Your chief data officer:

Re-imagining the business of data

IBM

Data and analytics have ignited transformation across industries. Data-driven organizations can re-imagine their businesses to help them gain a significant competitive advantage.

Manufacturers that once sold commodities can now deliver smart solutions and monetize the associated data streams. Retailers can design personalized, interactive and omni-channel experiences to better serve consumers. Government agencies can build smarter cities that improve the quality of life for their citizens.

Because of the immense opportunities, a new role is emerging in the C-suite – the chief data officer (CDO). As an agent of change, CDOs are mobilizing their organizations around an enterprise-wide data strategy, activating the use of data in new ways, and building more data-driven cultures.

How do we drive personalization in our web and mobile applications? How can we improve the customer experience when customers use all of our channels? How do weather patterns affect sales at my stores? Will unstructured data help us improve our ability to predict risk and fraud? How can I use data to reduce operating costs?

Organizations worldwide are struggling to answer questions like these with a heightened sense of urgency as they race to remain relevant and stay ahead of market needs. CIOs, COOs and other business leaders are all working individually to tackle their pieces of the larger organizational goals.

But many organizations are finding that this piecemeal approach does not create the transformational value that big data and analytics promises.

Because everyone is responsible for data and analytics, there is no cohesive strategy and no single point of accountability. Consequently, data is often left unused or sub-optimized. It remains in silos, and analytics are often performed by function instead of fueling organization-wide discovery and innovation. Decisions continue to be made based on intuition and experience, instead of analytical insights.

In response, a new role is emerging – the chief data officer (CDO). By 2015, Gartner projects that 25 percent of large global organizations will have a CDO.[1]

Many white papers about the CDO focus on the important topics of data governance and the application of technologies. However, our interviews with multiple CDOs and non-CDO executives suggest a broader mandate: guiding how their organizations architect, analyze and act on data. To do this, CDOs must become an agent of change promoting a data-driven approach.

To better understand this growing and evolving role, we conducted in-depth interviews with CDOs along with CEOs, CIOs and other executives who are contemplating or have established this role for their organizations. Across all interviews, we found recurring themes:

- Obstacles to establishing the CDO role
- The value the CDO role brings:
    - Ability to envision a data strategy
    - Activating real change for the business
    - Transforming the culture
- CDOs' expertise in building data-driven organizations

Study participants represented a broad range of industries, including consumer electronics, financial services, government, healthcare and telecommunications.[2]

By sharing their insights, study participants provided valuable input for companies wrestling with how to fully leverage their data for innovation. Participants discussed both why a CDO was critical to transforming the culture of their organizations and how to create this new position.

What's standing in the way of establishing the CDO role?

The need for the CDO role is currently under deliberation, much like the roles of the chief marketing officer and even the CIO were in years past.

CDOs and non-CDO executives we spoke with highlighted four organizational barriers they faced as they established the role within their organization.

Overwhelmingly, the *territorial stance* on data ownership was viewed as the greatest challenge. As one banking CDO said, "People are very opinionated and have strong emotional attachments to their data, because it drives how they get their work done."

The belief that the work *was supported by existing roles and teams*, such as the CIO and individual business units, and *budgetary pressures* also created organizational resistance. Some respondents conveyed their peers' uncertainty about the CDO's value and where funding would come from. As one insurance operations leader shared, "There is still the perception of: What does a data officer do that IT can't?"

Those organizations already in the hiring phase expressed the difficulty in finding candidates who possessed both the *technical and business skills* required for the position. CDOs translate business executives' needs and goals into working solutions. A successful CDO must not only understand the technical side of data and analytics, but also imagine new ways of combining or using data to accomplish business objectives.

A telecommunications CDO explained the challenge this way: "The CDO role requires that mix of technical skill and business knowledge, which is a difficult combination to find. A lot of folks go deep and become a data scientist or data architect. A successful CDO has to maintain those technical skills while also leveraging business skills."

Why a CDO?

What we found most significant was that while respondents were vocal about the organizational barriers, all emphasized the necessity of overcoming those obstacles given the enormous value a CDO offers. They cited three essential capabilities that only a CDO could deliver:

- *Envisioning* and directing an overall data and analytics strategy for the business
- *Activating* change by using data and analytics to deliver greater value and impact the business
- *Transforming* the culture to one that is analytically driven

"Sometimes these things are very episodic. And episodic won't give us competitive advantage. A CDO should help us in a systematic, institutional way."

– Insurance CIO

"Conceptually, people understand the need for – and generally agree with – having somebody responsible for data. The difficulty comes when it hits sacred cows."

– Banking COO

Envisioning and directing strategy

Activating change

CDOs provide a single point of accountability to create and promote "data integrity, reusability and protection." They prioritize the "greater good" across the organization, even when that may not be the easiest or quickest approach for a particular business unit.

Study participants felt that risk emerging from data management, quality and integrity issues would be the "catalyst elevating the CDO role to C-level."

Respondents likened the CDO to a "conductor," "quarterback" or "navigator." CDOs provide *strategic guidance*, designing and coordinating an enterprise vision for how the organization will treat data as an asset.

Executive sponsorship and mandate also empowers the CDO to deliver an *enterprise-wide view* of data and analytics to uncover patterns and valuable new insight about customers, markets, organizational processes, and compliance. One government CDO emphasized that "the true worth of modern analytics comes when you free the data from underneath the silos that collect it."

Finally, CDOs develop *a holistic, systematic approach* to managing data and analytics—enabling reuse and simpler integration of data across the enterprise. Driving a consistent, strategic approach, CDOs and non-CDO executives agreed can help provide "a sustainable, ongoing competitive advantage."

A fundamental differentiator for CDOs is their ability to act as a bridge between the data and the business opportunity. They can *go beyond traditional data efforts to help find new value and support a new basis of competition*. Their work can help uncover quick wins that provide an immediate return on investment, while creating a platform that delivers long-term value.

For example, CDOs do not just look at existing data. They work to find and mine new internal and external data sources, combine data in new ways, and ask questions that help their organizations unearth new insights and perform in competitive markets. CDOs and non-CDO executives surveyed felt other business leaders were too often focused on day-to-day priorities and could not address the magnitude of the effort required to better leverage data and analytics in addition to their other responsibilities.

Most important, study participants agreed, was the CDO's ability to help their organizations *get closer to customers*. By identifying innovative ways to leverage data—especially new data streams from mobile and social technologies—CDOs can help their organizations better understand the customer experience, predict customer behavior, and, ultimately, build deeper customer relationships.

Explained one insurance CDO, "After interrogating the CMO's database, I started to tell them things that they had absolutely no idea about. 'This is what your customer looks like. This is the sort of product that they're going to buy. And this is how they're likely to behave.'"

Transforming the culture

CDOs can also accelerate the shift from *intuition-based* decision making to *analytically driven* decision making. Study participants underscored that this is the CDO's biggest challenge and greatest opportunity to make an impact on the business. Individuals may have an inherent bias based on their previous experiences and often rely on intuition when making business decisions. A CDO shifts the focus, providing the empirical data that can correct subjective biases.

As one insurance CDO explained, "I was brought in really to change the way that the business works, moving us from an intuition-based organization to hear what the data is telling us and help the business understand the commercial value data can bring."

Integral to this cultural transformation is the CDO's work to reframe the use of data and analytics from *"projects with start and end dates"* to a *"way of life."* Study participants cited the CDO as the best choice to put into production a plan and platforms and solutions that enable sustainable approaches and reusability of data across the organization.

"The whole concept behind this CDO role is determining innovative ways to leverage the data that is available within the company"

– Telecommunications CDO

How CDOs are building data-driven organizations

The addition of the CDO to the C-suite is important to help organizations gain sustained and transformational business value that big data and analytics can offer. As a central data and analytics leader, armed with both technical expertise and business know-how, CDOs are uniquely qualified to help their organizations fully capitalize on their data.

CDOs envision and direct an overall data and analytics strategy for their organization. They can activate change by using data and analytics to positively impact the business. And they can transform their organization's culture from intuition-based to analytically based decision making.

"The whole reason you want a chief data officer – whether you articulate it or not – is because you desire to be more evidence- or analysis-based in the way you make decisions and respond to market stimulus."

– Banking CDO

As the diagram below illustrates, there are many paths CDOs can take to build a data-driven organization. The decision on which path to pursue will ultimately depend on each organization's current state, specific business challenges and top priorities.

For more information on this study and articles on how to build a data-driven organization, visit: ibm.com/services/c-suite/cdo/

About the IBM Center for Applied Insights

The IBM Center for Applied Insights introduces new ways of thinking, working and leading. Through evidence-based research, the Center arms leaders with pragmatic guidance and the case for change.

How to be an agent of change for the data era

Envision

- Make the case for organizational change
- Create a singular data vision and unify data goals
- Motivate people around you and the data strategy to achieve quick wins

Activate

- Provide data know-how to solve specific business challenges
- Showcase early wins
- Uncover new insights and new ways to use data

Transform

- Align efforts to organization's top priorities
- Establish trust in the data and end-to-end platforms – to build reliance
- Scale analytics and speed delivery by enabling consumers of data and insights

IBM

About the authors

Glenn Finch is the Global Leader for Technology and Data in the IBM Global Business Services Strategy and Analytics Practice. Glenn's emphasis on business analytics and optimization is focused on the most challenging and transformative engagements that IBM undertakes. Those engagements have leveraged broader customer centricity and experience work across the customer acquisition, management, and servicing processes. He has over 25 years of consulting experience across industries such as banking, insurance, and telecommunications. Glenn can be reached at glenn.f.finch@us.ibm.com. Connect with Glenn on LinkedIn.

Cortnie Abercrombie is the Emerging Roles Leader for Big Data & Analytics at IBM. Her career has focused on inspiring and inciting innovation and action using data and analytics at a multitude of companies and industries including: Verizon, Citi, NTT and IBM. With one of the most unique roles in the industry, Cortnie is a passionate advocate and evangelist of Chief Data Officers, Chief Analytics Officers and Chief Data Scientists. Cortnie can be reached at cortnie.abercrombie@us.ibm.com. Connect with Cortnie on LinkedIn or Twitter @cortnie_cdo.

Caitlin Halferty is a senior consultant with the IBM Center for Applied Insights. In this role, she conducts research on emerging business and technology trends for forward thinkers and innovative leaders. Prior to joining the Center, Caitlin consulted with clients on four continents and led cross-functional global IT and business teams to deliver organizational change, infrastructure systems and enterprise-wide technology platforms. Caitlin can be reached at caitlin.halferty@us.ibm.com. Connect with Caitlin on LinkedIn.

Contributors

Ellen Cornillon
David Jarvis
Angie Casey

[1]Gartner. (2014). By 2015, 25 Percent of Large Global Organizations Will Have Appointed Chief Data Officers [Press release]. Retrieved from http://www.gartner.com/newsroom/id/2659215

[2]Twenty-three qualitative in-depth interviews were conducted in the United States and Europe (United Kingdom and Netherlands) with both CDOs and non-CDOs. Respondents included 14 CDOs or individuals responsible for the CDO role; seven executives seeking to establish a CDO role within their organizations; and two executives from organizations that had already hired CDOs. Participating organizations were in one of nine industries: insurance, mobile, financial services, government, banking, healthcare, telecommunications, consumer electronics and transportation.