Service Overview

Global regulation is increasing the demand for collateral and changing the supply dynamics in the capital markets. The difficulties of managing high-quality collateral for centrally cleared, bilateral derivatives trading, as well as leverage ratios are not specific to a single organization, but cut across the entire financial services industry. The market challenges are both dynamic and rapid, impacting the management, mobilization, and transformation of collateral.

For organizations to maximize value from finite collateral resources, the Sell-Side, Buy-Side, Custody Banks, and Clearing Members, must work together to establish a comprehensive and cohesive process that accounts for all pieces of the collateral ecosystem. A proactive collateral management approach is necessary to address liquidity constraints at an enterprise-wide level in an increasingly interconnected global capital market.

By creating a technologically advanced solution that can facilitate efficient collateral flow and transformation across an entire organization, firms can benefit not only from reduced risk, increased liquidity, improved regulatory capital and cost management, but benefit from a comprehensive strategy for collateral management that will provide a comparative advantage and help to maximize the return on investments.
**Client Issues**

There is an inseparable linkage between liquidity and collateral, which means organizations must manage risk while maximizing liquidity. The financial services industry encompasses a broad range of businesses, and trading and operational challenges can vary depending on what segment of the capital markets you operate in. Without a comprehensive collateral solution all industry participants will likely share similar constraints regarding collateral allocation and inventory management.

Financial institutions are finding it difficult to efficiently mobilize pools of eligible collateral in a market where margin activity is fragmented depending on regulatory changes, clearinghouse requirements, and bilateral agreements. Finding the right approach to deal with these challenges will require a holistic view of counterparties across products and geographies and will have to encompass both supply and demand components to be able to optimize assets used for collateral. In our view, the forces driving this change transcend organizational silos and will require an enterprise-wide solution that will provide a single cross-product view of collateral and is integrated across operational functions.

**Client issues and major impacts:**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Amount</th>
<th>Technology Investments</th>
<th>Increase in Margin Calls</th>
<th>Additional Collateral</th>
</tr>
</thead>
<tbody>
<tr>
<td>78.3%</td>
<td>$130 bn</td>
<td>$53 bn</td>
<td>1000%</td>
<td>$2-$4 t</td>
</tr>
</tbody>
</table>

- Cash is still king, but market participants are likely to post more non-cash collateral as interest rates increase.  

- Estimators show that firms may need between $130bn and $450bn in additional collateral to meet higher initial margin requirements for trading interest rate and credit default swaps. 

- The financial services industry is expected to invest over $53bn in technology and infrastructure to address inefficiencies in the clearing and collateralization environment. 

- Stronger collateral requirements could increase margin call activity by as much as 1000%, adding to risk and impacting firms’ operational capacity. 

- New banking safety rules that require firms to hold a greater proportion of cash and easy-to-liquidate investments will create a demand for $2-$4 trillion additional collateral.

---

**Leading Practices**

Collateral optimization should enable efficient flow and effective allocation of collateral assets that is in line with regulatory constraints and is able to deliver inventory management, collateral tracking, and complex analytics using automation and straight-through-processing across the organization. Collateral optimization is essential to resolving the gap between collateral supply and demand, and we believe that any impactful solution will first require a complete overview of the current practices and then an agreement on functional optimization goals.

**Leading practices for managing credit, operational and settlement risks:**

- Standardize collateral management practices across Legal, Credit, Sales, Middle, and Back Offices
- Employ advanced risk and credit frameworks for credit-value adjustment (CVA) to capture volatility in counterparty risk
- Standardize trade agreement documents to support transactions with CCPs, clearing brokers, and market utilities
- Improve tracking and segregation of collateral to protect assets and support trade portability
- Create enterprise-wide collateral inventory across product silos
- Prioritize the use of idle assets over cash and cash-like collateral
- Automate collateral operations for real-time, aggregated reporting
- Create visibility into common collateral pools across the organization
- Manage collateral chains to incorporate regulatory limits for asset rehypothecation
- Link returns on assets with the cost of funding to appropriately match collateral sources and liquidity
- Improve stress-test simulation and master agreement management to understand enterprise risk
**Our Approach**

We believe financial institutions will need to embrace a holistic approach for an effective collateral management program and PricewaterhouseCoopers Co., Ltd (PwC) has identified six critical components: Documentation, Automation, Transformation, Optimization, Mobilization, and Segregation. Although each area is important in its own right, the interrelation between them is critical to achieving a holistic solution.

A comprehensive approach will 1) allow the front office to gain greater control of collateral selection against trading positions 2) provide the treasury department the most effective use of collateral for capital requirements and liquidity 3) minimize demand for high-grade and additional collateral for margin requirements 4) utilize service providers to help identify associated risks and reduce operational costs.

**Our approach outlines the critical components:**

- Systems used to support various segregation models and automatically track collateral held by custodians, CCPs, dealers, and rehypothecation
- Trade data repositories, electronic messaging, and shared market utilities to aid document management
- Real-time exchange of data, STP workflow across collateral management lifecycle with external counterparties, service providers, and utilities
- Common view of collateral inventory across all asset classes, business lines, and repositories to allow for efficient identification and deployment of assets
- CVA desk to manage supply and demand, algorithmic approach to rank collateral based on predetermined factors, consideration for cross-product margining
- Seamless connection with market utilities to transform and match assets, report consolidated collateral activity and positions across locations and jurisdictions
**Contacts**

Collateral management transformation is a complex undertaking that requires a trusted partner for success. PwC offers deep industry experience working with multinational financial institutions across banking and capital markets, insurance, asset management, hedge funds, private equity, market utilities, and financial technology. Through our extensive network we help organizations address issues across all dimensions of the collateral lifecycle from business impact to strategy design, solution implementation and post integration.
Keiichi Aritomo +81 80 3314 7620  keiichi.aritomo@jp.pwc.com

Takeshi Shimizu +81 90 6515 1754  takeshi.shimizu@jp.pwc.com

Bruce Deaner +81 70 1530 4424  bruce.deaner@jp.pwc.com

Terunori Morosawa +81 80 4171 8305  terunori.morosawa@jp.pwc.com

Nic Wilson +81 80 4179 8083  nicholas.n.wilson@jp.pwc.com

© 2015 PricewaterhouseCoopers Co., Ltd. All rights reserved.
PwC refers to the PwC network member firms and/or their specified subsidiaries in Japan, and may sometimes refer to the PwC network. Each of such firms and subsidiaries is a separate legal entity. Please see www.pwc.com/structure for further details.

This content is for general information purposes only, and should not be used as a substitute for consultation with professional advisors.