Reference Data Management: The Case for a Utility Model

For capital markets firms to successfully innovate in the reference data management function, they must first focus on reengineering and developing new data management models, while being open to receiving RDM as a service over the long term.

Executive Summary
Capital markets firms are grappling with the challenges of increased regulatory oversight and reporting requirements. The growing emphasis on risk management, industrialization of the sector and the need to address traditional fault lines has exposed the inefficiencies of reference data management (RDM).

Operating in a low-returns era, capital markets firms are struggling to meet increased regulatory compliance requirements and associated costs. At a time when gradual industrialization is forcing them to do more with less, the traditional ways of managing reference data are proving to be cost-intensive and inefficient. The lack of data governance and universal standards compounds the problem.

As organizations realize that data management plays an important role in revenue generation, the need is growing for next-generation reference data management capabilities. Firms must focus on reinventing RDM capabilities and exploiting the power of new technologies such as virtualization and analytics, as well as using social media data to design better trade strategies and improve regulatory reporting, cross-product selling, risk management and operational efficiencies.

We believe firms should deal with these challenges by employing different strategies in both the short-to-medium and long terms. In the short-to-medium term, they should reengineer RDM by establishing an enterprise-wide data governance framework, as well as rationalize data procurement and processing by using an appropriate data management model (centralized, federated or hybrid) that suits their business needs.

Businesses are under pressure to lower costs as the operating environment continues to be characterized by low margins and decreasing revenues. For businesses to survive and grow in such a scenario, we believe that committed players, including service providers, should form a mutually dependent ecosystem in order to establish standards for delivering reference data as service utilities. These utilities should address the needs of players across all markets in which they operate, offering a level playing field and providing cost-efficient services in a secure and reliable environment.
The utilities should offer standardized processes built around universally accepted data standards and industry best practices, with payment based on a per-use basis. The ownership of infrastructure and maintenance costs is transferred to the utility, which is operated by an objective and expert third party, leaving firms with the flexibility to address market volatility. However, the success of utilities will depend on collaboration among the various industry participants.

Ultimately, organizations that are prepared to recast their RDM will secure a significant advantage in these uncertain and volatile times.

**Forces of Change**

Four principal forces are driving the need to overhaul the RDM function. They include:

- Increased regulation.
- Industrialization of banking and financial services.
- Inefficient siloed structures of traditional RDM systems.
- Emergence of next-generation technologies capable of enhancing RDM capabilities.

Increasing financial regulation is subjecting capital markets firms to higher levels of reporting, compelling them to devise new strategies for integrated risk management so they can measure and manage risk and capital across a range of business activities. These challenges will be compounded in this prolonged era of low returns, which is expected to further industrialize the sector.

In such a scenario, the inefficiencies in the traditional RDM model—such as data silos, labor, a cost-intensive data cleansing process, the inability to rationalize data costs and a fragmented vendor landscape—are compelling organizations to rethink RDM. In the aftermath of the global financial crisis, firms are increasingly looking at next-generation RDM capabilities that harness the power of virtualization, social media and analytics to navigate volatile markets, capitalize on market opportunities and improve their operational efficiency and profitability (see subsection, “Addressing Traditional Fault Lines”).

**Regulatory Challenges**

An unprecedented level of regulation is unfolding on both sides of the Atlantic to address systemic risks, as well as the soundness and transparency of the financial industry. These include the Dodd-Frank Act, Basel III, Markets in Financial Instruments Directive (MiFID) II, European Market Infrastructure Regulation (EMIR), Foreign Account Tax Compliance Act (FATCA) and Know Your Customer (KYC). The new emphasis on regulatory reporting encompasses data on trades and counterparty identities to verify compliance and reduce systemic risk.

Organizations will need consistent and accurate reference data to understand the risk profiles and underlying dynamics of financial instruments and their legal entities. Regulatory changes requiring over-the-counter (OTC) derivatives to be traded through exchanges and cleared through central counterparty clearinghouses are expected to put additional pressure on the RDM function. The reason, according to TABB Group, is OTC market reforms in the U.S. and Europe, which will increase data rates by 400%, transaction volumes by 20-fold and market data volumes by three- to fourfold from current levels. The push for straight-through processing with shorter trade settlement cycles and quote- or order-driven marketplaces will compound the pressure on clearing technology and infrastructure requirements.

Another significant impact of increased regulation is the emphasis on risk management. Capital markets firms are expected to improve their risk management systems for both compliance and business purposes. From the RDM standpoint, their ability to understand their counterparty risks is impeded by a lack of universal standards for legal entity identifiers (LEI), as well as inconsistent reference data. Following the global financial crisis, it has become paramount to have a holistic view of risk exposures from a particular counterparty, index, region or adverse event.

**Industrialization of Banking and Financial Services**

The increasing cost of regulatory compliance, coupled with higher levels of mandated capital, is expected to reduce profitability over time. This, in turn, is expected to further accelerate banking
and financial services industrialization. Banks’ return on equity (ROE) has decreased sharply, from 15% pre-crisis to below 10% post-crisis (see Figure 1). Similarly, the ROE of capital markets firms and investment banks stands at 7% to 10%, which is 50% of historical levels and half of investors’ expectations. Today, the average 8% ROE earned by banks in the U.S. is less than their cost of capital.

Basel III is expected to require some banks to hold capital at three times the level mandated by Basel II. European banks will need €1.1 trillion ($1.6 trillion) of additional Tier-1 capital, €1.3 trillion of short-term liquidity and about €2.3 trillion of long-term funding to meet Basel III norms. The rules are expected to reduce ROE of the average bank by 3% in the U.S. and 4% in Europe. An EIU survey reports that a majority of firms are concerned about new regulations increasing their cost base, affecting their financial performance and competitiveness, and hampering their abilities to introduce new products and services (see Figure 2, next page).

The prospect of greater industrialization should motivate organizations to focus on addressing inefficiencies, reining in waste and considering more innovative business-technology initiatives to enable them to survive if not prosper in the low-margin era.

**Addressing Traditional Fault Lines**

RDM has traditionally been viewed as a back-office cost center function and, as such, was treated with benign neglect. Historically, siloed departmental structures have evolved to suit the nature of business, product-centric models and widespread M&A activity. Most organizations run RDM in independent silos, resulting in avoidable costs, which are magnified by redundant subscriptions for data and customized technology platforms to manage data. As such, firms typically end up subscribing to and cleansing (a labor- and cost-intensive process) a nearly identical set of reference data multiple times. The customized reference data requirements of individual business units require skilled data specialists to manually fix inconsistencies and optimize data. The same siloed model is replicated even when the RDM operation is outsourced or sourced to captives.

Many reference and market data vendors have a niche focus and specialize in certain asset classes and regions. Therefore, firms that cover several asset classes and regions must source data from multiple vendors. With no universal industry standard in place, many data vendors and firms use proprietary standards to identify and enrich their reference data.

Many organizations also fall short on enterprise-wide data governance and struggle to understand the lineage of data, how much of it is used and by whom. Without a handle on how reference data is used across the organization, rationalizing data handling costs becomes a daunting task.
Adopting Next-Generation Technologies to Enhance RDM Capabilities
Organizations realize that data management is no longer a cost center but an important component of revenue generation. Capital markets firms looking to improve their operational efficiencies and flexibility need to understand that it can only be possible with a next generation of reference data management capabilities that make use of social media, analytics and virtualization. In addition, such capabilities can help firms improve their regulatory reporting, risk measurement and trade strategies.

With markets-related news often breaking first on social media, businesses can now deploy analytics to decode, interpret and analyze the data to feed their trading strategies in order to gain a first-mover edge over competitors. Traders can also make effective decisions using powerful analytics solutions that provide insights gleaned from thoroughly organized data repositories in user-friendly visualization approaches, such as dashboards.

Organizations that are overwhelmed by operations that span multiple assets and multiple regions require exceptional data management strategies and acumen to excel at risk management and enable the front office to make the most of market opportunities. Creating a virtualization layer – software that enables data from multiple platforms, asset types and regions to co-exist as if they are physically residing on the same server – can help these firms overcome the challenge of centralizing reference data from multiple repositories. Organizations can save on infrastructure costs by eliminating the need for physical centralization of data. This can also help companies avoid data redundancies and fragmented datasets and enable better lifecycle management of reference data.

Overhauling RDM: Two Approaches
Deciphering the impact of region-specific regulations on RDM operations is difficult for businesses that engage in cross-border, cross-asset trading. Also, improving existing RDM infrastructure will require a significant investment. According to TABB Group, the financial industry’s 2011 global spending on clearing and back-office technology to comply with OTC derivatives regulations was projected to reach $3.3 billion.

The prospect of operating in a prolonged era of low margins and high cost of operations is forcing organizations to seek innovative solutions. Businesses will, therefore, need to focus on addressing inefficiencies and improving operations.

Even as capital markets firms deal with the inefficiencies of their siloed structures, the cost involved in RDM is rising rapidly (see Figure 3, next page). In 2011, data costs accounted for about

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Impact of Proposed New Regulations
Respondents indicated a significant adverse impact on costs and financial performance.

<table>
<thead>
<tr>
<th>Impact Description</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>It will increase our cost base</td>
<td>82%</td>
</tr>
<tr>
<td>It will hamper our ability to introduce new products and services</td>
<td>53%</td>
</tr>
<tr>
<td>It will adversely affect our financial performance</td>
<td>53%</td>
</tr>
<tr>
<td>It will harm our overall competitiveness</td>
<td>44%</td>
</tr>
<tr>
<td>It will divert management attention away from more pressing issues</td>
<td>42%</td>
</tr>
<tr>
<td>It will make it more difficult for us to attract and retain customers</td>
<td>17%</td>
</tr>
<tr>
<td>It will weaken our balance sheet</td>
<td>17%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
</tr>
</tbody>
</table>

Response base: 160 senior financial service executives from Western Europe
Source: Economist Intelligence Unit
Note: Respondents were asked to select all options that applied to them.
Figure 2
$333 billion, roughly 83% of the $400 billion spent on technology globally by the sector. Using inaccurate reference data leads to failed trades and can cost firms millions of dollars in lost revenue and financial liabilities. It can also lead to misrepresented corporate actions, high reconciliation costs, reduced efficiency, adverse effects on pre-transaction risk assessment and increased costs of repairing failed trades. The absence of an industry-wide standard for LEI is a major impediment for firms in measuring and reporting risk.

Businesses can cope with these challenges by creating long- and short-term strategies:

- **Short-term strategy**: Reengineer RDM and use an appropriate data management model (centralized, federated or hybrid).
- **Long-term strategy**: Develop a collaborative cross-industry ecosystem that facilitates the delivery of RDM as service utilities.

**Reengineering RDM and Using an Appropriate Data Management Model**

Organizations must prepare their reference data management systems for the future. As a first step, they need an accurate understanding of their data requirements. Establishing an enterprise data governance framework helps determine the lineage of data and identify both the kinds of data being used and the patterns of usage. A data governance model can establish boundaries, hierarchies and ownership of data. This, in turn, will allow capital markets firms to gather and distribute accurate and consistent data to their business units.

Optimizing data management also helps rationalize data costs. It enables businesses to accurately identify data requirements, consolidate them and negotiate on scale with data vendors. Centralizing the procurement of data eliminates redundant subscriptions, improves data management and enables optimal utilization of data specialists, resulting in considerable cost savings. Organizations can save 10% to 15% of addressable costs for market data and exchange fees through selective use of market data providers. They can also benefit from improved operations that produce high-quality data, eliminate data silos and enable them to generate customized views of their exposure to risk.

Reengineering of RDM also paves the way for developing “golden copies,” or single versions of the truth, thus doing away with inconsistent data. It improves the quality and accuracy of the data and reduces the refining required. It also enables consolidation of reference data from multiple vendors and internal enrichment by business units. This consistent set of data is then disseminated to business units, providing them with a complete picture of the risk profiles and underlying dynamics of financial instruments and their entities. The data also allows them to effectively manage their exposure to risk in various segments of the market.

Firms can meet the unique requirements of business units with customized golden copies made available through various data management models suiting their business needs. Centralized, federated and hybrid models offer a range of alternatives that enable proper data ownership

**Market Data Spending Initiatives 2011**

Respondents’ top spending priority was new technologies to manage data of new asset classes and geographies.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New technologies</td>
<td>48%</td>
</tr>
<tr>
<td>Data feeds</td>
<td>39%</td>
</tr>
<tr>
<td>New data from different geographical regions</td>
<td>38%</td>
</tr>
<tr>
<td>Staffing: Business analysis/management</td>
<td>35%</td>
</tr>
<tr>
<td>Data and applications for risk management</td>
<td>28%</td>
</tr>
<tr>
<td>Data on new asset classes</td>
<td>24%</td>
</tr>
</tbody>
</table>

Response Base: 34

Source: Aite Group, 2011

Figure 3
Over the long term, capital markets firms will increasingly operate in environments characterized by lower revenues and decreasing margins, which will exert greater pressure on them to lower costs.

- **Centralized model:** In this approach, the reference data is captured, maintained and distributed by a shared service organization. This model is suitable for large diversified banks with multiple offerings, as multiple lines of business (LOBs) may be serving the same client base. Implementing such a model requires political will in complex organizations and can be expensive and time-consuming. As a compromise, large banks are increasingly adopting the hybrid model.

- **Federated model:** Here, a data “hub” is created to maintain limited data and cross-reference information. A separate shared services organization maintains this hub and publishes the required information to other (subscribing) applications as needed. This model suits large retail banks and mid-sized or small institutions with limited product offerings, with different LOBs serving individual client bases.

- **Hybrid model:** This approach works with a specific set of reference data that is centrally managed by capture and distribution services, although some business units continue to capture and maintain reference data specific to their needs. The data hub maintains cross-reference information. This model is suitable for banks wishing to move to more centralized management of data, with different LOBs maintaining specialized reference data that is not used by others.

Developing a Collaborative Ecosystem to Foster RDM Utilities

Over the long term, capital markets firms will increasingly operate in environments characterized by lower revenues and decreasing margins, which will exert greater pressure on them to lower costs. The burden of the costs and risks of ownership of the infrastructure will compel these firms to seek innovative solutions along the lines of other mature industries, such as the semiconductor business. An ideal solution for firms to operate effectively in such a scenario will be to tap utilities that are aided by a collaborative ecosystem formed by the capital markets players.

Regulatory support can aid in establishing universal standards for reference data. In addition to this support, it is critical to build a collaborative ecosystem that ensures a level playing field is created for all participants by eliminating a multitude of data standards and providing players with a legal certainty to invest in sanctioned standards. This largely stable, standardized and commoditized reference data can then be provided by RDM utilities to capital markets firms. As the reference data is produced and consumed by industry players, the ecosystem can provide a neutral ground and the required business support to start building successful RDM utilities.

The utilities will own the sophisticated infrastructure, people and processes to store and retrieve complex reference data, effectively assuming the total costs and risks of RDM ownership. The utilities can charge on a pay-per-use basis, which is more economical and allows firms to convert Cap-Ex into more manageable Op-Ex, a critical option given increasing margin and compliance pressures. These utilities would use industry-accepted standards and embed standardized RDM processes built around industry best practices.

Reference data comprises “public reference data” – data that does not provide competitive advantage – and “private reference data” – proprietary data, such as calculated prices and analytics data. These utilities must ensure that private data is protected and firms have full control over it and that public data is delivered at the lowest possible price point.

Consistent operations enable better execution, reduce individual firm risk, support growth, cut costs and improve customer experience. With the entire RDM function managed by utilities, banks can quickly respond to changing markets and regulations and spend less time expanding into other geographies and asset classes.

The participation and contribution of all players is essential for creating a utility that is global in
nature to support all types of trading activities and lower the cost of reference data services. The ecosystem and utilities can enable cost-effective access to new markets, technology and infrastructure. We believe as more and more capital markets firms partner to build utilities and subscribe to reference data services, roadblocks will be removed for increased uptake of utility services.

Inside the ecosystem, firms should collaborate to address concerns over latency times, the culture change involved in sourcing reference data from a utility and issues around ownership and sharing of legal risks. The ecosystem should strive to improve the utility services to prepare and scale them to serve their needs in an ever-changing and volatile market. Utilities should be able to serve players of all sizes and businesses by designing feasible models. For example, an ideal scenario would be utilities offering standardized processes with minimal switching costs.

An ecosystem must address key challenges, such as getting the critical mass of players to build and buy into utilities, while providing effective participation incentives. Nevertheless, building RDM utilities is a feasible idea that will succeed with the right regulatory push and cooperation of industry participants.

The Road Ahead
The BFS industry continues to be characterized by low margins, cost pressures, volatile markets and neglected back-office processes. Understandably, cost containment and efficient risk management will top firms’ strategic priorities, along with building RDM capabilities that will help them improve their profitability in a radically changing operating environment.

Capital markets firms can perhaps learn from the experience of the semiconductor industry. Companies quickly found that it was more efficient to outsource the component fabrication to a specialized manufacturer and focus on chip design. Similarly, capital markets firms facing relentless pressure on their profitability and margins can move the management of commoditized reference data to specialized utilities, while they focus on using the data to improve their business.

As more utilities significantly reduce costs, capital markets firms will have sown the seeds of a new model capable of meeting the demands of the industrialization era.

Footnotes

1 The scenario in which financial firms embrace the rigors of manufacturing process excellence to optimize their low-margin and low-returns businesses by focusing resources on core functions that drive competitive advantage and tasking contextual activities to third-party experts.


6 Ibid.

7 Ibid.
Social media platforms are faster than traditional media in disseminating news. They also provide leading indicator data, which asset managers, equity analysts and high frequency traders are using to their advantage. In addition, they are using social media data for sentiment analysis, as a "breaking news" stream for their investment decisions and trading strategies.

Virtualization is helping firms across industries reduce data center costs through efficiency gains and improved server utilization. Citi, for example, reduced its 72 global data centers to 20 as part of its five-year data consolidation plan, increasing server and storage utilization from 10% to 60%. In another case, Metro Health reduced its data center infrastructure costs by 30%, using a virtualization solution from Cisco.


To enable this, the utility platform must support a public access area and a private access area. A well-architected platform can ensure the right level of access control.

Euroclear Bank and SmartStream have partnered to create a centralized reference data utility that will allow clients to choose the precise format in which they need securities data. The utility will validate, cleanse and enrich securities data, sourced from stock exchanges, central securities depositories, data originators and data vendors.

References


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