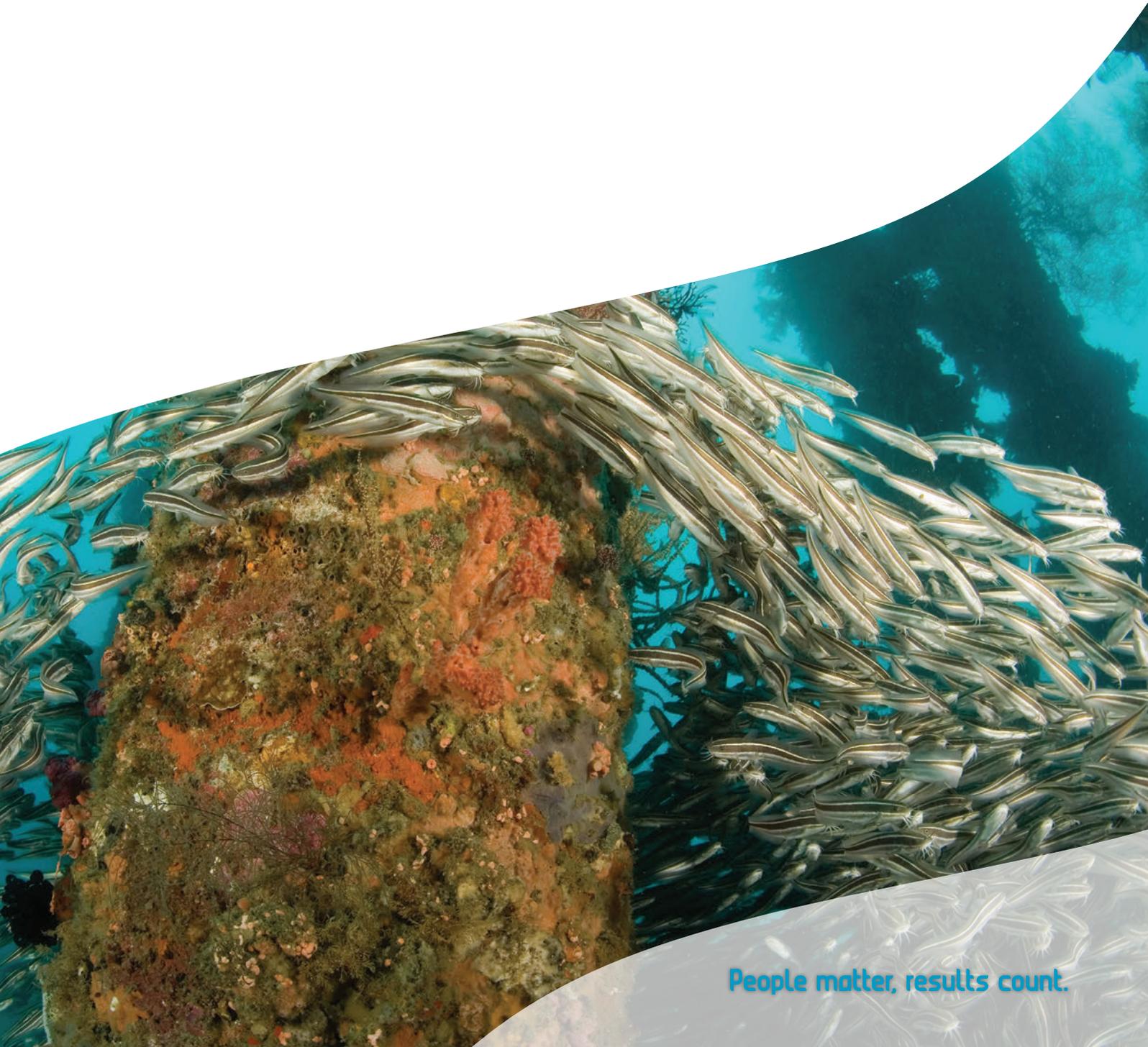


# The Role of the Chief Data Officer in Financial Services

**Leading the way to an information-centric enterprise that is fully connected, operationally efficient and capable of delivering high quality data**



# Contents

---

<b>1. Executive Summary</b>	<b>3</b>
<b>2. 18 Reasons Why Your Organization Needs a CDO</b>	<b>4</b>
<b>3. The Data Management Organization: What It Is and How It Works</b>	<b>10</b>
<b>4. 11 Key Services Provided by the Chief Data Officer and Data Management Organization</b>	<b>13</b>
<b>5. Organizational Alignment and Funding for the Chief Data Officer</b>	<b>20</b>
5.1. Where Should the CDO Report?	20
5.2. Are the CDO and Chief Data Architect Roles the Same?	21
5.3. Who Funds the CDO and DMO Functions?	21
5.4. 15 Key Qualifications for a CDO in Financial Services	22
<b>6. Why the CDO Role Makes Sense in Financial Services</b>	<b>23</b>
<b>7. Conclusion</b>	<b>25</b>
<b>Appendix A: Lessons Learned</b>	<b>26</b>
<b>Appendix B: Tools of the Trade for the CDO and DMO</b>	<b>28</b>
<b>Appendix C: Basel II Data Management Requirements Demand Demonstrable Transparency, Lineage and Quality</b>	<b>29</b>
<b>Appendix D: Repository &amp; Business Catalogue Framework for a CDO</b>	<b>30</b>
<b>About the Authors</b>	<b>31</b>

---

# 1. Executive Summary

The ability to effectively and efficiently manage the vast and disparate array of corporate, customer and other business information that drives today's largest financial services operations is rapidly emerging as a critical objective for the leadership of these firms—regardless of their respective market and geographic focuses.

Information is the DNA that catalyzes the actions and reactions of these organizations to the many opportunities and demands that confront FS leadership teams on a regular basis—whether driven by market, customer, regulatory reporting, risk management, shareholder value or other considerations. In short, information can herald the growth of an organization's brand and performance if properly managed, or choke the life out of the business if its value as a strategic corporate asset is under appreciated or ignored.

If one accepts the premise that the quality of an organization's information management (IM) infrastructure, supporting systems and practices can materially impact the overall performance of the firm, then the next logical question is what are the best IM practices that a financial institution should adopt and implement to optimize its own performance?

For many if not most financial institutions today, the concept of an end-to-end IM program has been an elusive dream. This is especially true with multi-line and multi-national entities where individual business units or lines of business routinely operate in silos with only a thin veneer of shared services and standards in place across the enterprise.

In a few instances, however, some financial institutions have already embarked on a path to transform their disparate operations and data plants into an enterprise-level program that elevates information to its deserved status of strategic asset, reshaping the business into a truly information-centric enterprise where both data quality and consumption are aggressively and consistently managed by the leadership team.

For those firms that have begun or may begin the journey to a more enriched information program, no single resource is more vital to the effort than a leader who is empowered to be the steward and champion of the enterprise's information. It is this steward who is anointed by executive management to lead the transformation of the enterprise into an information-centric world that is fully connected, operationally efficient and capable of delivering data whose quality is beyond reproach.

So, who within the enterprise is being charged with this most critical responsibility? More and more, major players in the financial services industry are looking to the **Chief Data Officer (CDO)**—for many institutions, a new role—as the steward and champion of enterprise information management.

The scope of this paper is to discuss the role of a CDO, the most critical functions of this office, why a Data Management Organization (DMO) is needed to support the CDO, and how and why the CDO is best positioned to be the catalyst for this desperately needed enterprise transformation effort.

## 2. 18 Reasons Why Your Organization Needs a CDO

**Aggregating enterprise-wide data for business consumption requires a concerted effort and is all but impossible without a champion—the Chief Data Officer.**

Why does a financial services institution need a Chief Data Officer (CDO)? Based on our experience supporting the integrated business information management needs of many of the world's largest and most complex financial services organizations, we have discovered certain common parameters, themes, business and organizational challenges, and information technology demands that necessitate the need for a CDO. Below are 18 of the most compelling drivers for this critical executive role.

### **Driver #1: Global operations are typically complex, disparate and often inefficient in their approaches to information management (IM).**

Most large financial services organizations today are multi-national. Their operations span multiple countries, are typically supported by staff that is fluent in a variety of languages, and are often operated and governed on a local and decentralized basis. IM is a mission critical function that spans these countries and their respective operational business units. Implementing IM as a consistent program across the geographic footprint of the business requires an identified and duly empowered executive level champion, the CDO.

### **Driver #2: Critical information is siloed.**

Enterprise information in most organizations today is siloed or distributed across many operational systems and databases. This information relates to customers, products, investments, and other core organizational competencies and typically resides within systems that are focused on specific functions such as CRM, accounting, portfolio management, actuarial reporting, loan servicing, claims management, and policy administration, among many others.

The problem of disparate data even further exacerbates when these individual systems are replicated within discreet geographies, business units and other lines of corporate demarcation. And, the issue is even more challenging for large global organizations that have engaged in merger and acquisition transactions. For these firms, the number of information silos with which they must contend is even greater.

Aggregating all of this enterprise-wide data for business consumption requires a concerted effort and is all but impossible without a champion—the Chief Data Officer—mandated and empowered to accomplish this task.

### **Driver #3: Siloed information impairs enterprise level reporting, decision-making and performance optimization.**

A typical global financial services firm has multiple lines of business and operational boundaries. For example, leading global banks maintain retail, commercial, wealth management, investment banking and even insurance operations, among others. Similarly, top tier global insurers operate life, P&C, commercial and specialty insurance lines of business, in addition to money management and often retail banking functions. Aligning information across these organizational boundaries is both an operational challenge and a necessity. An enterprise-focused Chief Data Officer and supporting staff can build needed bridges between local operations

**Aligning information across these organizational boundaries is both an operational challenge and a necessity.**

and the parent entity to facilitate information management needs company-wide in response to both internal and external information consumption, reporting and management demands.

**Driver #4: Aggregated information is required by certain business functions, but not readily available.**

Critical corporate functions such as risk management, finance, compliance, and marketing regularly require information to be consolidated and rationalized across multiple business units and geographic operations. Today, much of this data and associated processes, people and systems are instantiated in silos that challenge the required enterprise view. For most multi-national firms with diverse operations and lines of business, aggregation of this data is no longer an option. Only through the committed and dedicated focus of an empowered senior executive leader—the CDO—and his or her team can this mission critical objective be achieved.

**Driver #5: Business and IT neither talk the same language, nor have a common understanding about information management, causing a considerable knowledge gap to exist with regards to critical data elements for the enterprise.**

In most FS organizations today, regardless of their size and complexity, there is a great disparity between Business and Information Technology regarding the ownership, management and consumption of data. As the ultimate consumer of information within the corporation—be it financial, risk management, investment, or customer-related—the Business must leverage available data to make decisions, report to key stakeholders, develop new products, obtain and maintain customers and clients, and otherwise enable operational efficiency and effectiveness. Unfortunately, many Information Technology operations are often more focused primarily on architecture, infrastructure and tools and, as such, not necessarily aligned with the data needs of their business counterparts.

In fact, IT and Business frequently speak to one another in different languages, which further keep them out of sync, if not at odds—all to the ultimate detriment of the enterprise at large. The result is a significant knowledge gap between Business and IT relative to the key information elements that define a given business and information management. In the end, this lack of symmetry only serves to undermine the ability of the enterprise to meet its most critical business management obligations and needs.

**Financial services organizations require Business and IT to be well synchronized relative to information management.**

Today, more than ever before, financial services organizations require Business and IT to be well synchronized relative to information management. Coordination and collaboration of Business and IT in the information management area is a mission critical focus of an empowered Chief Data Officer. By aligning subject matter expertise in core enterprise functions (such as risk, finance, compliance, customer experience and investments) with a well-defined and highly supportive information infrastructure, the CDO can bridge the gap between Business and IT.

**Driver #6: Information management budgets and program focuses are siloed.**

IT and associated information management budgets are often split across business units and geographies. Frequently, this structure leads to multiple information management projects being unilaterally executed by individual business units, the result of which is unnecessary duplication and disparity. Rationalization

**Semantic disparity exists in most organizations because Business and IT refer to similar information assets in different ways.**

of programs that serve similar functions and objectives across business units is a daunting challenge. Without an enterprise leader who is charged with and committed to the responsibility of eliminating wasteful spending in the information management area, organizations will continue to spend unnecessary funds and struggle to meet their enterprise level information management obligations. A CDO can be the key player in resolving this challenge.

#### **Driver #7: Enterprise information is semantically disparate.**

One of the most daunting challenges facing global financial services firms today centers around the semantic disparity of information within the organization. For example, terms such as “Yield,” “Deposit,” “Lien Position” and the like are routinely used across the enterprise by a variety of operations, including risk management, finance, actuarial and asset management, each of whose perspective and intent may be very different than the others. Unfortunately, however, these terms have different meanings for different users. For example, there are many types of “yields”—yield to maturity, yield to worst, or yield to a specific call or put data—but all too often the data consumer has no clear understanding of which specific “yield” is being presented online by the reference database being used and if it is the right “yield” for the report or calculation or decision that needs to be made.

In short, semantic disparity exists in most organizations because Business and IT resources refer to similar information assets in different ways and have no single enterprise level glossary that defines all of the terms and uses across the business. This, in turn, often results in the wrong data element being selected for the purpose at hand.

Solving the problem of semantic disparity is one of the most fundamental building blocks of a sound enterprise information management program as it serves to help operationalize data governance and stewardship, data quality, and information traceability needs across the business. Common information management methods and tools must be adopted and deployed globally to assure that business-focused resources are utilizing valid and reliable information to meet their specific functional purposes. Only through the identification of critical enterprise data elements (CDEs) for the business and the reposition of their unique definitions in readily accessible, taxonomy-driven business glossaries, will the Business be properly positioned to meet its many obligations to internal and external stakeholders, regulators and the like.

A CDO is required to establish and execute this mission critical information management effort.

#### **Driver #8: The information management needs of multiple “owners” across the enterprise must be rationalized.**

Transforming a financial services organization into an information-centric business demands a concerted focus on rationalizing information, processes, applications, systems and people. Such a transformation also requires a leader—the Chief Data Officer—who can organize, execute and manage this transformation, while concurrently mediating interests of multiple businesses and IT functions.

**The Business perceives a lack of agility and responsiveness on the part of IT.**

**Driver #9: Decentralized IT organizations that operate independently within individual business unit, add complexity and challenge.**

One of the key issues that many organizations face today is that information management technologists frequently sit within individual business units. Often, these dedicated resources undertake activities that duplicate similar functions that reside within IT or other parts of the organization.

For example, a group of data management specialists may sit within a risk management operation of a subsidiary, creating new information repositories on demand to meet changing business needs. Without appropriate enterprise-level controls in place, there is no assurance or even likelihood of information consistency across the enterprise risk operation, or the global organization at large.

The CDO can serve as a catalyst to validate or invalidate the need for such ad-hoc structures and organizations and cost leakages within companies, while providing the appropriate levels of service required by the Business.

**Driver #10: Business perceives IT as being insufficiently agile to meet ad hoc information needs.**

One of the principal reasons why businesses create information technology silos within their operations, thereby duplicating central IT functions, is because the Business perceives a lack of agility and responsiveness on the part of IT. Analytical consumers often require information to be created or made available on demand with very tight turnaround times. And, often these functions need to be performed iteratively.

For example, for strategic marketing campaigns, vast amounts of customer and related data need to be gathered, staged and analyzed by business users multiple times before and during the campaign to assure the ultimate effectiveness of the initiative.

Frequently, IT is seen as being insufficiently responsive to such requirements. A focused and collaborative information management program led by a CDO can be more responsive to the Business and allow for such duplicated structures and costs to be eliminated.

**Driver #11: Business and IT can't agree who actually owns the data.**

Data governance and stewardship are key challenges confronting most financial services organizations today, especially complex global entities. Business functions create, leverage and interpret the data as part of the information management life cycle. Once aggregated, analyzed and interpreted, data forms the basis for a wide range of decisions and actions in response to internal and external demands on the enterprise.

But in most financial services organizations, there is often confusion about who actually owns the data. With multiple geographical and organizational boundaries being a reality for global financial services organizations, implementing effective data ownership has proven to be a difficult if not daunting challenge. A Chief Data Officer function is critical to operationalize a data governance and stewardship program to clarify ownership of specific bits of data across the organization. As we have seen time and again, without a catalyst to move such programs forward, they simply stall.

**Regulatory bodies are now requiring information management to be a foundational effort within all FS firms for purposes of risk management and compliance reporting.**

**Driver #12: Data context is critical to consumers, but often lacking.**

Data context is a key element of an effective information management program. For example, an investment reference data Security Master File may be utilized in different contexts within a trading process, a settlement process or a portfolio optimization process. Knowledge repositories that archive detailed business rules; usages and context for individual data elements are needed to assure clarity for business-centric consumers, regardless of their respective locations and functions. The CDO can establish data context and usage parameters across an organization for all shared data and consumers.

**Driver #13: Operationalization of information management projects at the enterprise level is a difficult challenge.**

While most financial services organizations have implemented an array of technologies to support their information management needs in a more siloed manner, very few have yet to operationalize an end-to-end enterprise-wide program that marries a strong information management foundation of data controls—such as governance, quality and semantics—with tools, processes and the like. In reality, without Board and Executive Management level commitment, including their empowerment and funding of the Chief Data Office function to orchestrate a programmatic approach to information management across the company, financial services firms will remain the victims of their own lethargy in addressing one of their most critical needs.

**Driver #14: Regulatory mandates make effective information management no longer optional.**

Information management as a concerted competency is no longer optional for financial services organizations. Regulatory bodies such as the U.K. Financial Services Authority (FSA) and the U.S. Federal Reserve Board (FRB) are now requiring information management to be a foundational effort within all FS firms for purposes of risk management and compliance reporting. Achieving and maintaining compliance with these mandates is now mandatory and many regulators view the Chief Data Officer as a mission critical executive role to assure that the organization is appropriately focused and responsive in terms of its reporting obligations and performance. An empowered CDO is best positioned to orchestrate and manage the transformation needed to meet the challenges of ever increasing regulation. Please reference *Appendix B* for Basel requirements for data quality and controls.

**Driver #15: Data quality must be operationalized across the entire organization to assure the efficacy of the information that business users consume.**

Data quality has a direct and material impact on virtually every aspect of an FS business, including financial reporting, risk management, customer profitability assessment, investment management, loss reserving and certainly compliance reporting—for Basel II and III, Solvency II, Dodd-Frank and more. It is not surprising then that more and more Corporate Boards are embracing the need for improved data quality as an enterprise-wide mandate. Data quality operationalization requires multiple business and information technology processes, systems and people to be coordinated and aligned. In a large organization, this is only possible with appropriate and broadly empowered leadership at the helm of the data quality program, working in concert with Business and IT. Business organizations and IT frequently lack the right levels of expertise, skilled resources, methodologies and best practices to effectively operationalize data quality. Such a

**Data needs to be actively managed on an enterprise level for its embedded value to be realized.**

massive cross-functional effort requires a catalyst to mobilize geographically and functionally dispersed staff. In most financial organizations today, the Board is looking to the function of Chief Data Officer to marshal the assets required to assure consistent and reliable data quality.

**Driver #16: FS firms need to become information-centric enterprises.**

There is a clear paradigm shift under way today among financial services firms to become information-focused enterprises. With ever increasing regulatory reporting demands, increased exposure to credit, market and operational risks, and unparalleled competition for customer assets and allegiance, financial institutions are finally appreciating the uniquely strategic value of the data that they hold and continue to amass. The ability to leverage this information, however, does not come without a commitment of resources and funds for planning and execution. Data needs to be actively managed on an enterprise level for its embedded value to be realized by the company. This cannot happen without organizational alignment, executive management focus, funding and a methodical business transformation process. The CDO function is the logical enabler and driver of this initiative.

**Driver #17: Successful transformation of an FS organization into an information-centric enterprise requires a designated champion from senior management to educate and guide the company in operationalizing strategic data plans.**

Information strategy and architecture, data governance and stewardship, business semantics and taxonomy-driven ontologies, taxonomies/glossaries/business dictionaries, business metadata management, information rationalization—these and other mission critical change initiatives can be hard to comprehend and even harder to operationalize in many organizations. To that end, the Chief Data Officer and his or her team will serve not only as strategists and implementers, but they will also act as educators and mentors to others in what is certain to be an often uncomfortable but necessary metamorphosis.

**Driver #18: Strategic thinking and decision-making is needed on the issue of whether data should be centralized or distributed.**

A significant question confronting many financial services firms today is whether to centralize and manage key information assets within a single IM infrastructure, or distributed across the enterprise. For example, should multiple business units share a single customer master data management environment, or should each BU maintain its own version?

The answer to this and others similar questions depends in large part on the potential impact on other business functions that must use the relevant data to meet their internal and external analysis, reporting and other processing needs. These business functions include risk, actuarial, new product development, investment, financial, and marketing functions, among others. Without strong, capable and empowered information management leadership in the form of an enterprise-level Chief Data Office, the decisions made can either save or cost a financial services firm millions. Decision by committee is no longer the right approach. There is no time for political debates between multiple Business and IT players. Someone with full and clear accountability to the Board, Executive Management and corporate stakeholders needs to drive the process and assure its efficacy. That person is the CDO.

### 3. The Data Management Organization: What It Is and How It Works

**To effect a truly lasting change in a large organization, the CDO must be empowered to organize, engage and lead a team of best of class practitioners.**

In most financial services companies today, enterprise-wide changes are required to successfully implement a next generation information management strategy. These changes will not happen by themselves and the task will be even harder for multinational organizations that currently have diverse geographic, structural and operational boundaries. In large, complex entities such as these, taking on critical information management change initiatives through the refocusing and repositioning of the organization is squarely becoming the responsibility of the Chief Data Officer. But, it is clear that this task is beyond the capacity of any one person. A broader commitment of corporate resources from both Business and IT is certainly required to successfully bring about these actions across the enterprise.

To effect a truly lasting change in a large organization, the CDO must be empowered to organize, engage and lead a team of best of class practitioners, who possess corporate-wide knowledge and experience, as well as a shared vision, roadmap and accountability for the task at hand. Today, more and more companies are recognizing this need and creating a multi-functional internal data management organization (DMO) in direct response. In some firms, this collaborative function is known as the **CDO Office** or **Data Management Program Office**, while elsewhere the new structure is labeled as the **Strategic Information Management Program** or **Strategic Information Initiative**.

Whatever the name may be, the objective is the same—to help the Chief Data Officer implement and support a more collaborative and aligned information management infrastructure for the benefit of the organization at large. Accordingly, the DMO is a manifestation of the CDO function as a whole, with the Chief Data Officer sitting at its helm directing critical activities and reporting progress back to the Board, executive management and even regulators in some settings. Through the data management organization, the CDO can effectuate and guide the company's change to an information-centric enterprise by fostering information management as a concerted vision and corporate-wide program independent of geographic borders and functions. Together, the CDO and DMO positions information management as a business-driven enterprise competency that firmly leverages IT as the ultimate enabler.

What is the DMO and how does it function in concert with the CDO?

#### **The DMO is an organization**

The Data Management Organization (DMO) is an internally-organized and shared enterprise function that enables a financial services organization to implement a concerted information management program involving business and IT staff alike. The DMO is business-led and IT-enabled. The CDO and DMO link business and IT functions, with a core focus on information management strategy and deployment.

**One of the biggest gaps in most FS firms is the unavailability of resources, who possess both business subject matter expertise and experience in the methodologies and best practices needed to effectively connect business requirements to IT.**

### **The DMO is a set of capabilities**

The DMO is a set of enterprise-wide capabilities that encompass people, processes, methodologies, best practices, engagement models, technical tools and solutions.

### **The DMO is a group of internal consultants and expert facilitators**

As stated above, in a large multi-national financial services organization, the Chief Data Officer alone cannot effectuate required changes for effective and efficient enterprise information management. A supporting team having appropriate levels of knowledge and expertise is also essential. The DMO is a group of best of class practitioners, who come together to serve as the enablement arm of the CDO. The DMO is implemented typically as an internal consulting or change management function, and its members work with various business units and other operational entities to implement a consistent and company-wide information management program. DMO resources effectively serve as accelerators to execute and operationalize change. They also serve as knowledge brokers and guides for key competencies such as data governance, data quality, business semantics, business metadata management, scorecards, data security and other core IM transformation program initiatives.

Currently, one of the biggest gaps that exist in most FS firms is the unavailability of resources who possess both requisite business side subject matter expertise as well as experience in the methodologies and best practices needed to effectively connect business requirements to IT. Accordingly, successful CDO-DMO structures also must include information experts, who understand the core information domains of risk, finance, product and customer, and can work with pure IT and IM specialists to bridge the information gap between the Business and IT.

### **The DMO is a set of competencies and services**

Key competencies and services that comprise a successful best practice-based DMO function include: business process management, business semantics, enterprise data modeling and methods, analytics, information strategy and architecture, data governance and stewardship, data quality operationalization methods (including data testing, data profiling and remediation, data standards, data security and masking, and data archival and retention), data visualization, data distribution, master and reference data management, and, finally, Big Data management.

Service-oriented architecture concepts borrowed from traditional IT practices, but restated as data SOA solutions and messaging, are also today being incorporated as part of a CDO-DMO function. Clearly, the expectation is that DMO members must be deeply skilled and highly collaborative as they work to reshape the company into a more information-centric structure.

### **The DMO is a set of best practices and related methodologies**

The DMO is responsible for both identifying relevant information management best practices and providing related methodologies that support the various DMO competencies and facilitate the organization's transformation to its target state. Best practices and consistent methodologies enable both the DMO and CDO to be catalysts for the realignment of a disparate enterprise into a maintainable, integrated information-centric organization.

**The DMO governs the adoption and implementation of information management standards across the enterprise.**

### **The DMO is a set of tool and technology enablers**

Another critical function of the DMO is to govern the adoption and implementation of information management standards across the enterprise. These standards extend to tools for data warehousing, ETL, reporting and dashboards, analytics, metadata management, process and data modeling, data quality assessment and remediation, data governance and stewardship, master/reference data management, data masking and Big Data management, among other core competencies. Tools that do not support key enterprise level requirements must either be eliminated from the technology stack or relegated to a more subordinated role for a firm to be able to achieve critical business and IT objectives such as data traceability and lineage in response to broader internal and external information management demands, including prevailing regulations such as Basel II and Solvency II.

### **The DMO is a set of engagement models**

An effective DMO is a set of engagement models that enable information management best practices to be implemented across the company for a variety of business domains, programs, projects, systems and more. These models enable the DMO and the CDO to engage Business and IT in a consistent manner across the organization, regardless of geography or domain.

## 4. 11 Key Services Provided by the Chief Data Officer and Data Management Organization

More than ever before, information is proving to be one of a financial services firm's most strategic, yet previously under-appreciated assets. Perhaps more than in any other industry, product and service offerings in the FS sector are derived directly and almost exclusively from information maintained by or otherwise accessible to the company.

The shared role of the CDO and DMO is to serve collectively as a catalyst for the firm's development and implementation of an effective and business value-driven information management program.

**In this capacity, a successful CDO and DMO team provides 11 key services, methodologies and capabilities to their organization.**

### **CDO-DMO Key Service #1: Knowledge harvesting for the enterprise metadata repository imperative.**

In most financial services firms, data spans the enterprise, but is highly siloed. As described earlier, in large, complex global organizations, data resides in multiple information systems that cross both geographic and functional boundaries. Given that information is one of the firm's most strategic assets, harvesting this information in a methodical manner is critical if the company has any hope of effectively transforming itself into a more information-centric entity.

Finance, risk, marketing, HR and other group functions that are responsible for integrating information at a company-wide level, must have the ability to both rationalize information feeds they receive and readily understand the full depth and breadth of information that is being provided through those feeds. The rationalization and integration process cannot even begin, however, if these central groups lack clarity about the information entering their systems, including: where it came from, why it came in, and how it is to be used. It is the obligation of the CDO to serve as the firm's central knowledge coordinator and be able to answer these and other similar questions.

Given the increased volume and proliferation of information across the financial services industry over the past several years, it is becoming more and more necessary for companies to have a designated business information owner, harvester and manager. The CDO-DMO structure is the logical choice to govern the aggregation, consumption and maintenance of this enterprise knowledge for the benefit of the firm at large.

**Enterprise knowledge of business information is generally derived from three major components, which together can be called “Common Information Models.”**

Enterprise knowledge of business information is generally derived from three major components, which in the aggregate can be referred to as “**Common Information Models.**” They include:

- Business Models;
- Technology Models; and
- Control Models.

Managing these models is a core function of the CDO and the CDO-led DMO organization.

To effectively manage a financial services company’s extensive information assets and the associated models that comprise that knowledge, the CDO and DMO require a functionally responsive repository tool that can be deployed and maintained centrally, while concurrently offering ready data access to Business and IT staff across the enterprise.

For example, risk management users housed in London, Hong Kong and New York must be able understand corporate definitions assigned to key business terms such as Loss Given Default (LGD). They must also be able to understand and consistently apply enterprise level rules for calculating and using such values and know the identity of the corporate individual or entity that owns and is responsible for the accuracy and maintenance of this data. Again, through the use of an enterprise repository that captures and presents both required business and IT knowledge, the CDO and DMO can effectively harvest and present essential corporate information.

Many other industries today beyond the financial services sector have also recognized the need to bring together business and IT information. And, to that end, they have come together under the umbrella of an industry standards organization called the “Object Management Group” (OMG)<sup>1</sup> to define a common lexicon and process for the capture and presentation of business and technical information. The resulting standards include, but are not limited to, a Common Warehouse Model (CWM), Ontology Definition Model (ODM) and Reusable Asset Specification (RAS). These standards operate together to enable information stored across multiple enterprise systems and processes to be aggregated in a single business-driven knowledgebase, which in turn is managed as an enterprise information asset.

A business-focused enterprise metadata repository is essential because it brings together critical knowledge assets that reside across the organization—including otherwise disparate information regarding business processes, business glossaries, technology models such as logical models and messaging models, physical data warehouse knowledge, information about reports, and similar corporate information assets. In short, a business-driven repository is needed to provide end-to-end traceability of business information versus traceability of technical elements such as how current data has made its way from its original state to its current form.

---

<sup>1</sup> <http://omg.org/>

Armed with this advanced metadata management tool, the CDO-DMO team can more effectively harvest, manage and coordinate the consumption of business and IT data needed to meet a wide range of enterprise level mandates and purposes in areas such as risk and compliance, finance, product development and customer acquisition and management. The CDO-DMO should own the enterprise metadata repository and provide Business and IT staff across the company with access to it as a shared environment. In doing so, business and IT information can be aggregated into a single repository that services a variety of enterprise information management needs, including company-wide business glossary management, data governance and stewardship operationalization, and data quality rationalization and remediation. Our experience has taught us that the success of a CDO-DMO structure will be severely limited without the capabilities offered by a business-driven metadata repository.

### **CDO-DMO Key Service #2: Operationalizing best practice-based data governance and stewardship methodologies.**

Implementing a consistent data governance and stewardship program in a distributed organization is a key service that must be provided by the CDO-DMO. Often, this is a daunting challenge due to the distributed nature of the organization itself, where resources who work with data on a day-to-day basis are housed in facilities around the world. Data created by these disparate operators move through and reside in many unconnected systems, and often require multiple inefficient and uncertain hops to be aggregated as enterprise business information.

For example, data from a core banking system is moved into a data warehouse, which is then moved to a data mart to feed a risk system, before it is integrated back into the warehouse to feed a finance mart—where it is then ultimately consumed as exposure information by a risk or finance user. In a global organization, many different people, organizations, systems and transformations are involved in this process.

Siloed or disjointed data governance and stewardship programs result in many inconsistencies, a clear lack information ownership and accountability, and, in more instances than not, significant data quality issues—especially when rolled up for corporate consumption purposes. In a highly distributed financial services firm, implementing a consistent data governance and stewardship framework across the enterprise will not happen by itself. Operationalizing a company-wide data governance program is not the same as defining an organizational structure for a governance program. An internal consulting function is required to enable multiple lines of business and organizations to adopt a consistent set of methodologies and best practices for data governance and stewardship. This is a core function of the CDO-DMO partnership.

**Knowledge or semantic disparity exists today in virtually all global financial services organizations.**

### **CDO-DMO Key Service #3: Operationalizing best practice-based data quality methodologies.**

As noted above, knowledge or semantic disparity exists today in virtually all global financial services organizations, especially the largest ones. As a result of the highly distributed nature of these firms, the implementation of company-wide controls via data governance and stewardship has been a significant challenge. Poor or unreliable data quality is often a by-product of the inefficiencies in these two functions. Therefore, improved and assured data quality is a key service that the CDO and DMO must deliver. A distributed enterprise must implement consistent best practice-based data quality processes, methodologies and tools across the organization. Without an internal centralized and duly empowered champion (CDO) and facilitation function (DMO) for operationalizing data quality, this is very difficult to achieve in most companies.

More than ever before, data quality is now an essential initiative for most FS firms and it is quickly achieving program versus one-off project status industry-wide. An effective data quality program requires a number of people, functions and systems to work together in a concerted manner. Business must define its most critical information in way that it can be understood and owned. IT, on the other hand, must be able to understand what the business is seeking and ensure its delivery on a timely and reliable basis. Protocols defining information ownership and consumption must be established and enforced between geographically and functionally dispersed businesses, as well as between Business and IT. And, data quality rules and scorecards must be created and implemented across the organization. This is a very complex effort with many moving parts, and it is a prime focus for the CDO and DMO team today.

### **CDO-DMO Key Service #4: Setting standards for regulatory compliance, data policy, data security and data retention.**

Current legislation, such as Dodd-Frank and Sarbanes-Oxley in the U.S., and more global regulatory compliance regimes, such as Basel II and III and Solvency II, are imposing a great number of reporting requirements, costs and burdens on financial services firms, especially the largest ones. Data security and data retention requirements vary by geography. For example, some countries require twelve years of data retention, while others require seven. And, on the data security and privacy side of the equation, many countries have distinct legislation in place that prohibits client data from being removed from that particular country, no less revealed.

Staying on top of these compliance mandates as a global organization is not easy. Accordingly, managing data compliance requirements and associated compliance requirement taxonomies is an essential service to be provided centrally by the CDO and DMO team. In many, if not most, firms today, this function sits locally, resulting in considerable duplication of work and costs. The CDO-DMO structure can integrate these compliance functions into its standard business processes and provide them to distributed operations as a set of shared corporate services, thereby lowering costs and the risks of delayed or, even worse, non-compliance.

**Without standardization, essential corporate information and related knowledge assets become siloed, which, in turn, impairs company efforts to harvest and manage data for enterprise initiatives.**

### **CDO-DMO Key Service #5: Operationalizing data issue management and resolution (IMR).**

Another key CDO-DMO function involves data issue management and resolution. Many information management challenges are common and similar in nature in large financial services companies that have large and distributed data plants. For example, a common root cause for semantic disparity and other data consumption issues is frequently end-user uncertainty about the quality or meaning of given data elements. Creating a centralized IMR function under the management and direction of the CDO-DMO team enables such challenges to be monitored, matched and resolved faster and with more cost efficiency. The CDO-DMO operation should establish processes, methodologies, tools and best practices for IMR and provide this competency as an enterprise level service.

### **CDO-DMO Key Service #6: Rationalizing and standardizing tools for information management.**

In large financial institutions, many technologies such as tools, systems and databases that perform the same or similar functions are frequently procured and deployed by different business units and/or geographies with no coordination in terms of how the information stored is validated and shared at an enterprise level. Without standardization, essential corporate information and related knowledge assets become siloed, which, in turn, impairs company efforts to harvest and manage data for enterprise initiatives such as risk management decision-making, new product development, regulatory compliance reporting and more.

A key function of the CDO-DMO partnership is to rationalize and implement tools across the organization so that information can be readily harvested for enterprise use. Harvesting business metadata is an absolute must for enterprise knowledge management and deployed enterprise information tools must support the collection and sharing of that information. It is the responsibility of the CDO-DMO team to both establish enterprise standards for information management tools and foster their use across the company so that information can be rationalized and harvested to a common enterprise metadata repository. A key to this is to leverage industry leading IM tools, such as Informatica, (i.e., metadata, ETL, reporting, etc.) that support OMG standards, including the Common Warehouse Model (CWM) for metadata, data rationalization, data quality remediation and enablement of data governance and stewardship controls.

### **CDO-DMO Key Service #7: Operationalizing process, semantics and data modeling as a shared competency.**

The harvesting of knowledge, implementation of data governance and stewardship, and operationalization of data quality and other enterprise information management efforts are often dependent on information created and managed consistently across the company. Models are often the source of the knowledge and their common deployment at an enterprise level can help assure needed alignment. For example, a process model represents the business processes that are implemented in an IT system. Similarly, a business glossary and logical data model represent the information implemented within a data warehouse or data mart. In a large organization, models are created regularly, often without consideration for the fact that the same tools exist and are in use elsewhere in the company. In other instances, no models may exist, causing knowledge about the systems, processes and people to be lost.

**Key Business and IT information architecture resources should reside and collaborate within the DMO structure under the guidance of the CDO.**

Establishing and enforcing standards, processes, frameworks, tools and best practices for process modeling, semantic modeling, and logical and physical data modeling are key services that must be established by the CDO and delivered on a shared basis via the DMO, especially in large, distributed enterprises. Some companies have defined this arrangement as an **Integrated Model-Driven Framework**. With the evolution of the Unified Modeling Language (UML), model driven architectures evolved initially for application development. Recent innovation, however, has led to similar capabilities in the information management sector.

For example, Ontology Driven Information Architecture (ODIA) created by Capgemini now allows business users to define business-centric process and semantic models—from which IT-centric models for process execution and data models can be derived. These modeling disciplines established by the CDO are then embedded into a Software Development Lifecycle program (SDLC) that, in turn, requires all system development projects to create standard processes, semantics and data models that harvest knowledge for use at the enterprise level. This capability is strategically important for a financial services organization to rationalize processes, systems, people and information and again falls within the purview of the CDO-DMO regime.

#### **CDO-DMO Key Service #8: Establishing information strategy and architecture as a shared service.**

Information strategy and architecture is a core business information management competency that should be delivered across the organization as a shared service by the CDO-DMO operation. Industry standards such as TOGAF, Zachman, DODAF and FEA, among others, exist today to define best practices for an overall enterprise architecture. These architecture frameworks also include information architecture as a core sub-component. The CDO-DMO alliance should establish standard information architecture best practices in the context of the enterprise's overall architecture, and consistently apply such standards to operating units and functions across the company. Blueprints for business information warehousing should be developed and shared as outputs of this effort.

Through the DMO, an information standards and architecture function should be implemented to create a target data architecture, provide review and certification of that architecture across the organization, and enforce related best practices in connection with its deployment, maintenance and extension, as applicable. Key business and IT information architecture resources should reside and collaborate within the DMO structure under the guidance of the CDO. This approach also enables Business and IT to move towards shared infrastructures and a common set of tools for information management.

#### **CDO-DMO Key Service #9: Establishing information management as a shared IT service to drive operational effectiveness and efficiency.**

In many global financial services organizations, there is momentum to establish information management as a shared IT service led by the CDO in partnership with Chief Information Officer. Given that the CDO represents the interests of business sponsors such as the Chief Financial Officer, Chief Risk Officer, Chief Marketing

Officer, Chief Investment Officer and various Line-of-Business Executives, large scale organizations are now also beginning to align information management IT functions with the Chief Data Officer. This alignment enables a direct partnership with the CIO.

In this partnership, the CDO charters and establishes a Business Information Management Competency Center (BIM-CC) and/or Business Intelligence Competency Center (BI-CC) that is accessible globally by the company's diverse business user community. The CDO also determines and staffs the specific information management services to be offered by these centers. The CIO, on the other hand, is responsible for supporting these structures by fulfilling CDO-DMO needs in terms of standardized tool and technical infrastructure deployment, software development, testing and management services. In this model, it is clear that the CDO and DMO serve as the bridge that unites Business and IT.

#### **CDO-DMO Key Service #10: Deployment of sandbox projects team for information management.**

One of the key complaints that business users have today in the enterprise information management is IT's lack of agility and responsiveness to analytical users, who often require data services such as data-marts, feeds, and cubes to be created rapidly on an ad hoc basis in response to changing business needs. For many reasons, including the imposition of IT controls and software development life cycles, IT is typically not seen as able to respond to these business requests expeditiously. Moreover, due to constant cost containment pressures, IT typically does not maintain sandbox environments to service such ad hoc business requests.

In companies that support CDO-DMO operations, a key service offered is rapid and expedient support of analytical business users., who are often grouped together in units known as "small projects teams," "IM SWAT teams," and the like. A by-product of this arrangement is that IT resources no longer need to reside within separate business functions as private, disconnected armies whose actions may further impair efforts to establish and enforce information management standards such as data quality at an enterprise level.

#### **CDO-DMO Key Service #11: Institutionalization of innovation in information management.**

Technology is a differentiator in financial services. Technology is continuously evolving and innovation is an ongoing process. A key high value function that the CDO must provide to the organization is the regular review of emerging technologies to assess their relevance and viability in solving on-going information management challenges. Big Data, cloud computing, data visualization, data masking, enterprise business metadata management and Data SOA—among other initiatives—are all part of the emerging information management technology landscape. Evaluating new applications that address these and other critical business challenges is another core responsibility that the CDO-DMO regime can deliver to the business as a vital information management service.

## 5. Organizational Alignment and Funding for the Chief Data Officer

### 5.1. Where Should the CDO Report?

For all intents and purposes, the ultimate user and benefactor of information received and maintained by a financial services organization is the Business, not IT. Decisions regarding products, customers, investments, risks and other matters of corporate governance and importance are made by the Business, and their effectiveness is highly dependent upon the accuracy of the information that underlies their decisions, actions and other outputs.

Based on our many years of involvement with multiple top tier global financial services organizations as a provider of strategic business information services, we firmly believe that the CDO role must be positioned to serve as a bridge between the Business and IT. Multiple efforts in the past to position the CDO as an IT-focused role have failed in many large financial services settings. We have also seen the position fail as a narrowly defined business role when centered on a limited business function or asset class.

In reality, the CDO must represent the interests of, the Business and leverage supporting technologies for its benefit. In other words, the CDO must be business-driven and technology-enabled to solve business challenges. Alignment with one camp over another only serves to undermine the integrity of the CDO role.

Recognizing that the Chief Data Officer is expected to serve as a neutral conduit between business and IT to optimize the organization's management of information and related knowledge assets, we believe that the CDO role should sit squarely as a direct report to the Chief Operating Officer (COO) or Chief Executive Officer in a large financial services company. With this strategic positioning, the CDO serves the organization with needed independence from both business and IT and, as such, can more effectively partner with key business sponsors such as the CFO, CRO and CMO, as well as with key technology leaders such as the CIO and CTO—all with equal and unfettered footing.

A reporting relationship outside the Business and IT organizations also allows the CDO to both enable and challenge Business and IT as needed to ensure the successful transformation of the organization into a more information management-centric entity. As honest brokers for the corporation, the CDO and his DMO team of best of class practitioners from Business and IT use their independence and authority to first define critical information management processes and standards, and then implement them across the firm as enterprise solutions.

**The CDO role must be positioned to serve as a bridge between Business and IT and should sit squarely as a direct report of the Chief Operating Officer or Chief Executive Officer.**

**Currently, we are seeing a strong trend among major financial services companies to commit significant funds to mission critical information management projects for the Chief Risk Officer, Chief Financial Officer and Chief Marketing Officer.**

## **5.2. Are the CDO and Chief Data Architect Roles the Same?**

The Chief Data Officer represents the interests of key information owners and consumers within the C-suite and leverages information technology, as well as the support of the office of the Chief Information Officer, to address business challenges through improved information management.

Similarly, a key objective of the Chief Data Architect role in most organizations is also to create alignment between Business and IT to better serve the needs of the company's data consumers. For this reason, we recommend that the CDO should serve as the firm's Chief Data Architect as well, with a team of functional and technical architects staffed into the DMO to define and support an overall information management program vision for the enterprise.

## **5.3. Who Funds the CDO and DMO Functions?**

The CDO and DMO functions are typically funded at a global level by Executive Management with Board approval. The reality today is that in most large financial institutions, information management has become a mission critical function for the Board of Directors, who is increasingly sensitive to challenges by regulators and other external forces which strongly influence shareholder value and ultimately the success of the firm. Operational performance of a company, customer satisfaction, profitability, financial reporting, enterprise risk, a firm's reputation, and other initiatives of similar import to the company are now routinely discussed and decided as Board-level topics, and are directly impacted by the quality and completeness of their underlying information.

Profits and losses in financial services are often impacted by the ready availability and timeliness of information. As such, information management today within the financial services sector is expected to be a core competency of every large company, and the establishment of this competency is seen as mission critical function to be supported financially by the Board.

Once Executive Management and Board level support is confirmed, the CDO—in concert with the COO and CIO—then allocates the agreed funding to various enterprise level and business unit programs to assure that prioritized information management needs are properly serviced by the DMO. Currently, we are seeing a strong trend among major financial services companies to commit significant funds to mission critical information management projects for the Chief Risk, Compliance, Financial and Marketing Officers, all of whom are becoming more and more the primary beneficiaries of the efforts of the CDO and his DMO team.

#### **5.4.15 Key Qualifications for a CDO in Financial Services**

1. Strong leadership and C-Suite/Board communication skills;
2. Financial services domain knowledge, including expertise at the intersection of risk, finance and customer domains;
3. Experience in leading major information management programs in key business areas for banks, insurance companies and/or investment banks;
4. Expertise in business and IT architecture, including familiarity with leading architectural standards such as TOGAF, FEA and/or Zachman;
5. Familiarity with Enterprise Metadata Management (business and IT) and OMG standards;
6. Information management program life cycle experience;
7. Experience in operationalizing Data Governance, Data Stewardship and Data Quality;
8. Expertise in creating and deploying best practices and methodologies;
9. Familiarity with industry data models such as IBM BDW and IIW, Teradata FSLDM, and SAS IIA;
10. Expertise in creating and leading best of class Business and IT teams for information management;
11. End-to-end data warehousing program execution knowledge and leadership;
12. Familiarity with software development lifecycles;
13. Experience in setting up and supporting information analytics teams;
14. Experience in defining business requirements for information management projects; and
15. Familiarity with process modeling, semantic modeling and data modeling.

## 6. Why the CDO Role Makes Sense in Financial Services

Information is the lifeblood or DNA of every financial services firm and, as such, must be treated as a strategic asset. Data completeness and accuracy is critical for effective decision-making, reporting, underwriting, pricing and risk management for virtually all FS business functions.

In support of these and other mission critical business tasks, the Chief Data Officer role offers the following benefits to the financial services enterprise:

### **Benefit 1: Information stewardship**

Given the increasingly strategic importance of information to business users across the organization, the CDO as a dedicated enterprise data steward serves as the bridge that aligns business and IT in the information management space. Concurrently, the CDO through his DMO team also defines, implements and manages the firm's end-to-end information management program, including best practices, process controls, resource allocations and priorities.

### **Benefit 2: Business and IT alignment around information as a strategic asset**

Information in a large financial services enterprise resides today in multiple silos, maintained within the systems and sub-systems of company operations that cross business units and geographies. The CDO is best positioned to align the interests of the organization across all business lines and geographic borders, and will serve as a key partner together with the technology CIO for core business leaders such as the Chief Financial Officer, Chief Risk Officer, Chief Compliance Officer and Chief Marketing Officer.

### **Benefit 3: Data rationalization**

The Chief Data Officer unites individual business interests and technology silos to enable the rationalization of otherwise disparate stores of corporate information. This aggregation is essential to improve enterprise data quality, reduce operational costs, enhance resource utilization, achieve required lineage and traceability, and drive overall greater efficiency in the management and consumption of information assets across the organization. For example, the rationalization of reference data feeds across multiple business units recently saved one global financial services organization millions of dollars based on its elimination of redundant people, process and system costs.

### **Benefit 4: Accurate and timely decision-making**

The CDO is the catalyst to implement key enterprise competencies such as data quality in a timely and certain manner. Accurate and timely decision-making, in turn, allows firms to reduce risks and losses, lower regulatory capital requirements, compete more effectively in their target markets, capitalize on emerging business opportunities and enhance investor confidence.

**The CDO will serve as a key partner together with the technology CIO for core business leaders such as the Chief Financial Officer, Chief Risk Officer, Chief Compliance Officer and Chief Marketing Officer.**

### **Benefit 5: Regulatory compliance and risk management**

Regulatory compliance and risk management are key focuses for most financial services organizations today. Regulatory compliance and risk management require rationalization, integration and dissemination of disparate information. The CDO is the organization's foremost enabler of data requirements for these mission critical corporate functions. The CDO aligns business and IT interests, rationalizes information silos, implements business semantics, defines and executes data governance and stewardship regimes, enforces data quality standards, and creates shared information services that are catalysts for these and other core business functions.

### **Benefit 6: Cost versus profit centers**

Many financial services organizations today manage information in a reactionary mode, which often results in the positioning of the IM function as a cost center rather than as a profit center. For example, businesses frequently react to new regulatory and compliance initiatives by creating additional information stores to support the needed response. A CDO-led strategic information management program that examines and understands the business from multiple perspectives can transform itself into a profit center by enabling the enterprise to proactively address emerging market opportunities, improve customer experience to increase loyalty, create and deliver new products across channels, and enhance enterprise risk management and profitability.

## 7. Conclusion

**Effective information management is no longer optional for financial services firms. Information is the lifeblood of the Business.**

Banks, capital markets firms and insurance companies all realize today that enterprise information is one of their most strategic corporate assets. Most organizations also agree that they lack the focus, skills, competency and leadership to manage this strategic asset as effectively and efficiently as they would like. Compliance and regulatory initiatives continue to impose heavy burdens on financial firms, especially those with poor information management infrastructures. Failure to meet compliance and regulatory requirements may result in fines, increased capital reserves, reduced borrowing power, lower shareholder value and other equally dramatic consequences for the business. Complete and accurate information is mandatory for effective financial reporting, risk management, forecasting of future business activity, product pricing and similar core business functions—all of which directly impact the stock price of the firm. Information discrepancies and uncertainties also put at risk executive management and board members, who often are asked to certify the accuracy of filings and other representations being made on behalf of the company.

Effective information management is no longer optional for financial services firms. Information is the lifeblood of the Business. Today's financial services enterprise must proactively manage information more than ever. To do so, it may need to reorganize itself and reprioritize its objectives. A dedicated enterprise steward, owner and stakeholder is needed to drive needed information management changes across the company. The Board of Directors and its C-Suite reports all require a key partner to drive enterprise information management as a strategic initiative.

The Chief Data Officer is the steward, owner and stakeholder of this enterprise mandate. The CDO is the catalyst for this transformation to an information centric enterprise that is business-driven and IT-enabled.

# Appendix A: Lessons Learned

Based on our many years of experience providing strategic information management consulting services to top tier financial services organizations around the globe, we have learned a great deal about why Chief Data Officers succeed or fail in their respective institutions. The following is a summary of this market intelligence:

## **CDO positioned as a figurehead leader**

CDOs that have been positioned as powerless figureheads with little to no funding or support staff have been uniformly ineffective in their efforts to make demonstrable changes in the way their firms manage and consume information. A successful CDO is an empowered and properly funded IM practitioner, whose business support team consists of other domain savvy specialists, each of whom can interact seamlessly with users across multiple domains—from finance to risk management to compliance to marketing and beyond. The CDO also requires a select team of IT experts, who have sufficient knowledge of enterprise and information architecture to effectuate needed technology changes with the IT organization based on specific business priorities. The CDO, who has neither a budget, nor a supporting cast, will be ineffective in executing the information management mandate established for the role. To be successful, the CDO needs a team of resources that can engage both Business and IT, and have the authority and mandate to effectuate change.

## **CDO focused on a single business initiative**

Many capital markets firms initially created the Chief Data Officer role solely to address institutional needs in the area of investment reference data. However, with focus and enablement capabilities such as people, tools, and decision-making authority so restricted, CDOs in these roles have been generally ineffective in their efforts to link business and IT and implement needed information management program changes.

## **Information Technology-centric CDO**

In some organizations, the CDO function has been established as an IT function that reports to the Chief Information Officer and frequently serves as the steward of a large data warehousing program. Unfortunately, CDOs who have a strong technology focus and skills, but lack business domain knowledge and expertise, don't speak the same language as their business-centric CFO, CRO and CMO colleagues and, as a result, receive limited buy-in from that group. Trying to implement capabilities such as data governance and stewardship or data quality through a purely technical CDO is short-sighted and cannot be expected to succeed with business users. A more balanced approach is needed.

## **Business Intelligence Competency Center leader as CDO**

The Business Intelligence Competency Center (BI-CC) is a new and emerging structure in the financial services market. The objective of the BI-CC is to create a shared service for business intelligence. Some organizations have made the head of the BI-CC—often an IT leader reporting to the CIO—the de-facto CDO. Again, companies that have taken this approach have been challenged by the CDO's inability to speak the language of the Business and link it together with IT.

### **Lack of tools to support the CDO, including an enterprise metadata repository**

One of the most important tools needed to effect required company-wide information management changes by financial service CDOs is the enterprise metadata, or knowledge, repository. This application captures, manages and presents critical business data from semantic definitions to consumer roles and responsibilities with respect to the information stored across the organization. Without such a tool, the CDO function is greatly compromised in its ability to rationalize and manage information at an enterprise level. Most large financial institutions have yet to deploy a standards-based business metadata repository and are, therefore, significantly behind in their efforts to rationalize their data at a company level.

### **Bad advice and vendor “Kool-Aid” solutions**

Our experience with large financial services firms has clearly shown that most organizations around the globe still lack a clear understanding of the processes and technology tools needed to define and implement effective information management initiatives across the enterprise. For many, the issue lies in the fact that they have yet to receive adequate advice regarding key mandates such as data governance and stewardship, data quality, metadata management and enterprise data models, among other areas requiring critical attention and resource support.

In an attempt to sell their technologies, IM software vendors have positioned solutions such as Enterprise Data Models as the panacea to the enterprise information management challenge. Many of these models and frameworks have been purchased by FS organizations, only to sit on a shelf and collect dust. This has led, in turn, to the failure of many CDOs. In general, skilled resources led by the CDO are required to efficiently leverage and deploy frameworks, best practices, tools and methodologies.

### **Proliferation of tools, lack of information architecture and IT governance**

One of the biggest challenges to eliminating information management silos is the proliferation of different tools across the organization—databases, ETL tools, reporting software, and more. Tool disparity automatically leads to silos and impairs the CDO’s ability to enact transformation strategies. As business and IT users continue to purchase and deploy diverse preferred tools within their own operations, they continue to exacerbate the problem, and the CDO is powerless to enact the required transformation across the enterprise.

# Appendix B: Tools of the Trade for the CDO and DMO

Exhibit 1: Key methodologies, best practices and tools used today by CDOs and DMOs <sup>2</sup>	
Methodologies & Best Practices	Tools/Technologies
<ul style="list-style-type: none"> <li>■ Data Governance Framework</li> <li>■ Data Stewardship Framework &amp; Policies</li> <li>■ Data Quality Framework – Standard Scoring</li> <li>■ Data Quality Framework – Domain Scoring</li> <li>■ Semantic Modeling Methodologies (Glossary, Taxonomy, Ontology)</li> <li>■ Business Process Modeling Methodologies</li> <li>■ Data Modeling Methodologies (Logical and Physical Modeling)</li> <li>■ Root Cause Analysis &amp; Remediation</li> <li>■ Issue Management &amp; Resolution</li> </ul>	<ul style="list-style-type: none"> <li>■ Enterprise Metadata Repository</li> <li>■ Data Quality Platform</li> <li>■ Data Quality Dashboards</li> <li>■ Data Stewardship Implementation Workflow</li> <li>■ Issue Management &amp; Resolution Portal</li> <li>■ Content Management</li> <li>■ Process Modeling Tool</li> <li>■ Semantic Modeling Tool</li> <li>■ Data Modeling Tool</li> <li>■ ETL Tool</li> <li>■ Reporting Tool</li> <li>■ Business Rules Engine</li> <li>■ Database Platform</li> <li>■ Data SOA &amp; Messaging</li> </ul>

<sup>2</sup> Source: Capgemini Analysis, 2012

# Appendix C: Basel II Data Management Requirements Demand Demonstrable Transparency, Lineage and Quality

## BIPRU 4.2.5<sup>3</sup>

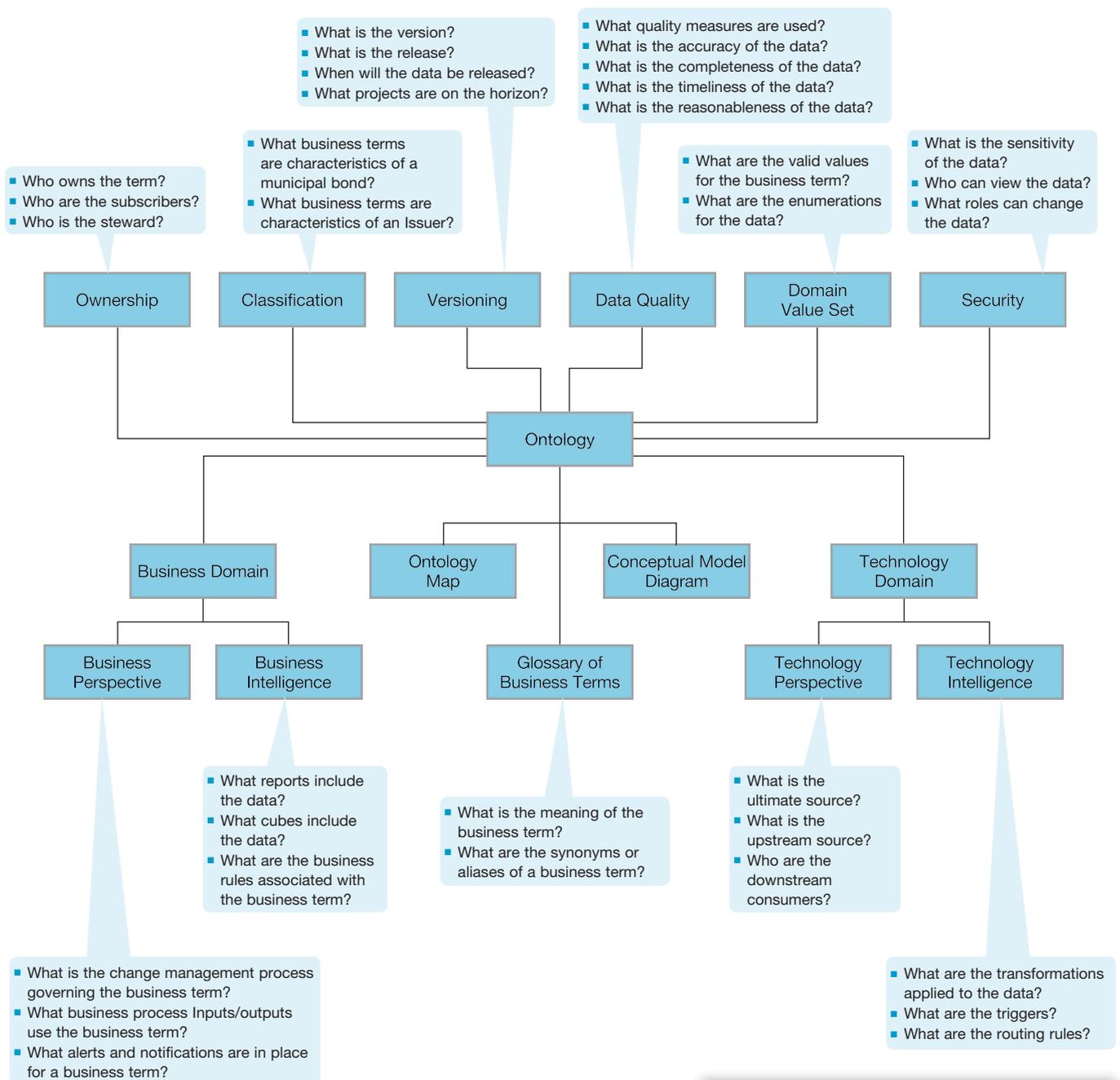
### Assessment and estimation

- (1) This paragraph provides guidance on BIPRU 4.2.2R and in particular BIPRU
- (2) The information that a *firm* produces or uses for the purpose of the *IRB approach* should be reliable and take proper account of the different users of the information produced (customers, shareholders, regulators and other market participants).
- (3) A *firm* should establish quantified and documented targets and standards, against which it should test the accuracy of data used in its *rating systems*.
- (4) Tests under (3) might include:
  - (a) report and accounts reconciliation, including completeness in relation to (b);
  - (b) whether every *exposure* has a *PD*, *LGD* and, if applicable, *conversion factor* for reporting purposes;
  - (c) whether the *firm's* risk control environment has key risk indicators for the purpose of monitoring and ensuring data accuracy;
  - (d) whether the *firm* has an adequate business and information technology infrastructure with fully documented processes;
  - (e) whether the *firm* has clear and documented standards on ownership of data (including inputs and manipulation) and timeliness of current data (daily, monthly, real time); and
  - (f) whether the *firm* has a comprehensive quantitative audit programme.
- (5) The reconciliation referred to in 4(a) should be reasonably fit for purpose. In particular it should meet the standards in (6) and (7).
- (6) For data inputs, testing for accuracy of data, including the reconciliation referred to in 4(a), should be sufficiently detailed so that, together with other available evidence, it gives reasonable assurance that data input into the *rating system* is accurate, complete and appropriate. Input data fails the required standard if it gives rise to a serious risk of material misstatement in the capital requirement either immediately or subsequently.
- (7) For data outputs, the *firm*, as part of the reconciliation referred to in 4(a), should be able to identify and explain material differences between the outputs produced under accounting standards and those produced under the requirements of the *IRB approach*, including in relation to areas that address similar concepts in different ways (for example *expected loss* on the one hand and accounting provisions on the other).
- (8) A *firm* should have clear and documented standards and policies about the use of data in practice (including information technology standards), which should in particular cover the *firm's* approach to the following:
  - (a) data access and security;
  - (b) data integrity, including the accuracy, completeness, appropriateness and testing of data; and
  - (c) data availability.

<sup>3</sup> Source: Financial Services Authority, [www.fsa.gov.uk](http://www.fsa.gov.uk)

# Appendix D: Repository & Business Catalogue Framework for a CDO

Exhibit 2: Repository & Business Framework



## About the Authors



**Jojoy Mathew** is a Vice President and Global Practice Leader for Capgemini's Financial Services Business Information Management Practice focused on enterprise information management and strategy consulting. Jojoy leads a global team of financial services subject matter experts and is responsible for orchestrating business and technical solutions for large, complex financial services clients across the world.

With over 20 years experience in capital markets, banking and insurance, and possessing a unique combination of technical, quantitative and domain-based skills, Jojoy has become one of the market's most highly regarded pioneers of innovative approaches for information management. Prior to joining Capgemini, Jojoy was a reputable investment banker and recognized expert in structured finance.

Jojoy Mathew holds Bachelor's and Master's degrees in Finance from the University of Colorado, and is a published author on structured finance, risk management and technology solution strategies.



**Marc Zimmerman** is Senior Vice President and Global Head for Financial Services Business Information Management at Capgemini. In that role, he is responsible for the global development, management and growth of the company's worldwide BIM consulting services practice, with a principle focus on enterprise risk management, regulatory compliance, customer data management and business information competency. Under the management of Marc and his executive team, Capgemini's FS BIM organization has enjoyed geometric growth over the past four years and today is a globally recognized leader in the operationalization of strategic

information management solutions for FS firms.

Marc has over 25 years of software and consulting experience in the global financial services sector, including a 6-year relationship with Unisys, where he served as Managing Partner, Global Financial Services and guided the firm's banking, insurance and capital markets consulting business. Prior to that assignment, he held senior executive management and business development positions with three industry leading investment software and service concerns.

Marc has a Bachelor's degree from Rutgers University, a law degree from Case Western Reserve University and he is a retired member of the New Jersey State Bar.

For more information, visit [www.capgemini.com/financialservices](http://www.capgemini.com/financialservices) or e-mail [financialservices@capgemini.com](mailto:financialservices@capgemini.com).



### About Capgemini and the Collaborative Business Experience

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies.

Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working, the Collaborative Business Experience™.

The Group relies on its global delivery model called Rightshore®, which aims to get the right balance of the best talent from multiple locations, working as one team to create and deliver the optimum solution for clients.

Present in 40 countries, Capgemini reported 2011 global revenues of EUR 9.7 billion and employs around 120,000 people worldwide.

Capgemini's Global Financial Services Business Unit brings deep industry experience, innovative service offerings and next generation global delivery to serve the financial services industry.

With a network of 21,000 professionals serving over 900 clients worldwide, Capgemini collaborates with leading banks, insurers and capital market companies to deliver business and IT solutions and thought leadership which create tangible value.

For more information please visit [www.capgemini.com/financialservices](http://www.capgemini.com/financialservices)

