CDOs Applying AI to Enterprise-Wide Data Management

By Jean S. Bozman

Chief data officers (CDOs) see AI's role expanding rapidly in hybrid clouds and multi-clouds that span the enterprise with end-to-end data management. They plan to put AI to work to ensure consistency in data management and governance, applying data analytics to produce actionable data insights that enhance business competitiveness and quick response to changing conditions.

This AI discussion goes well beyond the realm of OpenAI's ChatGPT and Google's Bard, two high-profile generative-AI platforms that began gaining public attention in fall, 2022, with the prospect of rapid report-generation and the ability to compile data and information quickly.

The focus is shifting to AI tools that can simplify and combine data-management tasks in a powerful and consistent way – all across the enterprise – managing data wherever it resides – from a customer's on-premises and extending to hybrid cloud resources.

The discussion is shifting to how AI will be applied throughout the IT landscape, reducing the data-management challenges across the enterprise, and getting to actionable business insights and solutions more quickly. AI's foundation models can be put to work in data-modernization planning, said Dr. Liliana Horne, director of the AI Accelerator program in IBM's Global Chief Data Office. The key driver here., she said, is to "extract [business] insights from the data."

The goal is clear, but it will take time to apply AI throughout the enterprise. The ability to gain a unified view of all data sources across the enterprise is complex and difficult. CDOs now have the option of using a combination of advanced data-management tools and AI software to access all data, including remote and nearby data. Customers can think of this as "marshalling all the resources across the organization," said Inderpal Bhandari, Global Chief Data Officer for IBM, who led the CDO Summit conference.

CDOs Manage the Enterprise Data

This is why the role of chief data officer (CDO) has gained importance in recent years, starting with advanced data analytics that discover the underlying dynamics of

enterprises. Now, by applying AI technologies, businesses are finding that they can achieve faster and more accurate results through the use of AI algorithms.

The CDO Summit, held in New York City on June 20, 2023, showed the real-world benefits of combining cloud infrastructure, AI software and AI-enabled analytics. Policies, security, and scale must all be taken into consideration when CDOs are applying AI and AI-driven analytics to this large task of enterprise-wide data management. As always, the "ilities" of reliability, security and availability must be supported throughout the data landscape, if AI is to yield faster, more efficient data-based business operations.

"The future of business will be powered by the responsible use of data and intelligent systems," said Travis Carpenter, VP, Data Sources, at Mastercard, who presented at the summit. "As much as possible, we like to take manual processes out of the data." And, he added, "Our goal is to automate this, end to end."

Mastercard is one of the firms participating in the Data and Trust Alliance organization (www.dataandtrustalliance.org) which supports the use of industry standards, security protections, metadata and data-privacy, and anti-bias data policies. The alliance is co-chaired by Kenneth I. Chenault, chairman of the venture-capital firm General Catalyst, and former chairman and CEO of American Express, and by Sam Palmisano, former Chairman and CEO of IBM.

Business Benefits for CDOs

How do CDOs shape their data-management agendas? Many CDOs are gathering more input than ever before from the business users who will be working with that data to improve business insights. At the CDO Summit, the CDO of a large New York bank put it this way: "Our strategy is to engage with our customers, and then work with the data."

That involves discovering the data, being a good, and competent, data steward – and then ensuring data integrity, data security and data privacy throughout the organization. At the same time, compliance with governmental data-privacy regulations (e.g., GDPR and California's Consumer Privacy Act [CCPA]) must be supported and assured.

CDOs approach that engagement with customers in different ways, including having half-day or full-day sessions to gather business requirements from dozens or hundreds of people within the enterprise. "We had 200 people in one of these meetings," said another CDO executive. "We have open-mic sessions, we have data governance meetings – and we talk about the value of the data, and how we manage the data. It's

really important to meet with business managers and executives, throughout the enterprise."

IBM's AI Strategy Is Key to Managing Data in a Hybrid Cloud World

The CDO Summit, where several IBM speakers presented, showed that AI is, indeed, a key component in IBM's overall strategy for digital transformation for its customers worldwide.

Inderpal Bhandari, Global Chief Data Officer for IBM at the time of the June 2023 conference [now retired from IBM], was a keynote speaker. Bhandari emphasized the core themes of the CDO Summit: responsible AI, the importance of leveraging foundation models to provide consistent data across the enterprise, and scaling AI as it gains adoption in many business units.

IBM is hosting a series of CDO Summits to show customers the value of enterprise AI – starting with the New York conference, and leading into the Boston CDO Summit, which is scheduled for December 12, 2023. Other summits may follow in 2024.

"From recognizing the critical role of data strategy in maximizing the potential of AI to empower individuals with data literacy for making informed decisions, we covered a comprehensive range of subjects," Bhandari said. "The emphasis on cross-functional partnerships underscored the importance of collaboration, revealing how departments like CDO and HR can work together to drive data-driven insights and achieve organizational success."

Successful enterprise AI deployments include these key elements: support for regional or national government regulations; support for data sovereignty, retaining company data on-prem if needed; with data integrity and data security throughout. "As for the CDOs, you must make sure that AI is in the service of the [overall] data strategy," Bhandari said, not the other way around. "Make sure that the data is made for that purpose."

Scaling Up AI in Hybrid Clouds

Applying AI to the task of managing data shows customers a way to leverage enterprise data to gain new business insights, leading to increased revenue and profitability for the business, while reducing CapEx costs in traditional IT infrastructure. "Our focus on scaling responsible AI highlighted the significance of ethical considerations [for AI use],

ensuring that AI adoption is carried out responsibly and built upon a solid data foundation," Bhandari said.

The technologies demonstrated at the CDO Summit have already been adopted, and tested, inside IBM, speakers from IBM Software and IBM Research said. In one example, Nickle LaMoreaux, IBM's Senior Vice President and Chief Human Resources Officer, showed how her group is applying IBM watsonx to HR systems running management software in multiple "sites" on the hybrid cloud. The onsite demonstration showed how enterprise-level AI software is focused on tapping deep reservoirs of human relations (HR) data to inform new HR applications, improving overall efficiency and productivity by leveraging enterprise-ready AI software.

The Entrance of watsonx for Enterprise AI

IBM recently introduced watsonx, an IBM software platform for developing, deploying, and managing AI-enabled systems that was first introduced at IBM's THINK conference in Orlando, Florida, in May 2023. It is worth noting that IBM watsonx is intended for use in enterprise AI, with all of the security and compliance considerations that are expected for advanced software deployments and transactional systems. These highly available, highly resilient systems are running important transactional and data-based application in enterprise AI settings, including banks, insurance companies, healthcare organizations and large manufacturing companies.

As announced, there are three elements of watsonx:

- watsonx.ai, an enterprise-ready studio for AI builders to train, validate, tune, and deploy both traditional machine learning (ML) and new generative AI capabilities that are powered by foundation models. It was shipped to customers in July 2023.
- watsonx.data provides a fit-for-purpose data store that is built on an open lakehouse architecture. Customers select the "data piles" that are available from previous data analytics work, consolidating key data to support specific applications. The watsonx.data product was shipped in July 2023.
- watsonx.governance: This product documents and supports responsible, transparent, and explainable AI workflows. It is designed to help customers direct, manage and monitor their organization's AI activities. Scheduled to ship in November 2023.

Taken together, the watsonx group of products is a new platform for AI workloads and data, even though it shares the Watson name of an earlier IBM product offering that was first shipped in 2013. The new watsonx software suite leverages a new generation of AI software, new AI technologies, and it builds on the capabilities of data analytics products that have emerged in the 2020s.

One of the reasons that AI was not widely adopted in the enterprise in the 2010s was that earlier AI offers, across the industry, provided limited functionality and depended on specific skillsets and personnel that were not widely available for hire. This time around, IBM is gaining the benefit of its longtime investments in AI, and the learning curve climbed by IBM Research labs in working with AI and data-management software in the two decades since 2000.

AI's Business Benefits for CDOs

Many organizations implementing enterprise AI work with third-party partners, and adopt standard APIs throughout their organization. They take those steps to make sure that cross-enterprise data initiatives can become a practical reality, given the complexity of "inherited" data. They must consider data from M&A acquisitions, older legacy data, and new cloud-native object-style data that is supported by data-management software.

CDOs approach their engagement with business-unit customers – end-users or business managers – in different ways, as speakers outlined at the conference. One inventive approach is to encourage direct input to enterprise-wide data planning, as stated earlier.

Taking a broad view of the problem-set for embracing, and using, enterprise AI across an organization, can be done. But it is most successful when working with companies, or business partners, who have deep experiences associated with earlier deployments. That could include cloud providers, colocation (also known as colo) firms, MSPs, software providers, service providers and consultants.

Summary

AI has supported distributed enterprise data management for many years – but it has often been difficult to implement AI in an organization's hybrid cloud or multi-cloud deployments. By leveraging enterprise AI, many of the mechanics of managing large

amounts of data, with appropriate levels of integrity, quality, and security, will be made easier.

To achieve their overall enterprise-data goals, CDOs must leverage existing IT skillsets within their organization, even as they adopt new AI technologies for enterprise data. As part of this enterprise adoption, CDOs must support the work of the data architects, data scientists and data administrators to "bridge the gaps" in their company's overall data infrastructure – and to provide unified views that support actionable data insights.

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