namely effective risk management of the collateral process.

There is no doubt that outsourcing is an attractive option to many on the buy side given their frequent reluctance to host solutions. But firms need to ensure that they are comfortable with the actual service being offered, given the growing number of options in this area. A common concern is prioritisation of 'my' collateral activity since no firm wants to feel that its margin calls are being made at the end of a long list of other clients' calls. Another key area to prioritise is the ability of the outsourcing service to provide clear reporting, since this will be most firms' best, and in some cases, only oversight of the collateral process. To some extent this has largely been viewed as the key drawback of outsourcing, given that at any point in time the best 'view' that firms might have is based on the latest (potentially end of day) report that they may have received from their outsourcing providers. Firms need to be able to clearly understand what is going on at any point in time. Not only can good reporting provide the detail that firms need for other parts of their business, but it can also be critical in managing the service level agreement in place with the outsourcer.

Buy-side investment in collateral management solutions has been markedly lower than that of the sell side, but this reflects a different investment and technology approach of many firms

An example of this change in market practice is provided by the work that IBM Algorithmics has undertaken over the past couple of years. Working with some of our service provider clients, we have developed a web portal that allows them to offer their clients direct interaction with the collateral process (including ability to view and approve workflow tasks performed by the service provider). This is one way to remove a perceived weakness of the outsourced option. But it is important to recognise that reporting, particularly in relation to management information, should be prioritised, whether it is provided by an outsourcer, or it is a solution that has been developed in-house or bought from a software vendor.

When considering options, domain knowledge of collateral management should not be overlooked. This is often cited as a reason for outsourcing. But given that collateral is now such a standard market practice, I think that domain knowledge is becoming less of an issue, particularly in major financial markets. However, with the current volume of regulatory reforms, an ability to track these regulatory changes is critical. Firms need to be confident that the service provider or vendor that they select is able to support future market changes.

Current market trends include a desire to see the 'big picture' of collateral across the organisation, related to multiple business areas, including cleared derivatives and futures. Therefore, an ability to consolidate data, both via reporting and possibly by netted margin calls, is also something for firms to consider. Linked to this, an ability to support collateral optimisation, as well as tools that can provide improved decision making, are growing in importance, which is why they are further options for firms to consider.

You mention optimisation—do you think that this is important to the buy side?

Traditionally, buy-side firms have held collateral inventories that vary from those of banks. Rather than being long cash they will often have assets in equities, corporate bonds, and so on. This will sometimes cause issues in the posting of collateral to bank counterparties, given the often strict definition of eligible collateral in collateral agreements. So with new regulations requiring increased posting of collateral, both on cleared and non-cleared derivatives, and potentially tighter eligibility constraints for cleared trades, the challenge of how and what to post will only increase.

What is expected to be a very significant increase in collateral requirements is driving firms to consider how, and if they can optimise their collateral assets. Since increased collateral postings will be required by both the buy and sell sides, they are all now interested in optimisation. However, given the inventories that are held on the buy side, and their traditional approach to minimising costs, it is no doubt that optimisation will become a primary focus for buy-side firms in the near future. Firms will likely seek to not only optimise collateral within a single asset class such as securities lending, but will look to reduce costs as much as possible and therefore optimise assets across business areas, including OTC, repo, cleared, and so on. This will drive a need to see a consolidated view of collateral requirements and inventories. Given that these positions are often managed in disparate systems, capture of this data into a single platform for aggregation may prove to be a larger challenge than the underlying optimisation calculation itself.

For some firms, the quantitative nature of optimisation calculations may fit well within their infrastructure and skills, while for others they will seek to solve this with third-party tools. For some collateral obligations, particularly those that are linked to cleared derivatives, firms may require that their brokers provide collateral transformation services, which will reduce collateral costs for them.

Are there any things the buy side should be doing to improve processes, and potentially learn from the sell side?

The fact that firms are now more focused on collateral is the first step. General improvements around the entire risk infrastructure are key, and collateral management is just one of many areas that need to be considered. What sell-side firms have come to recognise is that investment in systems, people and processes is critical. With the collapse of Lehman Brothers, there was surprisingly little impact on banks given the successful part that was played by collateral. But while investment in the collateral process is necessary, it needn't require huge budgets. The price of technology in this space has reduced over recent years, and given the range of options that are available, there should be a solution for all firms regardless of their size.

One lesson that could be learned relates to the operational process. Many buy-side firms still make margin calls on a weekly basis and this is not something that many banks do. Such an operational set-up may actually reduce the benefit of using collateral, since credit risk is only offset on the day of margining. Reasons for performing the process weekly are more likely linked to personnel constraints, and it shouldn't be acceptable to cite system constraints for failing to margin on a daily frequency. Not only is this a relatively easy process improvement to roll-out, but one that can be introduced quickly and at low cost.

Finally, what do you feel as the most pressing concerns for buy-side firms right now?

Operational oversight and getting the correct controls in place should be top of the 'to-do' list for any buy-side collateral manager. Continued market volatility, leading to higher margin call volumes, increased occurrence of disputes, and so on, mean that having the right processes is fundamental. Linked to this, firms need to have this view across their different business areas, and ideally within a single system. Hence, management information is critical for providing control and transparency.

With the current regulatory changes under way, an ability to both recognise and adapt to change is necessary. The collateral market will be a very different place in two years, so having the systems and processes in place that can support both current requirements and future changes is critical.

With the correct controls and processes in place, firms also need to ensure that they are not operating in a technology vacuum. While firms have traditionally operated as different business and risk areas, what we are seeing now is a move towards a much more closely integrated model, with enterprise risk management rising to the forefront. With better integrated solutions, firms can take advantage of real-time information and make better informed decisions that ultimately reduce their overall levels of risk exposure. **SLT**

With the current regulatory changes under way, an ability to both recognise and adapt to change is necessary. The collateral market will be a very different place in two years, so having the systems and processes in place that can support both current requirements and future changes is critical

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Service Provider Directory

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Company description

4sight Financial Software is an independent software solutions provider with 16 years of experience. Our customer base includes a full spectrum of market participants from principal intermediaries, custodial lenders and agents, to direct lenders and global broker-dealers.

Some of the world's largest financial institutions use our software to meet their business needs and we offer the reliability and experience of a company with a proven track record. We also provide project management, consultancy services and global support through our worldwide network of offices.

Our product range consists of:

- 4sight Securities Finance (4SF)—a software solution for lending, borrowing, repo, swaps and collateral management across the equity and fixed income markets.
- 4sight Xpose—software for enterprise wide collateral management and optimisation. Xpose provides cross product collateral management for securities lending, repo, and derivatives in a single solution.

These solutions provide front-to-back office support and help our clients to:

- Boost revenues
- Reduce costs
- Increase trading volumes
- Reduce manual effort
- Improve customer service
- Control risk

BNY MELLON

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Company description

BNY Mellon is a global financial services company focused on helping clients manage and service their financial assets, operating in 36 countries and serving more than 100 markets.

BNY Mellon is a leading provider of financial services for institutions, corporations and high-net-worth individuals, offering superior investment management and investment services through a worldwide client-focused team. It has $27.1 trillion in assets under custody and administration and $1.3 trillion in assets under management, services $11.5 trillion in outstanding debt and processes global payments averaging $1.4 trillion per day. BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation.

Additional information is available on www.bnymellon.com or follow us on Twitter @BNYMellon.

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Company description

Calypso Technology is the global capital markets platform provider, serving financial institutions of all types with an integrated cross-asset front-to-back office solution for treasury and derivatives including trading, risk, processing, clearing, collateral, cash management, liquidity, accounting and reporting. The Calypso platform is steadily emerging as a global standard for capital markets businesses and serves as an ideal foundation for innovation and future growth.

Calypso has over 140 clients in over 40 countries—including banks, central banks, sovereign funds, asset managers, insurers, hedge funds, prime brokers, exchanges, clearing houses, processing services and other service providers. Calypso is committed to industry-renowned levels of customer service, research, development and innovation. The company has over 650 employees and 16 offices globally.

Clearstream

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Company description

The Global Liquidity Hub: vision has become reality
Forty years of strength and expertise are the solid foundation supporting Clearstream. We are a successful, mature securities services organisation with a stable AA credit rating.

A programme of constant innovation to our Global Liquidity Hub ensures our collateral management and securities lending services continue to play a leading role in shaping the future of post-trade opportunities and liquidity management throughout the global industry. We provide flexible, secure services across all major asset classes and timezones.

Our clients enjoy the benefit of increased liquidity and more efficient use of collateral across global markets through the excellent customer service delivered by Clearstream's specialist Global Securities Financing teams in Luxembourg, London, Frankfurt and Singapore.

Clearstream serves around 2,500 customers in more than 100 countries and allows access to 52 domestic market links. We maintain a leading position in the international fixed-income market with around €11.2 trillion in assets under custody while our Global Liquidity Hub has around EUR 560 billion average monthly outstanding.

World-leading services
Our Global Liquidity Hub services have been acknowledged as world-leading in two prestigious customer surveys: the Global Custodian 2012 Tri-Party Securities Financing Survey top-rated Clearstream for the 12th successive year in Europe while the Global Investor/isf Tri-Party 2012 Survey put Clearstream in first place overall and also for Europe, Middle East and Africa, Asia and top for repo and securities lending.

We value partnership
Clearstream's Liquidity Hub GO (Global Outsourcing) is now being developed with infrastructures around the world providing them with cost-effective and time-efficient white-labelled collateral management solutions for their clients. This unique and customisable solution allows assets to be used to cover exposures while remaining within their domestic jurisdiction.

Additionally, Clearstream is developing a specialised collateral management functionality for use with custodian banks enabling their customers to benefit from collateral optimisation while assets remain in situ. Clearstream is also creating innovative solutions for the buyside including GC Pooling Select, which will enable corporates to enter the industry-leading GC Pooling environment.

EquiLend

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Company description

EquiLend is a leading provider of trading services for the securities finance industry.

EquiLend facilitates straight-through processing by using a common standards-based protocol and infrastructure, which automates formerly manual trading processes. Used by borrowers and lenders throughout the world, the EquiLend platform allows for greater efficiency and enables firms to scale their business globally.

Using EquiLend's complete end-to-end services, including pre- and post-trade, reduces the risk of potential errors. The platform eliminates the need to maintain costly point-to-point connections while allowing firms to drive down unit costs, allowing firms to expand business, move into different markets, increase trading volumes, all without additional spend. This makes the EquiLend platform a cost-efficient choice for all institutions, regardless of size.

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Company description

Euroclear Bank is the world's largest international central securities depository. As the pre-eminent provider of post-trade services, Euroclear Bank serves as your gateway to counterparties worldwide and more than 300,000 securities. For more than 40 years, we have worked in partnership with the biggest names in finance and banking located in more than 90 countries. User owned and user governed, we give the highest priority to the interests of our clients.

In that regard, we focus on delivering cross-border settlement and safekeeping services that help clients meet their post-trade obligations as easily as possible. We also help clients manage the risks and exposures arising from their transactions through our triparty collateral management service portfolio that covers cash, equities, domestic and international bonds. Our 'Collateral Highway' moves cash and/or securities from wherever they are held to where they are needed to serve as collateral for access to central bank liquidity, secured transactions such as repos and securities loans, margins for CCPs and bilaterally cleared OTC derivative trades.

Our multi-lingual, highly trained team of professionals based in Europe, Asia and the Americas are committed to providing expert assistance and support throughout your business day.

Euroclear Bank is part of the Euroclear group which includes the national central securities depositories for Belgium, Finland, France, Ireland, the Netherlands, Sweden and the United Kingdom. They serve local clients for local transactions in their respective markets. Euroclear also owns Xtrakter, which operates TRAX, the trade matching and reporting system.

The Euroclear group holds in custody more than €22 trillion for clients. The total value of securities transactions settled by the Euroclear group exceeds €580 trillion per annum.

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Company description

About Algorithmics, an IBM Company
Algorithmics is a leading provider of risk solutions. Financial organisations from around the world use Algorithmics' software to help them make risk-aware business decisions. Algorithmics' analytics and advisory services assist firms in taking steps towards maximising shareholder value and meeting regulatory requirements. Supported by a global team of risk experts based in all major financial centres, Algorithmics offers award-winning solutions for market, credit and operational risk, as well as collateral and capital management.

About IBM Business Analytics
IBM Business Analytics software delivers actionable insights decision-makers need to achieve better business performance. IBM offers a comprehensive, unified portfolio of business intelligence, predictive and advanced analytics, financial performance and strategy management, governance, risk and compliance and analytic applications.

Lombard Risk

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Company description

For over 22 years, Lombard Risk (LSE: LRM) has delivered industry-leading risk management and regulatory compliance solutions to the financial services industry around the world. Our 300+ clients include over 30 of the world's "Top 50" banks.

Our proven global solutions are used to manage and optimise collateralised trading operations and meet the demands of global regulators.

- COLLINE—collateral management and clearing: A state-of-the-art, web-based solution designed by experienced business practioners for end-to-end, cross-product (OTC derivatives, repo and securities lending) collateral management. It provides a consolidated solution for mitigating credit risk while satisfying the growing demand for multiple global entities, cross-product margining, central counterparty clearing, optimisation, master netting, MIS reporting and electronic messaging.
- REPORTER: global regulatory reporting and compliance
- LISA: liquidity stress testing and scenario analysis
- MIS: management information
- REFORM: real-time transaction / regulatory reporting

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Company description

At Omgeo, we are the operations experts, automating trade lifecycle events between investment managers, broker/dealers and custodian banks. We enable 6,500 clients and 80 technology partners in 52 countries around the world to seamlessly connect and interoperate. By automating and streamlining post-trade operations, we enable clients to accelerate the clearing and settlement of trades, and better manage and reduce their counterparty and credit risk.

With Omgeo, clients can electronically connect with global counterparties to efficiently automate post-trade life cycle events from the allocation and matching process, to settlement instruction enrichment and collateral management.

Our strength lies with our global community and our ability to adapt our solutions to enable clients to realise clear returns on their investment strategies, while responding to changing market and regulatory conditions.

Omgeo enables firms to gain precise, up-to-date insights in order to assess and respond to their counterparty risk exposure. With Omgeo ProtoColl® for collateral and margin management, you gain a holistic view across cleared and non-cleared instruments, including OTC and exchange traded derivatives, securities lending transactions, and beyond.

Key benefits of Omgeo ProtoColl:

- Take advantage of one-stop collateral management, from collating data, through calculating and publishing calls, managing disputes and reconciliations, to sourcing and delivering collateral
- View your collateral world as you want to see it. Observe, monitor and process your key tasks in real-time
- Leverage unrivalled product support, including securities lending, repurchase agreements, FX forwards, and TBAs
- Support evolving regulatory environment, with automated capabilities to support centrally cleared and bilaterally cleared transactions
- Automatically remove the need for capital expenditure on hardware by installing hosted solution with a low initial investment and quick implementation

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Company description

Pirum provides highly innovative, functional and reliable electronic services operating in automating post-trade processes in the equity and fixed income securities finance markets globally with a focus on service excellence.

Financial Institutions from around the world have responded to Pirum's creative approach by joining the secure online community. They have increased processing efficiency, reduced operational risk and improved profitability by using Pirum's services to reduce manual processing.

Pirum's Classic Service delivers:
- Contract compare
- Billing compare
- Billing delivery
- Daily position reporting
- Income claims

Pirum's 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
- Exposure reconciliation
- Automated returns
- Automated payments
- Real-time contract compare and pending compare
- Automated triparty RQV processing
- CCP gateway

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Company description

Rule Financial is a leading independent provider of business and IT services, employing over 450 people in the UK, the USA, Canada, Spain and Poland. Our specialists work alongside their counterparts at the world's leading investment banks, hedge funds and financial institutions.

We offer our clients end-to-end solutions that solve their complex business and IT issues. Our specialists have a deep understanding of the increasing regulatory pressures faced by financial institutions and a number of our recent engagements have included strategic consultancy and solution delivery around OTC derivatives regulation and the implications of central clearing on integrated systems and collateral management.

Our specialists help clients focus on all aspects of collateral management and optimisation:
- Collateral management strategy
- Integrated collateral management solutions
- Cross-product collateral solutions
- Collateral optimisation solutions

We cover all aspects of advisory, execution and support services. Our domain specialisms include: securities finance, prime services, risk management, trading, legal & compliance and operations. Our delivery specialisms include: advisory and execution services in system development, user-centric design, software development, integration, testing, on-going support and IT outsourcing.

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Company description

SunGard, a Fortune 500 company, is one of the world's leading software and technology services companies. With more than 17,000 employees, SunGard serves approximately 25,000 customers in more than 70 countries. SunGard specialises in collateral management, securities finance and prime solutions.

SunGard's Apex Collateral solution suite helps collateral traders, heads of trading desks, risk professionals; operations staff and senior management manage and optimise their collateral on an enterprise-wide basis. Apex Collateral offers a single platform for trading directly from a real-time, consolidated global inventory, as well as supporting the operational nuances required for managing collateral on underlying securities lending, repo and OTC derivative transactions. The Apex Optimizer, which either runs in conjunction with Apex ECM or standalone, uses numerical algorithms to automatically allocate collateral in the optimal way, helping firms minimise costs and maximise return on assets. For more information visit www.sungard.com/enterprisecollateral

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Company description

As a leading provider of high-end technology solutions and services to clients in the Capital Markets domain, Synechron has deep understanding of the securities finance market. Our strategic decision to step up focus in this niche domain is in line with our long-term goal to further expand our global capital markets division and diversify our service offerings.

Synechron was founded in 2001, and is globally a 4000+ professionals company with annual revenue of USD 150 million. Headquartered in New York, it has presence across the US, Canada, UK, the Netherlands, UAE, Japan, Hong Kong, Singapore, and state-of-the-art development centres based in Pune, India. Synechron specializes in banking, insurance and financial technology services including treasury & Risk management, fraud detection and compliance.

Synechron's value proposition lies in its global delivery model harnessing industry expertise from established markets such as New York, London and Tokyo with complementing technical edge through its development centres in India.

You can contact us to know more about how we can help you with your technology challenges in the securities finance business.

SUNGARD®

Apex Collateral.
The ultimate vantage point

You need to see the whole picture to achieve pro-active collateral management and optimization – not just parts of it.