

Stewarding Data: Why Financial Services Firms Need a Chief Data Officer



Why Chief Data Officers are a Necessity, Not a Luxury

The C-suite could soon start to feel a little crowded, with Chief Digital Officers, Chief Innovation Officers, Chief Risk Officers and Chief Data Officers joining the more established functional leaders. To avoid C-suite proliferation, companies need to decide whether to elevate a new functional role to “chief” based on the strategic importance of the issue for the organization and its sector. For example, in many organizations, marketing will be so essential to performance that few would deny the need for a CMO. In financial services, data has become so mission-critical that the role of Chief Data Officer is simply essential.

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- Senior executive at a leading Australian bank

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A Silo-ed Approach to Data Governance Raises Non-Compliance Risks

Since the financial crisis in 2008, the monetary impact of regulatory non-compliance has risen dramatically. Between 2008 and 2013, banks in the US paid more than \$100 billion in penalties and settlements¹. Tightening regulatory frameworks provide a telling illustration of why firms need to get to grips with data. New anti-terrorism and anti-money laundering legislation requires that financial institutions track customer data more closely and report suspicious activity, or risk attracting enormous legal fines. Regulations such as “BCBS 239” developed by the Basel Committee of Banking Supervision require that banks set up adequate governance, processes and systems to ensure the accuracy of data and the relevance of the reports on which they base their risk assessment, or risk having their licenses revoked. Other regulations - such as the US “Foreign Account Tax Compliance Act (FATCA)”², and the “Automatic Exchange of Information (AEOI)” and “Common Reporting Standard

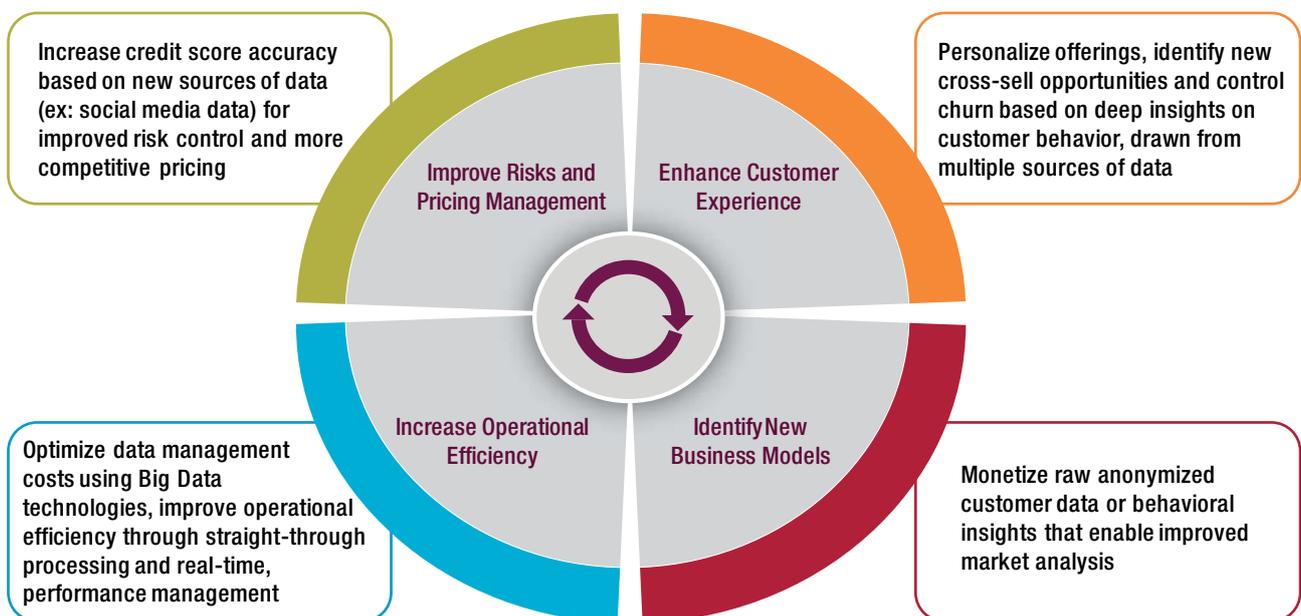
(CRS)” developed by the OECD - demand that financial institutions provide accurate, complete and consistent information to tax authorities to help curb tax evasion.

Despite this pressing need for strong data controls, the financial services industry still faces data management challenges, with institutions struggling with fragmentation, silos and a lack of clear governance processes. Critical enterprise information is often distributed across many operational systems and databases. In addition, our research revealed that 54% of financial services firms lack robust processes to manage data quality³. A senior executive at a leading Australian bank admitted that “The responsibility around data quality is fragmented and unclear within the organization.”⁴

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Figure 1: Big Data Opportunities in the Financial Services Sector



Source: Capgemini Consulting Big Data Framework

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The Lack of Central Oversight Impacts Effective Use of Big Data

As well as the importance of data management for regulatory compliance, Big Data is a significant opportunity for the financial services sector, from operational efficiency to the customer experience (see Figure 1). According to our research, 79% of financial services executives believe that the ability to extract value from Big Data is an important factor in their future success (see Figure 2)⁵.

However, once again, a lack of robust control and coordination affects financial services firms’ abilities to deliver their Big Data ambitions. 50% of financial services executives cite ineffective coordination of Big Data and analytics teams as the biggest challenge in Big Data implementation⁶. Further, 48% of financial services firms operate with scattered pockets of analytics resources or with decentralized teams that function without any central oversight⁷.

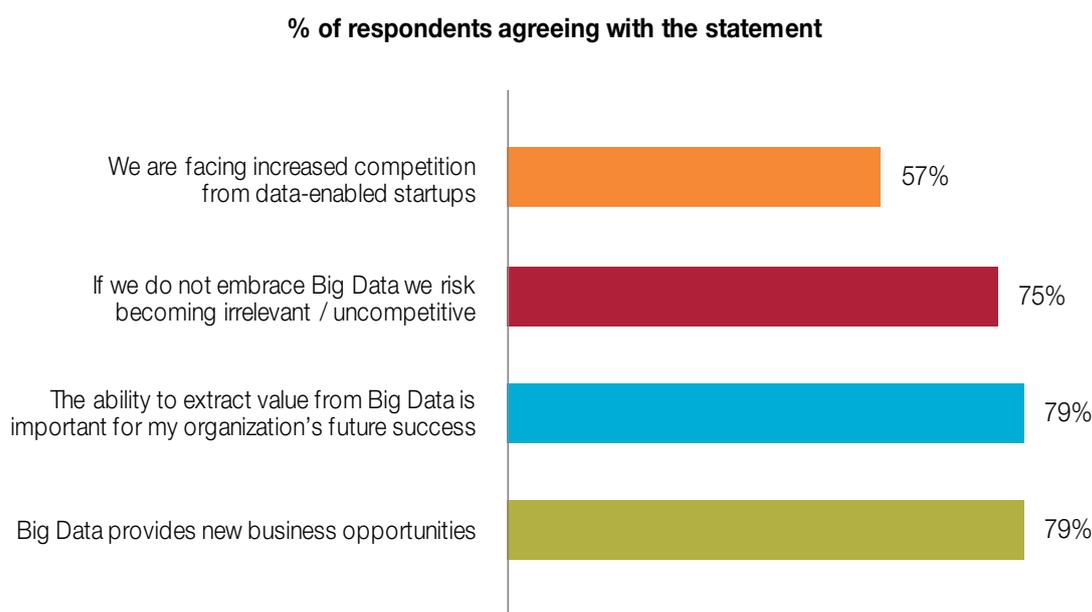
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A Leadership Vacuum: Why Financial Services Firms Need Chief Data Officers

There is no doubt that financial services firms need robust data management to meet growing regulatory pressure. They also cannot let the Big Data prize pass them by. Our research shows that appointing a leader entrusted with enterprise-wide data responsibilities is critical. Across industries, organizations that have appointed a Chief Data Officer (CDO) report a 43% success rate⁸ for their Big Data initiatives, compared to 31% for organizations that have not appointed a CDO⁹.

So, where do financial services firms stand in terms of appointing CDOs? What is the role of the CDO in these organizations? To find the answers to these questions, we interviewed senior executives from leading global financial services firms (see research methodology at the end of this paper).

Figure 2: Impact of Big Data on the Financial Services Sector



N = 196

Source: Capgemini, “Big & Fast Data: The Rise of Insight-Driven Business”, March 2015

The CDO's Role in Financial Services Firms Remains Limited in Scope

Despite Being among the Earliest to Appoint CDOs, the Financial Services Sector has not Fully Expanded the Role of the CDO

The financial services industry can justifiably lay claim to being a pioneer when it comes to appointing CDOs. The industry was among the first to designate the role. US-based bank Capital One appointed Cathy Doss as CDO as early as 2002. Cathy Doss is widely considered to be the world's first CDO¹⁰. Today, close to 16% of financial services firms have appointed CDOs, outstripping many other industries (see Figure 3)¹¹. However, our research revealed that most CDOs focus on specific aspects of data, such as compliance and risk management, but only a handful have mandates that extend to managing their organization's overall data strategy (see Figure 4)¹².

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In addition to the Beginners, who are at the very early stages of their data journey, we see a range of CDO types.

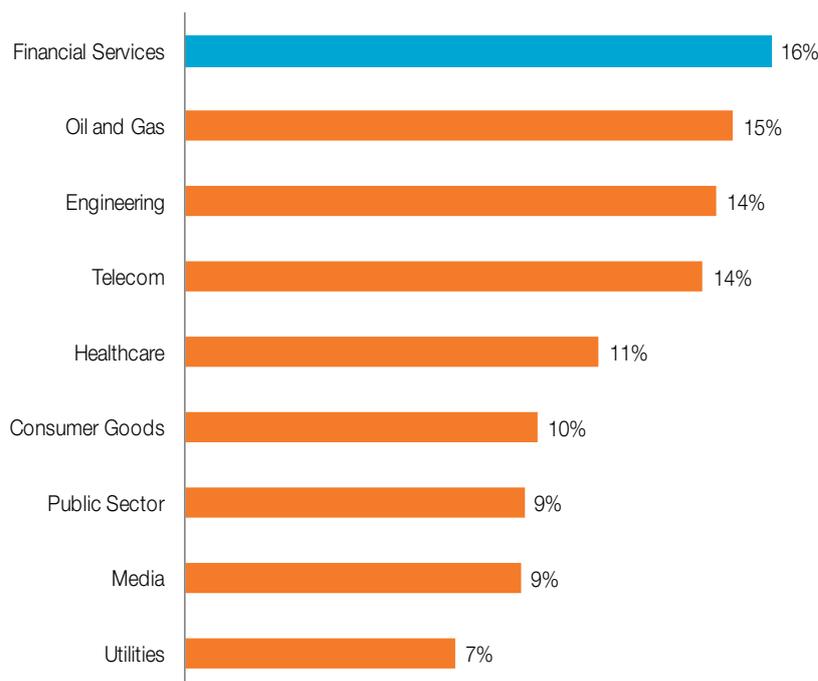
Process Oriented CDOs. Most CDOs focus on data management from a compliance perspective. They concentrate on defining data management guidelines and controlling their implementation, in order to comprehensively address compliance demands. They oversee a range of activities including the construction of data dictionaries, master data management, identification of critical data domains, and integration of data quality tools with

legacy systems. These CDOs also strive to raise awareness of data management issues across the organization, including confidentiality and legal aspects. They also coordinate data management efforts across IT, business and support functions, laying out the relevant processes and IT architecture necessary for an organization-wide data management program. As the CDO of a UK-based bank put it: “My overall objective is to build a stronger control framework around data.”

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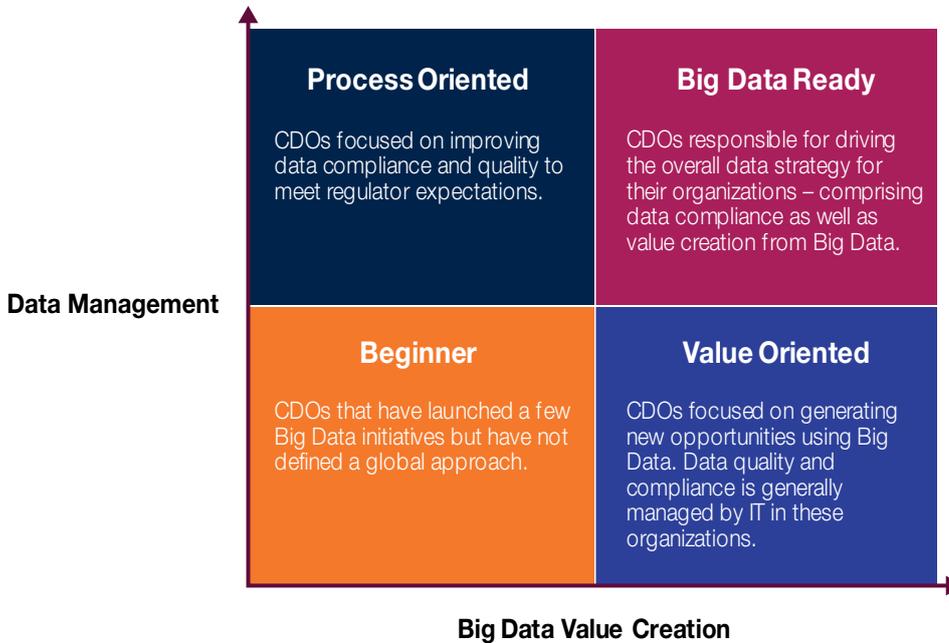
Figure 3: CDO Appointments by Industry Sector



N = 1000

Source: Capgemini, “Big & Fast Data: The Rise of Insight-Driven Business”, March 2015

Figure 4: Maturity of the CDO's Role in the Financial Services Sector



Source: Focus Interviews Conducted by Capgemini Consulting in Partnership with Efma

Value Oriented CDOs. Some CDOs focus on innovation and value creation through data, but have limited data compliance responsibilities. They focus on generating new opportunities, looking at Big Data use-cases such as customer behavior analysis or digital business intelligence. However, data quality and compliance does not fall within the scope of their responsibilities and is generally managed by the IT function.

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Big Data Ready CDOs. Only a minority of CDOs are responsible for their organization's overall data strategy. These CDOs have a mandate that includes both data compliance as well as value creation from Big Data. They identify business-critical data domains, develop the Big Data investment strategy

and roadmap, and prioritize initiatives. When US-based bank Wells Fargo nominated A. Charles Thomas as its CDO last year, it assigned various aspects of a Big Data Ready CDO's role to him. Announcing Thomas's appointment, the bank said: "In this new role, Thomas will oversee the company's data strategy, provide enterprise data governance, and determine ways to leverage data for improved risk management and customer experiences."¹³⁹

When we look more closely at these different types, we also see how their placement in the organization can constrain their effectiveness. In particular, their ability to take a genuine, cross-organization view (see Figure 5).

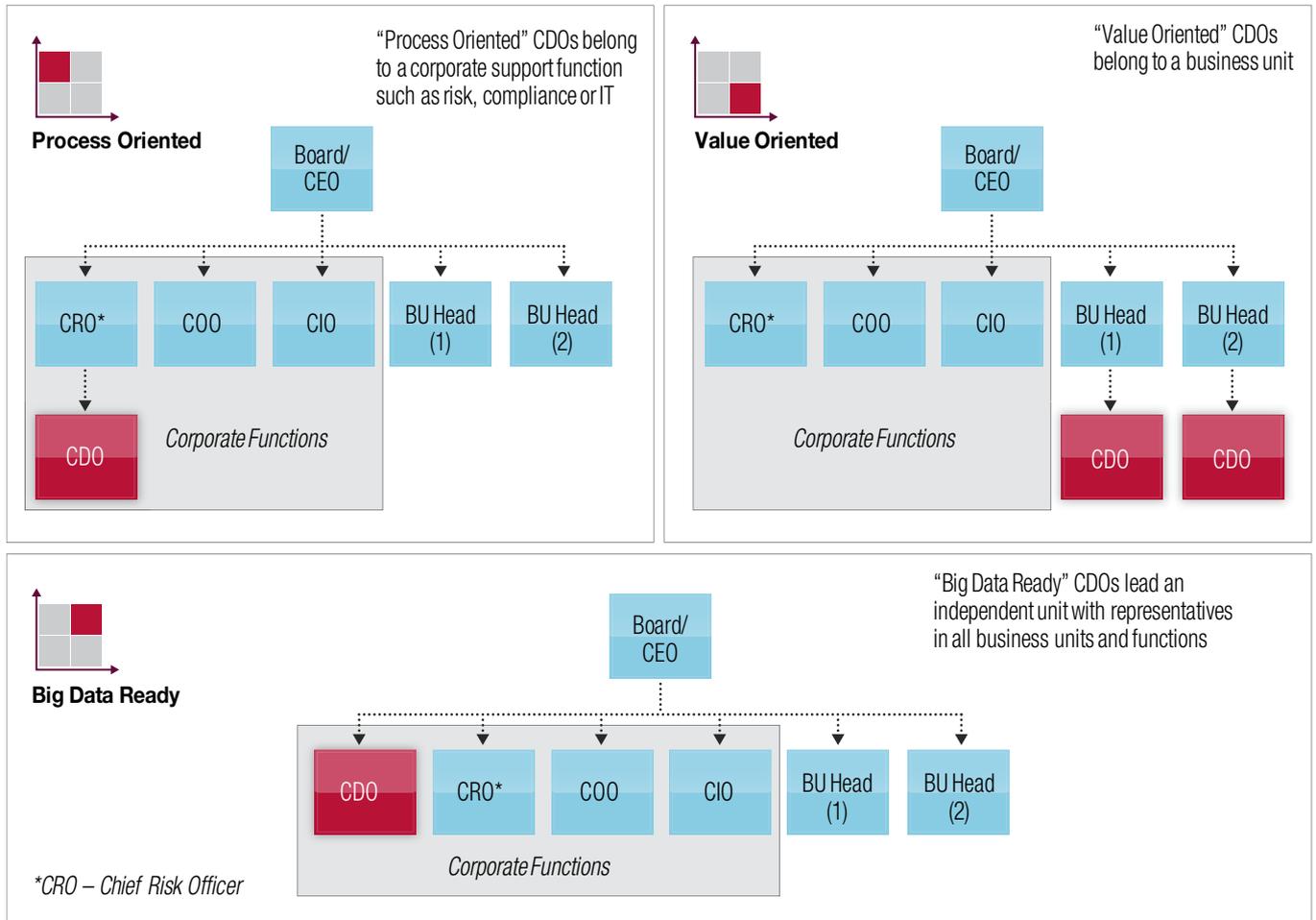
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The Office of the Process Oriented CDO is Usually Part of a Central Support Function

Process Oriented CDOs are usually part of a corporate support function such as the central risk, IT or compliance department. They rely on a central team with representatives in different business units and support functions. Given this focus on compliance, this configuration limits the CDO's ability to address other business needs and priorities.

Figure 5: Organizational Models for Data Management



Source: Focus Interviews Conducted by Capgemini Consulting in Partnership with Efma

“*Value Oriented CDOs are appointed by a business unit, which limits their effectiveness beyond their own business unit.*”

Value Oriented CDOs Usually Reside in Business Units with a Business-Specific Mandate

Value Oriented CDOs tend to be appointed by a business unit. The CDO's office has relatively strong links to the IT function. Multiple business units may have their own CDOs to look after their individual priorities. Such a configuration limits the CDO's effectiveness beyond their business unit.

Big Data Ready CDOs Lead through an Independent Structure

Our research shows these CDOs operating their function as a shared services center for the entire firm, with representatives in all business units and functions. Within such a set up, the CDO can collaborate effectively with IT, business and functional leaders to influence data governance, roadmap, and policies and drive implementation.

The Road Ahead: How Can Financial Services CDOs Lead their Organizations towards Big Data Readiness?

Establish Data as a Corporate Asset with an Enterprise-wide Data Governance Structure

In order to build data-driven organizations, CDOs will need to begin by ensuring that data is recognized as a central asset throughout the organization. This requires a compelling vision, an expanded scope of data governance, and a system of accountability for data.

Align the organization around a common vision for Big Data. CDOs should focus on creating a compelling vision of the role that Big Data can play in

helping the organization achieve its business objectives. They should also ensure that this vision is communicated to leaders across lines-of-business, in order to establish a common understanding around the need for data-driven decision-making.

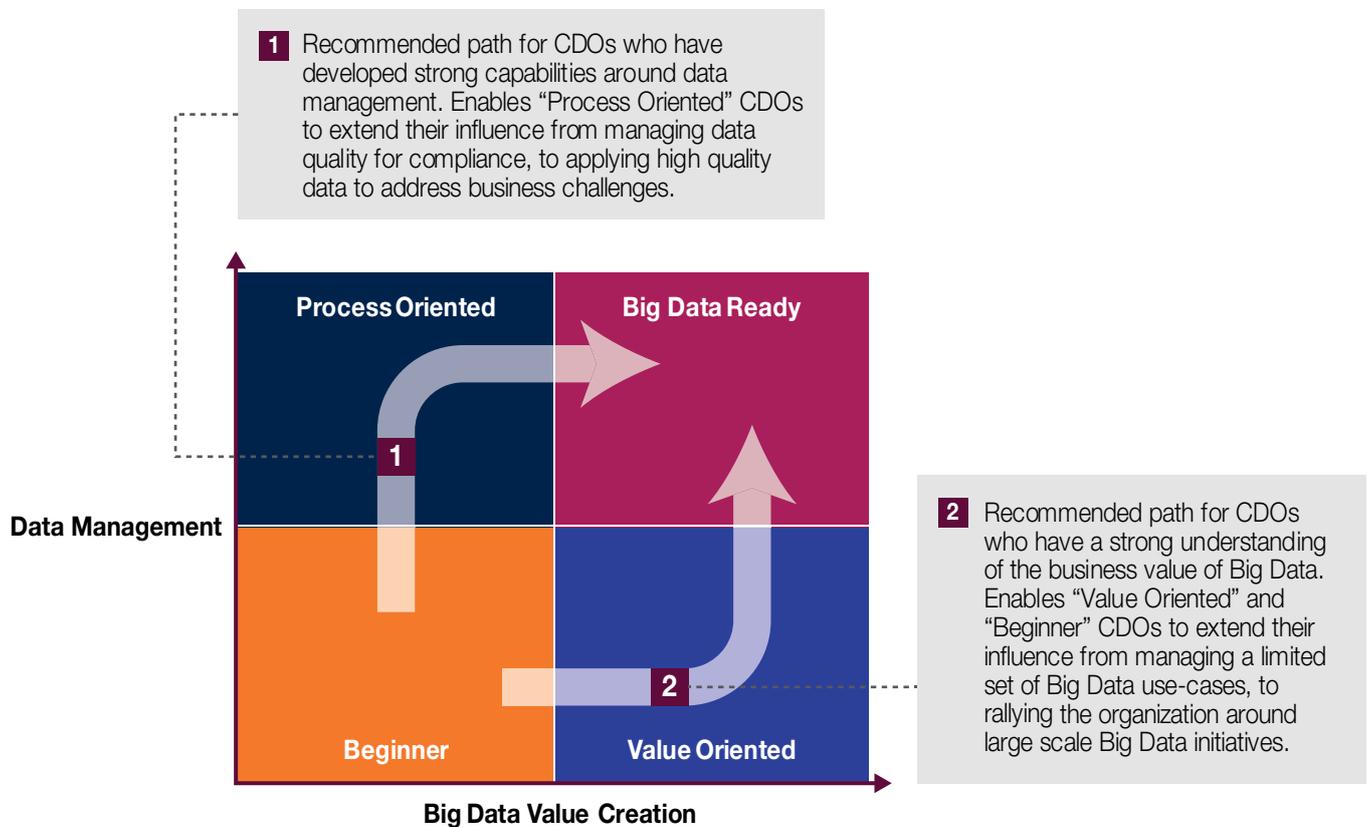
Expand the scope of data governance. Data governance in financial services firms has traditionally focused on internal, structured data. However, in a Big Data world, CDOs will need to expand the scope of data governance to manage data quality, privacy and security across varied data formats – structured and unstructured – and from internal as well as external sources.

Establish accountability for data.

To ensure that an enterprise-wide data governance program is effectively implemented, CDOs will need to identify individuals with explicit responsibility for enforcement of data policies and procedures. At US-based brokerage firm TD Ameritrade, CDO Derek Strauss worked closely with the heads of the firm's various business units to identify "data officers" and "data stewards" who were responsible for data quality and control for their business units¹⁴.

In addition, financial services CDOs will need to take proactive measures to expand their existing roles. These measures vary based on the current maturity of the CDO's role (see Figure 6).

Figure 6: The Journey to Big Data Readiness



Source: Focus Interviews Conducted by Capgemini Consulting in Partnership with Efma

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Beginner CDOs Should Focus on Demonstrating the Value of Big Data

Given that most financial services organizations have existing functions that manage compliance requirements, we recommend that Beginner CDOs focus their efforts on Big Data value creation. However, obtaining resources for large scale Big Data initiatives can be difficult, as it is no easy task to define a clear return on investment. To address this challenge, Beginner CDOs should first assess the data landscape within their organizations to identify existing assets and capabilities, as well as business problems that can be addressed rapidly through data. They should then rollout focused, short-term projects to address these problems. This approach demonstrates the value of Big Data to business leaders and can persuade them to invest in more ambitious initiatives.

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Process Oriented CDOs Should Focus on Creating More Value from Big Data

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Tackle Business Challenges through Big Data

In order to expand their sphere of influence beyond compliance, Process Oriented CDOs will need to train their sights at addressing business challenges through effective use of data. Global insurance major MetLife, for instance, conducted an event that brought together data scientists and analytics leaders from diverse departments and business units, with the aim of sharing best practices and generating new ideas around the use of Big Data. At the event, teams of data experts worked together to identify ways in which MetLife could address three major challenges – new product development, improving customer retention and increasing operational efficiency, by harnessing new types of data and using Big Data technologies.¹⁵“

Address Data Privacy Concerns

The use of data to generate customer insights and develop new services raises new challenges with data privacy. As such, Process Oriented CDOs will need to take proactive steps to protect customer data privacy and ensure that data usage complies with legal and ethical frameworks. Proactively informing customers about how their data is used, and how they can opt-out of data sharing, are necessary steps to safeguard the interests of consumers. They will also need to develop strong policies and procedures to handle confidential customer data with care. For instance, removing any Personally Identifiable Information (PII) associated with customer data before it is used can significantly reduce the risk of privacy breaches.

Adapt Data Sourcing and Storage Practices for the Digital Age

To maximize the value of Big Data, Process Oriented CDOs will need to adapt their organizations' data sourcing and storage practices. Retail banks and insurers, for instance, will need to source data from multiple sources including market data feeds, social media, securities repositories, corporate directories, credit bureaus and Know Your Customer (KYC) utilities. In addition, Process Oriented CDOs will also need to develop strategies to minimize data storage costs by identifying data that can be stored in-house, or kept off-shore.

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Value Oriented CDOs Should Standardize Data Management and Expand the Scope of Big Data Usage

Establish an Enterprise-wide Data Governance Framework to Industrialize Big Data Initiatives and Address Compliance Requirements

High-quality data is a prerequisite not only for growth, but also for compliance. As such, Value Oriented CDOs will need to develop a data management framework that supports large-scale Big Data rollouts and which also allows the organization to meet regulatory demands. Given the challenges of managing the high volume and variety of data in financial services firms, Value Oriented CDOs will need to progressively adapt the data management framework to the needs of the organization, extending it gradually to diverse data sets. For instance, they could begin with defining rules for the prioritization, storing and sharing of internal data, before graduating to external data aggregation and finally, creating an integrated set of master data and metadata spanning internal, external, structured and unstructured data sources.

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Actively Promote New Uses of Data across the Enterprise

Value Oriented CDOs should look to expand the scope of Big Data usage beyond the limited number of use-cases that they typically work on. To achieve this, they should focus on making data available to business teams in simple, intuitive and easily digestible formats that encourage business executives to make use of data on a regular basis. Ali Farahani, CDO for Los Angeles County, for instance, is focused on making data readily available to users: “I want to promote a model where we look at data as a service,” he says. “The purpose would be to make it available to all consumers of data, to make it more readable, in a standard format, almost as a plug-in so that any consumer of data in the county can access data without worrying about what platform it is in, without worrying about building bridges to access that data.¹⁶⁷” Value Oriented CDOs should be similarly mindful of end-user needs, in order to achieve the shift towards a data-driven organization.

While the road to Big Data readiness may be challenging, it promises to lead financial services firms towards a more secure future. Process Oriented CDOs must realize that Big Data initiatives demand high quality data as they rely on drawing linkages between internal and external data. A mature implementation of data management rules, tools and processes accelerates the industrialization of Big Data initiatives. As such, their efforts on building data quality control mechanisms to meet compliance requirements, also gives them a solid foundation on which to launch Big Data initiatives. Value Oriented CDOs, on the other hand, may face the difficult task of building a data management framework. However, having demonstrated the value of Big Data as part of their existing mandates, they are likely to find it easier to secure funding for a large-scale data management program.

The perception of data has changed fundamentally. Data is no longer just seen as an enabler, but as an organizational asset that is key to how financial services firms compete, innovate and grow. However, many financial services firms, while realizing the opportunity at hand, are struggling to seize it. This is why the role of Chief Data Officer is growing in importance. It is seen as a means to define and deliver a coherent, enterprise-wide data strategy. However, as we have shown, “CDO” is simply a title. What is more important is how organizations define the role behind the title and what power and influence they give the title-holder. In this paper, we have outlined how organizations can design a CDO role that fits with their stage of data evolution and which maps out how a CDO can help them achieve a step-change in their Big Data performance. In this way, the Data Officer will have earned their place alongside their CMO, CFO, and CIO colleagues in the enterprise C-suite.

Crafting a Comprehensive Data Strategy at TD Ameritrade

In 2012, TD Ameritrade, the American online brokerage firm, appointed Derek Strauss as Chief Data Officer. When Strauss took over, TD Ameritrade lacked a data governance group, its analytics teams were dispersed across the organization, and it relied solely on an enterprise data warehouse. During the first six months, Strauss spent time understanding the needs of the business, establishing the scope of his role, and charting out a data strategy for the organization. Over the next few years, he set up the Enterprise Data and Analytics Group, brought the disparate analytics teams together, built nearly ten new technology capabilities, and set the stage for targeting high-value business use-cases. In a recent interview, Strauss explained the five key pillars of his role:

Data Governance: Working with the heads of all lines of business to determine ownership of data. Each line of business appoints a “Data Steward” or “Data Officer” who acts as a local champion for data control, quality, and day-to-day operations. Strauss’s team works with them to manage and control data-related activities across the organization.

Technology Platforms: Setting up enterprise-wide platforms that allow teams across the firm to leverage data that was previously inaccessible to them. These include a Hadoop data store, a metadata repository and reference data management system among others.

Data Science: Building a team of data science professionals to develop best practices and demonstrate how data analytics can be integrated with business processes.

Data Architecture: Managing data modeling, data quality, metadata management and master data management.

Data Asset Development and Maintenance: Managing the hardware and software-related aspects of the enterprise data warehouse, the Big Data store and data virtualization.

In his role as CDO, Strauss has closely aligned TD Ameritrade’s data strategy with its business strategy. In Strauss’s words, “the chief data officer and the data team are responsible and accountable for the four A’s of data: keep it Accurate, allow it to be Accessible, make it Actionable, and use advanced Analytics to deliver results.”

Source: Network World, “How TD Ameritrade’s Chief Data Officer is driving change”, January 2015; The 8th Annual MIT Chief Data Officer Information Quality Symposium, “How to Establish a CDO Office in Your Organization”, January 2014; LinkedIn, “Derek Strauss, Chief Data Officer at TD Ameritrade”, Accessed March 2015; Hoovers, “Making Room for the Chief Data Officer”, 2014

Research Methodology

In H2 2014, Capgemini Consulting and Efrma, the global non-profit association of retail financial services companies, interviewed senior executives from financial services firms to assess the maturity of the role of the Chief Data Officer in these firms. The assessment was based on a set of nearly 50 questions around data governance mechanisms, the roles and responsibilities of the CDO, and the alignment of the CDO organization with business, IT and support functions.

The findings in this report are also based on two recent surveys conducted by Capgemini:

- I. A survey to assess the extent to which Big Data sources and technology are being adopted across different sectors and regions of the world. About 1,000 senior decision-makers from across nine industries including financial services, and 10 countries worldwide took part in this survey. The study explored the impact of Big Data on businesses and markets and how the acquisition of data is breaking down traditional industry boundaries. The study also looked at how businesses are adapting to these changes.
- II. A survey of 226 senior Big Data executives across Europe, North America and APAC, spanning multiple industries including financial services. The survey targeted senior executives from the Analytics, Business and IT functions, who are responsible for overseeing Big Data initiatives in their organization. Respondents were asked questions around their organization’s approach to Big Data governance, data management, skill development, and technology infrastructure.

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The authors would like to thank industry participants to the study for their time and insights during interviews. The authors would also like to acknowledge the contributions of **Roopa Nambiar** from Digital Transformation Research Institute and **Karine Coutinho** from Efma.

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