Meet the CDO and CAO - The Game Changers in the Age of Big Data
Enterprises struggle with enormous volumes of constantly growing data churned out on a day-to-day basis. The pervasive shift of big data from being the byproduct of an organization’s core functions to a more strategic entity has grasped the interest of C-level executives. Companies scout for expertise in technology, domain and alliances to store, process, manage, and analyze data to enable end-to-end services for data management and analytics. This changing scenario witnesses the birth of two functionally distinct leadership roles – CAO and CDO – emerging from that of the CIO.

The rise of computing in the 1950s, once a back office tool, led to the emergence of an IT related job profile - ‘Director of Data Processing’. Progress in its complexity paved way for a sophisticated and wider role - ‘Director of Management Information Systems’.

The advent of personal computer-based applications like spreadsheets and word processing in the 1980s gave rise to a highly chaotic enterprise-wide IT environment. This disruption witnessed executives invite IT leaders to C-level meetings leading to the emergence of a ‘Chief Information Officer’. Such a role recognized the paradigm shift of computing from electronic data processing to a business strategy. Now, CIOs focus less on ‘keeping the lights on’, and more on reaping direct monetary outcomes through their strategies.

Traditionally, work determining data collection, storage, management and destruction was distributed among the legal, HR and other business functions, with the CIO as governing body. Each department had its own collections of data with its own policies regarding retention and use. The monumental task of trying to manage data in such a disparate environment meant that CIOs, often, couldn’t deliver on their data’s full value proposition. Thus, emerged the ‘Chief Data officer’ (CDO) who holds authority on all data, data management and governance issues. CDOs are perceived as data-centric peers and partners by CIOs, thereby, allowing the CIO to focus on more pressing issues. While the CIO owns the systems, the CDO oversees the bits and bytes that flows.

Scientifically-inclined organizations reach out to analytics for concrete data-centric decision making, thus, prioritizing the need for a ‘Chief Analytics Officer’ (CAO) within an organization. With data analytics models and processes in place, the CAO can spearhead such a culture.

The evolution of job titles from CIO to CDO to CAO is a direct indicator of the progression of business priorities from simple computing to collecting data to using data to drive businesses in entirely new ways.
Understanding the CDO role

The CDO helps maximize the value the firm realizes from the data it generates. CDOs do not ‘own’ the data but own data strategy and quality initiatives. They often act as a liaison between the IT and the business with focus on data monetization efforts. The market bears witness to an increase in business agility by organizations with Big Data initiatives.

The essence of the CDO role is reflected in:

- Data ownership
- Well-timed, relevant information
- Enterprise architecture and efficiency
- Compliance and security

The CDO plays the role of a ‘Data Steward’ for the organization wherein he ensures that there is a constant flow of relevant and well-timed data amongst its users. To facilitate such a flow of information, the CDO lays sound and efficient architecture in accordance with set compliance and security protocols.

CDOs seek newer means to democratize an organization’s data across different business user groups through its enrichment by combining relevant internal and external data. They are on a constant lookout for new avenues of earnings utilizing this data. In doing so, protection and upkeep of the data as an asset is of topmost priority.

The CDO’s job (See Figure 1: Scope of a CDO) includes building and implementing a data management strategy while aligning data with business strategies and providing quality data to derive real value.
Figure 1: Scope of a CDO

**Data Sources**
- Release individual department data into a central repository

**Data Warehousing**
- Centralizing and standardizing data

**Data Quality Management**
- Cultivation of usable data
- Prioritizing data sets

**Data Security & Governance**
- Secure data while expanding access of relevant data to the enterprise.
- Compliance and regulations

**Data Lake**
- Data democratization - Open-data platform
- Identify and build new business models to monetize data

**Reporting & Dashboards**
- Enhance user experience, provide insights and personalize business opportunities

**Administration & Trainings**
- Apprise CIO about data concerns
- Train and enable data users to adopt and implement
- Sustainable and scalable solutions

**Technologies Required:**
- Enterprise Metadata Repository
- Data Quality Platform
- Data Quality Dashboards
- Data Governance Implementation Process
- Issue Management & Resolution Applications
- Content Management
- Process Modeling Tool
- Semantic Modeling Tool
- Data Modeling Tool
- ETL Tool
- Reporting Tool
- Business Rules Engine
- Database Platform

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**Figure 1: Scope of a CDO**
The evolving role of the CAO

The CAO helps leverage Big Data infrastructures through curated experiences, thus, moving the power of data into the hands of business decision makers. The CAO develops analytic metrics that establish a consistent, coherent approach to data and analytics into all enterprise functions. A CAO contributes towards a clear return on investment, along with actionable insights and operational improvements.

A CAO achieves this through:
- Business focus on agility
- Self-service as a key requirement
- Personalization
- Operationalized best practices

The CAO oversees all analytics skills and initiatives to bring agility in the organization and identifies its business needs. He identifies the need for self-service and personalization while delivering analytics solutions using standard operating protocols with proven results.

Through the use of data analytics models and processes, a CAO can create a culture that's driven by curiosity, deep investigation, and collaboration. The CAO explores analytics metrics, reporting, planning, modeling techniques, and more advanced functions like predictive and prescriptive analytics. (See Figure 2: Scope of a CAO)

Figure 2: Scope of a CAO
The CDO realizes the level of infrastructure sophistication required for an organization to align itself to its data and analytics strategy while the CIO lays the foundation for such an infrastructure within the organization to enable crisp data management. While the CDO strategizes data management systems, the CAO strategically deploys analytics for the organization. In recent times, the market has witnessed the CIO, CDO and CAO functions coming together to harness data to derive insights that can be accessed by relevant business users to generate economic value.
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