



**Collateral Management:
The Great Facilitator**

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Management Summary

Introduction

Collateral management was once a lesser known, back-of-an-envelope activity. It has now assumed an important seat at the dinner table of effective risk management, with both the number of agreements and the volume of collateral held therein increasing exponentially over the last few years. This paper explores latest developments in this area, with particular focus on current challenges and favoured solutions.

Key findings

- **Why collateral management?** – The business case is robust. Not only does holding collateral reduce credit risk, it releases credit lines, improves price competitiveness, and allows firms to trade with those outside their normal credit parameters, expanding customer base. There are also clear operational gains, in terms of improved counterparty management, while regulatory advances (Basel II and the European Collateral Directive) have pushed efforts forward, alongside a growing cognisance the collateral management function can begin to pay for itself.
- **The broader reach of collateral management** – As the benefits of collateral management are more widely understood, they are being more widely pursued. Effective collateral management is no longer the exclusive province of mighty tier ones - asset managers, alternative investment funds (hedge funds, in particular), corporates, insurance companies and energy firms are moving with alacrity toward “active” collateral management, while emerging regions (East Asia, Eastern Europe, Latin America etc) are also moving into this space.
- **Obstacles to improved performance** – Collateral management can be a dangerous game – doing it badly can be worse than not doing it at all. Interviewed banks pointed to reconciliations/dispute resolution, particularly on many-to-many trades, agreement structuring, a lack of data standards, ensuring data consistency, manual intensity, reporting, and moving toward cross-product capability as the key challenges of the moment – as where today’s collateral management war is being fought.
- **In-house or vendor-packaged?** – Though some leading tier one institutions continue to operate with in-house solutions, vendor-packaged alternatives are attracting far more mainstream attention. As offerings have matured, the business case has become more robust. The “better” vendors offer almost



instantaneous time-to-market, near instant proof of concept (less risk), and with Application Service Provider offerings, “big system” functionality at “small system” price.

- **Favoured solutions** – Though the risks of collateral management are clear, increasingly, so are the technological solutions. Banks pointed to sophisticated reconciliation engines, robust translation capabilities, advanced workflow functions and ambitious automation initiatives as making the practitioners’ life much easier, while improving the overall effectiveness of the collateral management function. The real high-end gains were seen to lie with genuine cross-product capability – not just organisational consolidation, but the ability to net exposures across products into a consolidated margin statement.
- **Technical considerations** – Beyond specific functionality, banks must consider a number of standard technical considerations before committing to any one solution. These include whether the solution is flexible and scalable, the currency base of the technology (is it founded on tried and tested technology with a buoyant future, for example), platform compatibility/ease of integration, and extent of configurability.
- **Anticipated developments** – Collateral management will continue to be big business, as confirmed by the latest ISDA 2006 Margin Survey figures. Efforts will focus on exporting “best practice” to emerging regions, while use will become increasingly sophisticated in the US and Western Europe, moving inexorably toward a more integrated, one-stop shop, perhaps with outsourcing assuming more strategic importance. Hedge funds promise to be the most interesting users to watch, with debates unfolding over the optimal calculation for high-end derivatives, with some moving away from [Globeop](#), bringing more activities in-house.

Conclusion

Collateral management is an integral and indispensable part of effective risk management, fuelling a growing distaste for unsecured exposure. No longer the exclusive province of mighty tier one banks, players across the board are moving into this space, and not infrequently, turning to sophisticated vendor-packaged solutions. Increasingly, this is seen as the best way to avoid the painful heuristics of in-house development while fast-tracking the many benefits of effective collateral management.



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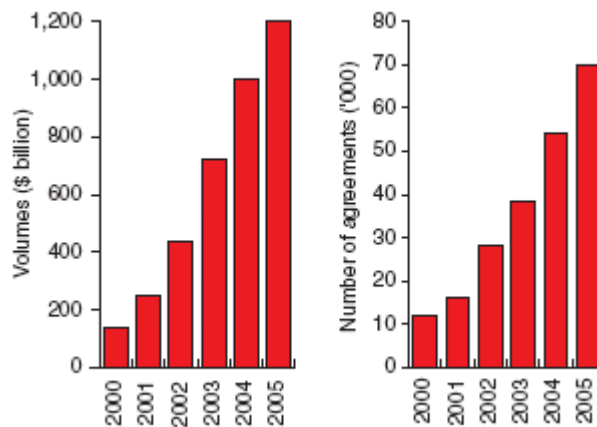
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Introduction

Collateral management was once a lesser-known, back-of-an-envelope activity. It has now assumed an important seat at the dinner table of effective risk management, with both the number of agreements and the volume of collateral held therein increasing exponentially over the last few years, as illustrated below.

Figure 1: Collateral volume and agreements as of start of the year



Source: Risk Net

The task of effective collateral management is now very much different (both quantitatively and qualitatively) from as little as a decade ago, when many got by on simple spreadsheet solutions; collateral was requested on the basis of a counterparties' credit rating and usually no more than one or two business lines used collateral.

Today banks can have collateral agreements with literally thousands of counterparties. Initial collateral is based on internal risk ratings, calls for fresh margin are made daily, if not intra-day, based on mark-to-market potential future exposure numbers and/or value-at-risk (Var) calculations, and banks look at their net exposure to each counterparty across a range of businesses.

The workload is significant and though the gains are clear, in terms of reduced credit risk, increased market access and reduced capital requirements, so are the risks. As one bank explained - *"doing collateral management badly can be worse than not doing it at all"*. In recognition, practitioners across the board have sought to automate as much of their workflow as possible and not infrequently, turned to vendor-packaged solutions.



With more and more players coming to the table - not just tier ones, but tier twos, alternative investment funds, corporates etc, seeking to aggressively upgrade existing capabilities, many have come to see this as the favoured route. This paper is not intended as a critical assessment of these competing offerings, but rather, seeks to highlight some of the key issues in this area – the drivers behind collateral management, current challenges, favoured solutions and anticipated developments, all based on the opinions of leading industry experts.



Collateral Management - Why All the Interest?

First and foremost, collateral management is about risk reduction - taking collateral allows banks to cover their mark-to-market exposures, bringing credit risk back to zero. This is the most important gain, as evidenced during the high profile collapse of Long Term Capital Management (LTCM). As the fund's implosion sent shock waves through the market, the otherwise routine practice of collateral management suddenly assumed critical importance, helping mitigate the risk and eventual losses experienced by LTCM's counterparties, but not all had maintained responsible programmes, marking-to-market on a daily basis their underlying positions. This event proved highly didactic, later resulting in formal recommendations for the implementation of policies governing the use of collateral to mitigate risk. With the more recent defaults of Enron and Refco, these recommendations have become even more relevant, helping establish collateral management as a central pillar of effective risk management, fuelling a growing distaste for unsecured exposure.

Outside of "pure" risk reductions, collateral offers many real business benefits. Holding collateral allows banks to enter more complex or structured products, longer-dated transactions and/or products traded in emerging markets - all higher risk, but higher margin transactions. One source explained clients were now proposing twenty to forty year swaps, and that only by exchanging collateral can these trades go forward. For these types of high risk transactions, effective collateral management functions as a "great facilitator", allowing banks to trade with firms outside their normal credit parameters, while all the time maintaining liquidity and respecting balance sheet constraints.

Holding collateral can also release credit lines, particularly under Basel II, which enlarges the types of collateral to which capital adequacy haircuts can be applied. All reductions in capital requirements, whether economic or regulatory, release additional capital for other revenue-generating activities, making this another clear business driver. The impact of Basel II more generally though is less easy to discern. Some interviewed sources felt it was too early to detect any direct causal links, while others opined it would reward more sophisticated collateral management users, encouraging them to push the whole field forward.

Though less frequently cited potential operational gains are also of note, principally through improved counterparty management. Running a satisfactory collateral management function means monitoring collateral agreements daily, if not intra-day for some products (FX, for example), and automating as much of the workflow as possible.



This ensures those extending credit have the most detailed and up-to-date information on their counterparties, while imposing more structure and control over the whole risk management process.

Though perhaps not a direct driver, one bank stated other benefits can be realised through rehypothecation. By lending, repoing or posting collateral for obligations to third parties the overall cost of collateral management - subsuming professional fees, operational costs, custody fees, financing costs - can be significantly reduced. Depending on the location of the collateral management function, and whether the organisation is a net receiver or pledger, and its appetite for additional risk, practitioners may even be able to turn collateral management into a profit centre. There are also economies of scale to be realised by centralising the whole function, contributing further to overall profitability.

Lastly, the [International Swaps and Derivatives Association's](#) (ISDA's) various efforts, through the publication of successive annual guidelines and various Working Groups, have also played an important role, helping users across the globe attain a real level of comfort and confidence with collateral management. ISDA has proved central in securing much-needed legal clarification in certain emerging markets; results have been forthcoming in Europe too with the European Collateral Directive. Even where there had been no direct, immediate impact, ISDA's efforts have stimulated broader discussion on pertinent issues.



The Broader Reach of Collateral Management

New players

Taken together, the aforementioned demonstrate just how important an effective collateral management function is to overall risk management and company performance - that the potential gains are real and quantifiable. In direct recognition, more and more players have felt comfortable using collateral – not just tier one banks, but tier two banks, pension funds, insurance companies, corporates, asset managers, and perhaps most significantly, hedge funds.

As one source explained, though collateral has long been the “life-blood” of the hedge fund – no one would trade with them without it - many are beginning to push the envelope on what can be achieved, moving from “passive” to “active” use. Those that have traditionally relied on their bank to be the valuation agents are now more actively examining exposures themselves, seeking to determine their Net Asset Value (NAV) as soon as possible.

Rather than letting banks dictate procedure, many hedge funds are pushing delivery statement times to earlier in the day, giving them more time to respond to collateral calls, and calling margin back if and when markets shift. Hedge funds are also pushing for improved reconciliation capabilities, more information on dispute resolution, and better reporting to inform decision-making - generally making their prime brokers do more of the work.

Perhaps the most ambitious advances, however, centre on seeking a Var-based front margin calculation - one margin call across the whole product range, facilitating reductions in hedge funds' overall exposure and attendant margin requirements. The logic here is simple – the more capital funds can free up, the more business they can do. This is all part of their quest to have an integrated one-stop shop - a front-to-back, fully incorporated risk model. They want to know how everything fits in together - how, for example, effective collateral management translates into an aggressive cash management programme.

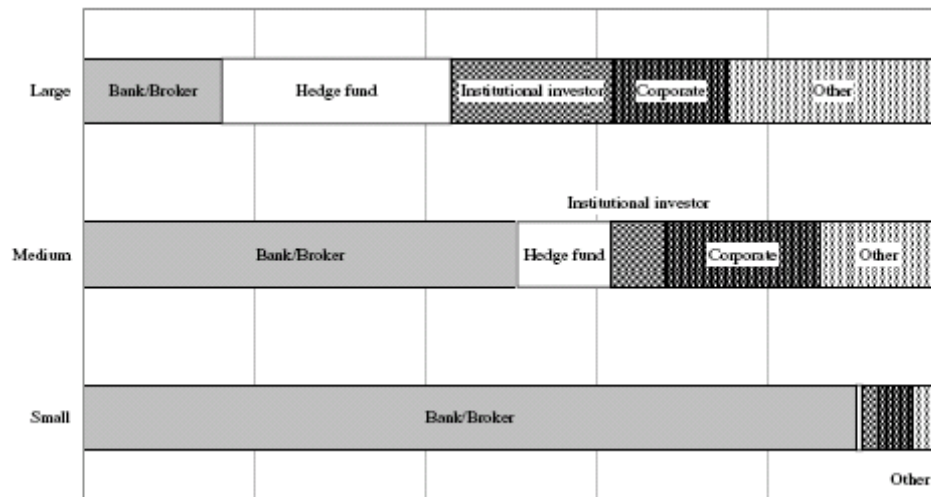
Hedge funds are also looking at how to most effectively leverage their assets. Those that are naturally long, instead of having bonds waiting in custody accounts are seeking to post these as collateral, allowing them to generate higher returns on cash, the collateral type of choice, elsewhere. There is also more interest in using equities and asset-backed securities (ASB) as collateral.



The key point here is that hedge funds realise effective collateral management - that is, collateral managed efficiently and cheaply - can make significant contributions to overall profitability. Other users that, up until recently, may have opted for a simple spreadsheet solution, such as corporates, asset managers, tier two banks and smaller hedge funds, are also now coming round to this way of thinking.

Though much of this use is still “passive” (i.e. required by those extending credit), the second round of collateral management growth promises to involve far more “push”. Once the basic infrastructure is in place, new players will begin exploring the real benefits of operating a robust collateral management function. As figures released for the ISDA Margin Survey 2006 indicate, there is now far more variation in the mix of counterparties across collateral management programmes – see chart below.

Figure 2: Distribution of counterparties by type



Source: ISDA Margin Survey 2006

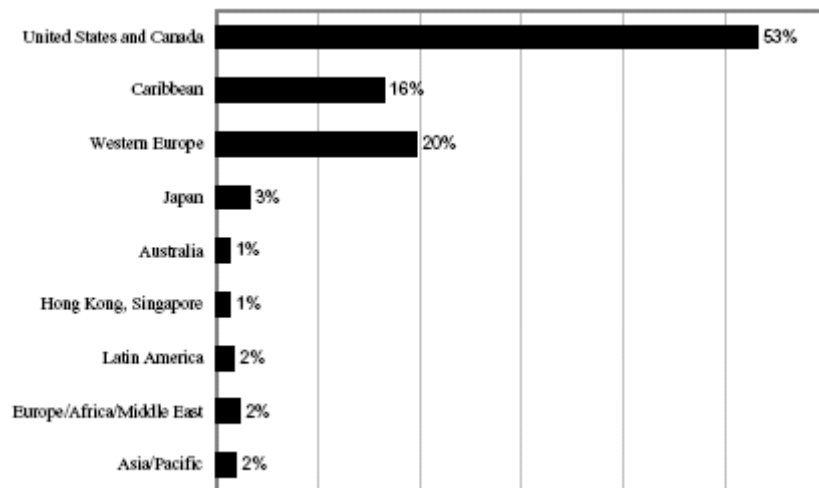
Some users, however, are still moving up the learning curve. Commodities firms, for example, as traditionally lower tier credit clients have been “pushed” into collateral management to access credit, but have yet to start upgrading their collateral management capabilities, according to one source. Specifically, energy firms have adopted collateral use as an attempt to restore investor confidence following credit downgrades, accounting scandals, government investigations, and falling stock prices. However, some are reportedly still coming to terms with using standard ISDA Master Agreements, which has been of concern to interviewed banks.



New regions

It is not just new client types moving toward collateral management, but, increasingly, different regions, as illustrated below. One bank interviewed by Lepus had recently opened a new department in Singapore, which had consistently outperformed all other regions in terms of growth over the last three years. Another bank pointed to unprecedented economic growth in China and India as fuelling a growing appetite for collateral management. As the economy matures and becomes more sophisticated, collateral management is a logical and inevitable step forward.

Figure 3: Geographical distribution of counterparties



Source: ISDA Margin Survey, 2006

Legal concerns persist in most emerging regions, though, over whether collateral and netting agreements are legally valid, and whether parties will be able to close-out. In this environment, collateral agreements constitute a particularly complex legal challenge, as the extent of risk depends not only on the nature and location of the counterparty, but the nature and location of the collateral. These realities have tempered the enthusiasm of some institutions, particularly the conservative ones, who await legal clarification before proceeding.

Still, ISDA's various efforts have certainly helped induce more confidence here - launching a Mandarin/English glossary of collateral terms, for example, encouraging the use of collateral management across the Chinese-speaking world, alongside managing to secure amendments to legislation pertaining to the legal validity of OTC derivatives transactions across many emerging markets (most notably, India, Hong Kong and Singapore). Where change has not been forthcoming, important debates have been stimulated.



On this basis, some banks have consciously started to drive the shift, hoping legal opinion will eventually fall in their favour, losing capital benefits in the interim to expand market share. As a result, a broader mix of client types can already be discerned in some of these markets, particularly East Asia, where corporates and hedge funds are really beginning to embrace collateral management, as they have in Western Europe and North America.



Obstacles to Improved Performance

With more and more players entering the collateral management space, across both client types and emerging regions, volumes have increased exponentially over the last few years. ISDA's recently released 2006 Margin Survey results indicate collateralised derivatives transactions grew 20% over reported 2005 figures; that \$1.439 trillion of collateral is now used to support OTC derivatives. Herein lies a central challenge for the collateral management practitioner - maintaining a controlled environment as volumes increase. The most obvious solution is to automate more of the workflow, but in some areas, reconciliations in particular, this is far more easily articulated than achieved.

Much reconciliation is still performed on an ad hoc basis, since differences in the way institutions represent trades continues to obstruct further automation. Practitioners thus find themselves in a difficult position – needing to deal with clients and portfolios on a detailed trade-by-trade basis, but with no clear answer on how this can be best achieved. This can be a particularly complicated and painstaking process when working on 'many-to-many' trades (structured products consisting of multiple underlying transactions). Here, effective resolution can take as much as two weeks.

The industry really needs a *"better way to crack this nut"*. Inefficient portfolio reconciliation significantly increases the number of resources required to support an OTC derivatives trading operation, and if trades are not properly reconciled, parties may be exchanging collateral based on only a rough estimate of true exposure. In fact, such are the problems here that regulators may well enter if the industry does not find itself a solution soon.

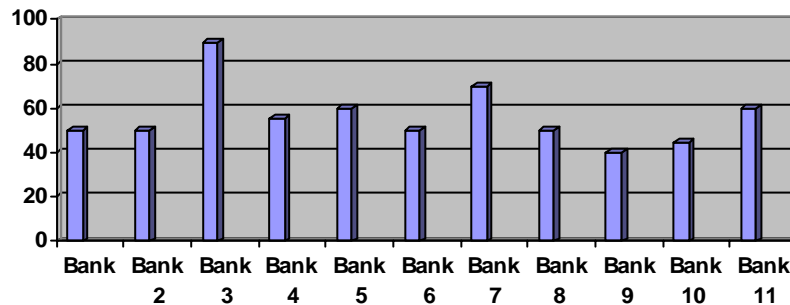
Interviewed banks also pointed to manual intensity being a problem outside of reconciliation, though, not surprisingly, Lepus detected considerable variation in achievement here. One source from a leading tier one bank explained apart from manual overrides required for up-fronts, they were fully automated. Mark-to-market exposures of trades fly right into the collateral system; parameters of agreements are coded into the documentation system along with frequency of the call and thresholds; statements are automatically generated, some automatically faxed out; and settlement instructions are fully automated through to the custodian.

Another source, however, from a European tier two bank explained 60% of their workflow was automated, concentrated principally on the trade capture side, with manually intensity prevailing on the control side. Another, again from a European tier two bank, advised 50% of their flow is automated, mostly concentrated on the inflow side; that they were looking to



make real improvements on the outflow side – on booking and settlement, in particular. Virtually all other interviewees feel roughly into this latter category, as illustrated below, indicating there is still much work to be done (and according to most interviewees, much work *is* being done).

Figure 4: Percentage of workflow automated



Source: Lepus

Beyond a lack of automation, data was considered the next big challenge, both in terms of data standards and the general demands placed on data by the whole collateral management function. As to the first, the industry desperately needs a common standard for the distribution of portfolio information and margin calls amongst counterparties, and lack of achievement here is widely recognised as one of the most time-consuming aspects of the reconciliation process.

One interviewed bank stated there is a real gap in the market here - if vendors could get together and share their profits, many of these problems could be ironed out. This was a controversial issue, though, with another bank explaining much of this emphasis was misplaced. With any decent translation engine virtually all of these problems can be addressed, though one may have to do a little data scrubbing before dumping files into one's generator. For this source, the real data issue is not creating some putative standard, with all the inherent problems plaguing such endeavours, but the intense demands placed on collateral data.

There was much agreement on this point. One bank opined collateral management arguably constitutes the greatest data demands upon the organisation, as the trade records and mark-to-market valuations are being used every day, with real external counterparties to drive actual payments/deliveries to and from the firm. Other users of this data, such as risk management, credit reporting, trading management and operations, do not generally use this information in such critical situations.

Any material omission of trades, late or incorrect booking of trades, trade description inaccuracies or valuation errors will be visible to clients and may result in an incorrect



margin call, meaning potentially unsecured exposures. Such are the risks here, as one source explained, that *“doing collateral management badly can be worse than not doing it at all”*. The key problem here, though, as another source accentuated, is that the collateral management function receives feeds from many different parts of the organisation, so getting consistent and reliable data can be a real challenge. All sources explained they have daily problems with feeds failing.

Even if data consistency is not an enormous problem, which it is for most, users must then address problems around effective data management. Collateral practitioners must manage a wealth of information – historic, current, sliced and diced, and getting the right data, at the right time, from the right source is seldom as straight-forward a task as many would like. Then practitioners must think about communicating this information to other parts of the organisation.

Many different departments within the organisation, as well as counterparties outside, must interface with the collateral management function, so the possibilities for reporting are complex and varied. Externally, information must be exchanged on portfolio and collateral valuation statements, interest statements, margin call notices and reconciliation. Internally, the collateral management function must often report to many if not all of the following areas – risk, finance/product control, treasury, front office/valuations department, transaction/documentation/legal and operations. Just as the task of reporting becomes more complex and varied, however, as one source explained, buy-side, hedge funds in particular, are starting to demand better reporting and wanting to receive it sooner.

The real high-end challenges though were not data management or manual intensity, but moving toward cross-product capability. As one source explained, historically collateral management has operated as a dislocated, silo-based function - most banks viewed collateral exclusively in terms of their own OTC derivatives business. Moving beyond this requires big efforts - different products are traded differently and governed by different conventions.

To realise cross-product capability, practitioners would need to harmonise collateral delivery times across products, as well as levels of detail and file layouts for transaction portfolios and valuations. Moving too quickly or even minor mistakes may invite unequals. Legal problems would also require attention – different products may be booked with different legal entities, for example, introducing problems in terms of close-out netting. Then, to truly off-set the risks of each product, institutions would have to agree upon an apposite methodology with their client.

Interestingly, though there was little disagreement over the extent of the challenges, there was much debate over whether counterparties actually wanted cross-product capability. According to one source, the “buzz” around cross-product is driven more by research houses than practitioners; that many counterparties would be unable to handle one



consolidated statement (many businesses are still organised around product lines) and that from the bank's perspective, provided they are collateralised in the first instance, they do not gain anything from reducing their counterparties' exposures. This benefit is one-sided, hence the reluctance to really "push" cross-product capability.

Another source strongly disagreed with this, explaining cross-product capability is about more than risk-reducing gains - there are immediate gains from "getting one's house in order", in terms of being able to apply one consistent process, methodology and tool-set across all products. This was considered the real vision, enabling practitioners to tackle a whole host of problems with one solution – from data consistency, to an overall simplification of their collateral management infrastructure.



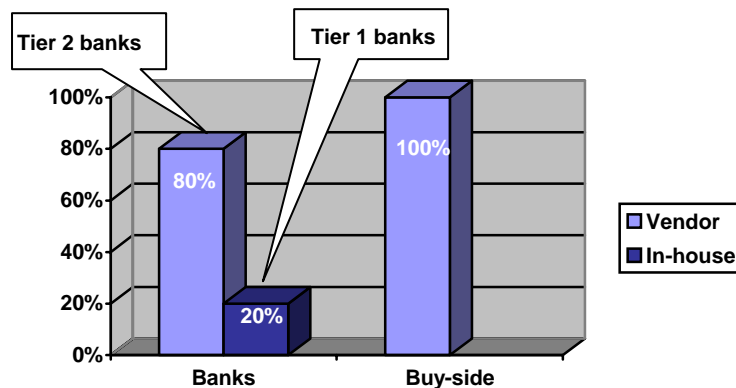
Technology Options: In-house or Vendor Packaged?

When addressing the abovementioned challenges, practitioners can choose between vendor-packaged or in-house solutions. One large tier one American bank advised there was no industry-wide reluctance to consider externally sourced solutions. On the contrary, they, like other larger institutions Lepus interviewed, had sought to acquire an off-the shelf solution, but at the time of looking (about ten years ago) could not find the requisite functionality. In fact, none of the available systems had been stress-tested at the capacity they were handling.

According to another source, this was true across much of the industry at the time - *"if you wanted to do collateral management a decade ago, you had to do it yourself"*. This is no longer the case as vendors have developed a number of robust collateral management solutions catering for the needs of large institutions and smaller players alike. Many of those entering the collateral management space after 2000 have thus opted for vendor packaged solutions.

Based on our interviews, of the eleven banks we spoke to, eight used vendor packaged solutions, and the institutions with in-house solutions were all larger tier one American banks. Of the smaller players interviewed (asset managers, hedge funds etc), all favoured vendor-packaged solutions.

Figure 5: In-house versus vendor-packaged



Source: Lepus

There is much to be gained from this approach, for smaller players in particular. They get a robust, scalable foundation developed by experienced practitioners to commence activities. This means much of the painful heuristics of development can be avoided, while



the considerable benefits of effective collateral management can be fast-tracked. Indeed, experienced vendors should have a strong track-record of successful implementations, and be able to offer almost instant proof of concept, so less initial risk. The same applies should problems unfold later on, as vendors will be able to offer the support of experienced practitioners, helping through any teething problems. Beyond this, the “better” vendors will be continually seeking to improve their solution, keeping abreast of the latest technological advances. This, to an extent, helps ensure investments are almost “future proof”, but without the associated cost of in-house development teams.

There are also real cost savings too, and as all users seek to make their collateral management function cheaper, more streamlined and more efficient, vendor packaged solutions continue to attract attention. Particularly from a total cost of ownership (TCO) perspective, vendor solutions are almost invariably cheaper than all but the most trivial in-house implementations, and with some vendors now offering commercial Application Service Provision (ASP) systems for collateral management, smaller players can access “big system” functionality at a much lower cost, with almost instantaneous time-to-market. All software and infrastructure is hosted by the vendor in secure data centres, while clients can access the service via their web browser over the Internet.

Having said that, for those offering highly sophisticated collateral products, such as VaR-based initial margining, most will normally do so with proprietary technology. But even these big players have reportedly flirted with vendor-packaged solutions. All sources we spoke to explained they continually monitor competing vendors to ensure their in-house systems are abreast of current developments; that if a “better” system came on the market, it would obviously be considered very seriously.



Making the Practitioners' Life Easier

Though some of the challenges pointed to in previous sections are clearly systemic problems, issues that only time, incremental advances and careful debate will solve, others lend themselves far more obviously and immediately to technological solutions; even the more intractable problems can be mitigated by the right technology.

For reconciliations, one bank explained systems are available that help identify the cause of disputes, whether it be a difference in the “marks” used to value trades, or disagreement about the number of trades covered in a given agreement. Some of the “better” solutions in this area have the ability to apply “fuzzy” matches where items appear very similar but not perfectly matched. Some will allow for transactions booked as multiple legs to have their constituent elements connected before attempting to match the entire structure against the counterparty’s records.

Reconciliation engines of this sophistication allow discrepancies to be quickly identified, margin calls to be correctly computed, and the true risk-reducing benefit of collateral to be realised. One source was particularly enthusiastic about the benefits of a historically-tracked reconciliation tool, explaining this helped speed up the whole process, representing a real advantage over spreadsheet-based solutions.

Other sources sought to improve reconciliations by focusing on the underlying disputes. One bank had favoured a three-pronged approach here, as detailed below:

- improving the underlying information needed to resolve the dispute by improving the bank’s feeds, ensuring the relevant data can be exchanged for swift resolution;
- determining why disputes were arising, and the areas in which they were concentrated. Most disputes tended to come out of credit derivatives and credit hybrids, where banks generally rely more on modelling than transparent prices; there were also problems around the back-office, in terms of the speed of execution and assignments (oftentimes, not keeping up-to-date with clients); differences in calculation methods were also considered a problem;
- and thirdly, this bank focused on improving dispute escalation – ensuring disputes are flagged as soon as possible and addressed.



Outside of reconciliations, sources pointed to the importance of automating margin calls and settlement. In fact, according to one source, *“no matter what the problem, further automation is probably 99% of the solution”*. There is much truth in this. Not only in reducing the scope for manual errors (operational risk), but in helping with process flow co-ordination, particularly between front- and back-office activities, as pointed to above.

There are other ways to make the practitioners' life easier, though. One bank pointed to workflow functions, explaining that even when most of the workflow is automated, navigating one's way through the minefield of collateral management can be a real challenge. Favoured capabilities here include deadline management and resource assignment/workload balancing. One bank was particularly enthusiastic about the consolidation of all key workflow (calculation of calls and tracking of exposures etc) into one screen, so-called “dash-board” functionality. With “traditional” collateral management tools, there is the danger the “desktop” will become too cluttered with activities and data spanning disparate businesses and processes.

Workflow functions were considered particularly useful for controlling the legal risks associated with agreement structuring. Some solutions help by outlining the permitted parameters for agreements and/or offer template agreements with robust controls against diversions. More sophisticated solutions include powerful search and filter capabilities to help users manage the wealth of requisite collateral management information. In the context of agreement creation, this can mean effectively warehousing all relevant information and filtering each transaction, ensuring users know which kinds of collateral are allowed for which transactions, and what transactions are covered by what agreements. Some solutions also boast powerful exception handling mechanisms to help with data absence, quality and/or incorrect classification.

Taken together, the above can not only reduce operational risk, but help make meaningful improvements with data consistency. Inevitably though, some institutions are a lot further down the road than others. One source from a leading tier one bank explained they had re-built their entire feed infrastructure to address this issue, consolidating into one single feed. Though the costs of this project were obviously high, this source maintained they paled in comparison to the alternative - having low quality, inconsistent data driving collateral management efforts.

Other effective, though perhaps less ambitious efforts, in this area revolved around using web-based platforms. The gain here, as one bank explained - no matter where users log-on in the world, they have access to the exact same – consistent - data. There are other data-related benefits too – web-based platforms can speed up delivery times for collateral calls, affirmations and confirmations. They also tend to be easier for upgrades, general support and maintenance (minimising user down-time), while general familiarity with the web-interface can make these platforms more user-friendly. Interestingly though, outside of leading tier one banks, few interviewed institutions had moved with any alacrity toward



web-based platforms, though most conceded it was a matter of when, not if, this transition would be undertaken.

As to the other big data issue, data standards, despite the ISDA Operations Committee expecting substantial advances by the year end – the adoption of [Financial Products Mark-up Language](#) (FpML) as a common standard for data representation and exchange, alongside the development of standardised, automated processes for much of the workflow - our sources were far from sanguine. Most thus stressed the importance of robust translation capabilities, capable of receiving data from multiple sources and distributing that data throughout the organisation in various formats.

Perhaps the most interesting and exciting developments, however, were evident in the realm of cross-product capability, and efforts here meant very different things for different institutions. For the tier one American banks we spoke to, it was a very exciting project generating real returns. For larger tier twos, it was a real challenge, generating results for some, while others were not sure it was worth the effort. For the rest of the pack, it was little more than a “pipe dream” - though most institutions were looking at some sort of cross-product collateral capability, most did so with variable degrees of urgency.

This is perhaps an unexpected state of affairs, as the gains are very real. One bank, by way of explanation, opined there is probably still enough low-hanging fruit for it not to be a real priority, but this will soon change, sparking off a “big bang” of reform. The “holy grail” here is when enterprise collateralisation extends beyond mere organisational consolidation to the ability to net exposures across products into a consolidated margin statement.

Three clear gains can be discerned here:

- from a risk perspective, cross-product hedging can free up credit lines and provide a better indication of true exposure, allowing counterparties to more effectively leverage any surplus collateral;
- operationally, agreements are far easier to support as all positions are held in a single portfolio, thus requiring less co-ordination between groups;
- and from a customer service perspective, practitioners can provide a single point of contact for their clients’ entire portfolio. With the prevailing focus on client-service, this is becoming increasingly important.

One source from a leading tier one American bank explained this vision - the quest for a one-stop shop; an integrated front-to-back end risk solution – had driven collateral management development throughout the last decade. They wanted the consistent re-use of functionality across derivatives and other products - one consistent process,



methodology and tool-set across for everything. Fragmentation between different lines was considered an enormous competitive handicap.

This vision continues to drive efforts. Their latest projects have centred on centralising management of collateral across all products. Having all financing business under one umbrella enables them to interlink all collateral products together, offering the most efficient economic means of access to all the forms of collateral. As collateral management matures, this is where tomorrow's technology war will be fought – on centralising and consolidating as much of the collateral management function as possible, both organisationally, technologically and intellectually.



Technical Considerations

Beyond generic functionality, when selecting a collateral management system, whether in-house or vendor packaged, a number of technical issues must be considered. First off – is the solution flexible and scalable? This may be a trite observation, but its importance can not be overstated. Quite simply, no matter how sophisticated one’s solution, unless scalable, time will always deem it anachronistic, and ultimately, a competitive handicap. Likewise, with collateral management evolving at speed, practitioners need flexibility to handle growth in different directions, the flexibility to pounce on opportunities as they emerge, perhaps more so than ever.

Users must then consider the currency base of the technology – is it founded on tried and tested technology that is current in the market and has a buoyant future? Platform compatibility is also key – can the vendor support platforms that are already in place, or will it require non-standard support and the associated costs this involves? In a similar vein, ease of integration must be carefully assessed. As pointed to in previous sections, collateral management can be very intensive in its demands for inputs from multiple sources. Practitioners need assurance their solution has a clear and robust interface facilitating data transfer with minimal effort.

The next key issue, particularly with vendor-packaged solutions, is configurability. For all its pluses, off-the-shelf will never quite be a perfect “fit” as is. Banks must thus determine whether their chosen solution can be adapted to work with practices, or whether those practices will have to change to work with the favoured solution. Central here is whether the vendor has a genuine “partnership-mentality”, willing to work with the organisation to ensure the system does what is desired.



Anticipated Developments

When asked to comment on how the collateral management function may evolve, our sources pointed to a mix of change and continuity. As to the latter, ISDA will continue to focus on the export of collateral management “best practice” to emerging markets, and these markets will continue to grow at great speed. The more interesting issue, according to one source, was how banks would respond to these developments – by continually educating new players, or trying to take on all the work and really capitalise on potential economies of scale.

Within the US and Western Europe sources expected collateral management to become increasingly sophisticated, with considerable efforts to move toward a one stop-shop, an integrated front-to-back end risk management function. One source opined this may translate into some outsourcing/off-shoring of non-core activities, as banks seek economies of scale and scope in activities in which they can most effectively differentiate.

In fact, four interviewed banks explained collateral outsourcing will assume far more strategic importance, with one bank planning to launch an outsourced collateral service in the next four months. This is likely to translate into more interest in capabilities that allow customers to access their CSA's, organisational data, margin call and other relevant information via the internet, securely. Though a bank may well handle the outsourcing of the collateral management function and move the physical assets, clients may still want to make decisions about margin calls, which assets to move, see the effects of merger between counterparties, undertake trade-reconciliations and a like, accentuating the importance of so-called “self service functionality”.

Hedge funds/alternative investment funds were considered the main users to watch. Following explosive growth over the last few years, much consolidation should be expected - the *“cream will rise to the top”*. These larger funds may then decide to bring their collateral management function in house (funds are already moving away from GlobeOp, as one source explained), and that this could be a very profitable space for the “right” vendor.

We can also expect the current debate over the optimal high-end calculation for high-end derivatives to continue. Though hedge funds have leant towards using an amount based on a Var calculation, as one source explained, this can spike quite highly over a few day period, significantly altering initial margins, without any real transparency. Though Percentage Notional is obviously a more conservative calculation, there is more transparency, allowing funds to more accurately monitor their cash-flow. Much effort will go into exploring alternatives here, and whether there is some way of getting a net position across the whole portfolio without Var.



Pressures to broaden the acceptable range of collateral were expected to continue and intensify; though opinions diverged on the extent this would constitute a challenge. One bank opined even the slightest movement away from cash and government bonds would precipitate an enormous technological problem. Another explained technologically the task is relatively straightforward; the real problems are intellectual.

Acceptable collateral types will be determined by the haircut they can get; some clients are proposing structured trades, and there is a lack of comfort with this, as liquidity and price transparency is required to make this a viable asset. Though the trade may be taken, this will preclude the release of credit lines. Banks will also need to consider the economic impact in terms of rehypothecation - are banks willing to accept a given asset if they can not pledge it out just to secure the trade?

As ever, practitioners will be pulled in different directions by what they feel they can comfortably achieve, and what their clients would ideally want. As one source stressed, with the growing focus on client service, some collateral management practitioners may get pushed into some particularly uncomfortable positions. The real challenge will be to improve service offerings while maintaining a controlled and responsible collateral management programme.



Conclusion

Collateral management has now become an integral and indispensable part of effective credit risk management. The business case for collateral management has now been made – and increasingly, it is understood not just by tier one banks, but a much wider audience, including tier twos, asset managers, hedge funds and corporates, alongside emerging regions (East Asia, Eastern Europe, Latin America, etc.) and non-traditional sectors (energy, commodities etc).

Players across the board are being “pulled” and “pushed” into collateral management – as the gains are more widely understood, they are being more widely pursued. This has driven a discernible trend away from “passive” collateral management – using collateral simply because banks require it – to a more “proactive” alternative, managing the process as effectively as possible to ensure the most efficient returns.

In realising these ambitions, sophisticated vendor-packaged solutions have served an important purpose, allowing users to avoid the often painful and expensive heuristics of in-house development, while fast-tracking the considerable gains of effective collateral management. No longer must sophisticated collateral management be the exclusive province of large tier one banks - larger hedge funds, asset managers and corporates are all now in a position to bring this whole function in-house.

The only remaining challenge is to select the “best” possible solution. Based on the proceeding analysis, our sources have pointed to the importance of scalable, web-based platforms, explaining sophisticated reconciliation engines, robust translation capabilities and advanced workflow functions must all feature prominently in any solution, alongside genuine cross-product capability. This will place practitioners in the best possible position.