Roadmap for Data Literacy and Data-Driven Business Transformation: A Gartner Trend Insight Report

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Initiatives: Data and Analytics Leaders

A digital business is a data-driven business whose success depends on all employees being information workers who can “speak data.” Data and analytics leaders, including chief data officers, must become change agents focused on the transformational impacts of data-driven culture and data literacy.

Additional Perspectives

- Summary Translation: Roadmap for Data Literacy and Data-Driven Business Transformation: A Gartner Trend Insight Report
  (23 December 2020)

Overview

Opportunities and Challenges

- Cultural aversion to change is the prevailing and recurring roadblock to the success of data and analytics programs.
- Other major roadblocks are a lack of resources (talent) and poor data literacy.
- Data and analytics leaders, including chief data officers (CDOs), still do not address cultural and data literacy challenges within their strategies and programs.

What You Need to Know

- Every employee is now an information worker. With the steady rise of digital transformation, and the need for businesses to create a digital workforce, we see growing recognition of the role that employees’ data literacy plays within an organization’s overall “digital dexterity.”
- The role of the data and analytics function has changed. It is now at the core of an organization’s business model and digital platform. Yet only 23% of respondents to Gartner’s Fifth Annual CDO Survey indicated that they defined and tracked metrics to measure the value delivered by data and analytics in terms of stakeholder outcomes.

- CDOs can emulate their higher-performing peers by putting much more emphasis, energy and effort into meeting the change management requirements of their data and analytics strategies.
- Defining what data-driven behaviors are expected using a "from … to … because" approach is central to employee development plans. It ensures that creators, consumers and intermediaries have the basic skills, knowledge and competencies that are required.
- CDOs need to take immediate action and sustain it. Quick wins build momentum, but lasting and meaningful change takes time, because it requires people to learn new skills and behave in new ways.

Strategic Planning Assumptions

By 2022, 90% of corporate strategies will explicitly mention information as a critical enterprise asset and analytics as an essential competency.

By 2023, data literacy will become an explicit and necessary driver of business value, demonstrated by its formal inclusion in over 80% of data and analytics strategies and change management programs.

Insight From the Experts

Successful CDOs Lead Their Organizations Through Change

Alan D. Duncan, VP Analyst

For each of the past three years, cultural challenges to the acceptance of change and poor data literacy have been among the top three obstacles to the success of data and analytics teams, according to respondents to Gartner's CDO Survey (for the latest, see Survey Analysis: Fifth Annual CDO Survey — Growth Must Continue in Order to Achieve Real Impact and Note 1). [1] Becoming a data-driven enterprise requires explicit and persistent organizational change management to achieve measurable business outcomes. Employees know their organization is serious about corporate cultural change only when they see their leaders changing their own behavior.

CDOs need to promote cultural change and orchestrate "leadership moments" in which they act as role models, exemplifying new cultural traits at critical points. Central to their success will be the ability to guide the workforce by addressing both data literacy ("skills") and data-driven culture ("will").

As long as they fail in this regard, they will continue to fall short in terms of delivering measurable business outcomes.

Best wishes,

Alan D. Duncan

Executive Overview

Definition

Gartner defines *data literacy* as follows:

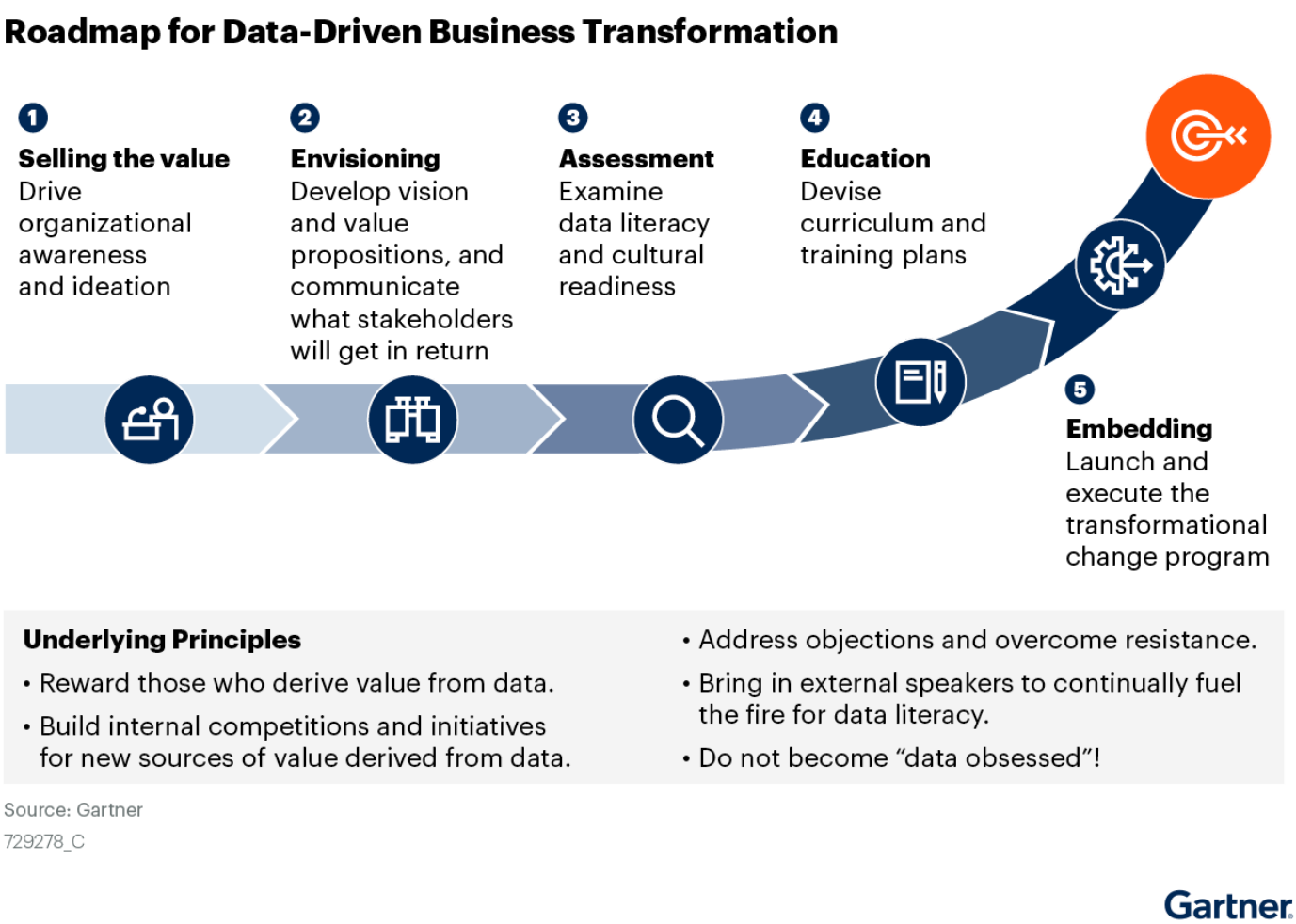
> **"The ability to read, write and communicate data in context, including an understanding of data sources and constructs, analytical methods and techniques applied, and the ability to describe the use-case application and resulting value."**
>
> — *Gartner IT Glossary*

Data literacy is new business competency and a requirement for digital dexterity. Data and analytics are ever-more pervasive in all aspects of all businesses, in communities and even in our personal lives. The ability to communicate in the associated language — to be data literate — is increasingly important, if organizations are to succeed. As with all communication, data literacy is two-way — it involves writing and speaking, and reading and hearing. Whether explaining to the board how data and analytics are manifest in a company's use cases, explaining how to identify, access, integrate and manage internal and external datasets creatively, or describing advanced analytics techniques, data and analytics disciplines are the foundational capabilities driving the digital economy.

CDOs need to take immediate action on these factors and sustain it. The kind of lasting, meaningful change required will take time because people have to learn new skills and behavior. Rather than treating these requirements as constraints, CDOs can emulate their higher-performing peers by putting much more emphasis, energy and effort into the change management requirements of their data and analytics strategies. They must purposefully act as change agents, addressing both **data literacy** ("skills," also expressed as "aptitude") and **data-driven culture** ("will," alternatively expressed as "attitude").

Data and analytics leaders can use this collection of Gartner research to execute all stages of their enterprise's data-driven business transformation (see Figure 1).

Figure 1: Roadmap for Data-Driven Business Transformation

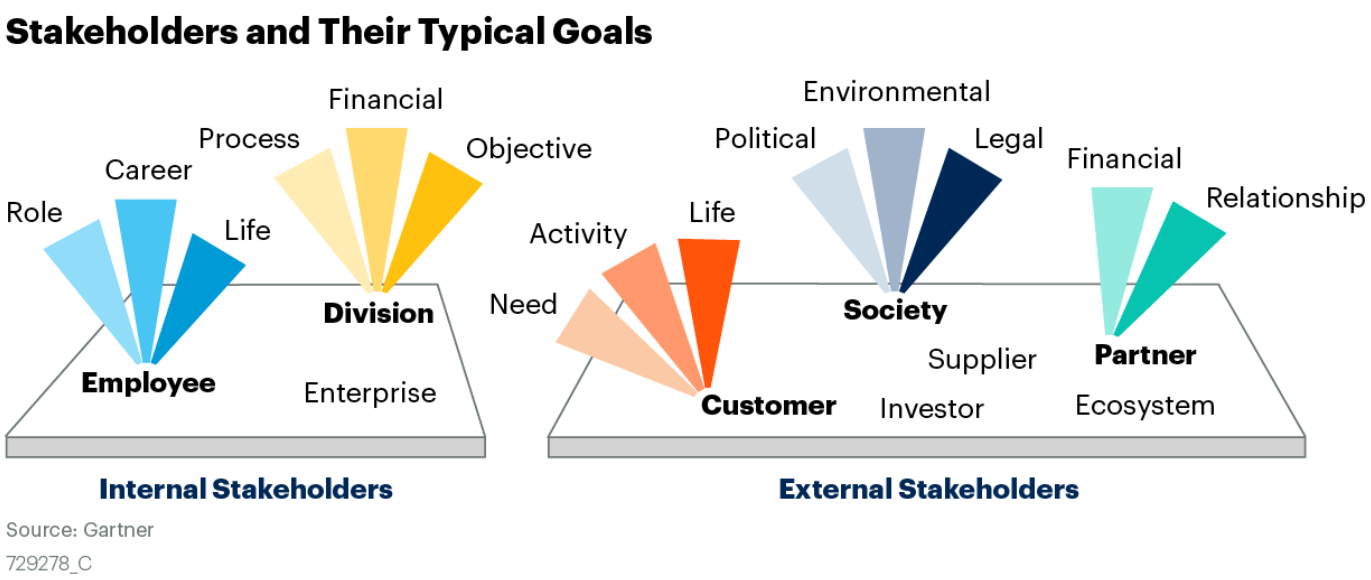


Research Highlights

1. Selling the Value — Drive Organizational Awareness and Ideation

Although data and analytics leaders, such as CDOs, are able to identify that there is an inherent need for data-driven business decision making, linking this need to specific business benefits and outcomes can be difficult. Gartner's research suggests that CDOs are still struggling to articulate the rationale for investing in data and analytics solutions. [1] This makes it challenging enough to define a business case for data and analytics that will receive executive approval, even without hiding behind vague statements about "better decision making." Data and analytics leaders must step up and start providing strong leadership for selling the measurable value of data and analytics to their stakeholders (see Figure 2).

Figure 2: Stakeholders and Their Typical Goals



Data and analytics leaders should:

- Take the lead in creating a narrative that sets a strong vision for the desired end state and business outcomes, particularly with respect to innovation opportunities that have not been identified by others.
- Be honest, resilient and courageous in calling out inhibitors that are preventing progress and identifying the actions necessary to remediate these blockers.
- Work with line-of-business leaders to trace measurable business outcomes back to supporting analytics output and underlying data.
- Address any complicating factors that could impede progress by taking into account stakeholders' change resistance, biases, and any legal or regulatory constraints.

Related Research

Data literacy enables data and analytics leaders, including CDOs, to implement a successful data-driven culture. Tool: Communicating the Need for Data Literacy Improvement is a resource tool that will help data and analytics leaders advance data literacy in their organization and drive measurable business outcomes.

Building a Data-Driven Enterprise is not just about encouraging the use of data in decision making. Data and analytics leaders must lead development of the appropriate competencies and align work to be consistent with their enterprise's ambitions for generating information value.

Getting buy-in is a consistent challenge for data and analytics leaders, such as CDOs. How CDOs Can Get Buy-In and Sell Data and Analytics to Stakeholders explains how to "sell" the overall vision and

strategy for data and analytics and the measurable business benefits, while also overcoming any stakeholder objections and underlying change resistance challenges.

Data and analytics strategies are shifting from “how to create a successful initiative” to “how to use our capabilities to make the organization successful.” As a result, data and analytics leaders, including CDOs, need to include stakeholder needs analysis as part of their strategy. See Tie Your Data and Analytics Initiatives to Stakeholders and Their Business Goals.

Data literacy enables data and analytics leaders to implement a successful data-driven culture. Tool: Enable Data Literacy Through Stakeholder Analysis and Linking to Business Outcomes is a resource tool that supports the fostering of improved data literacy through a practical technique for stakeholder analysis, definition of the requirements for data and analytics use cases, and linking of these to measurable business outcomes.

Data storytelling is about creating a shared vision and call to action through influential communication. How CDOs Can Use Data Storytelling to Engage and Influence Stakeholders explores how CDOs can apply deliberate techniques to their data stories in order to improve the influence and impact they have with stakeholders and drive business value.

Storytelling represents the most powerful tool that data and analytics leaders can use to increase commitment from IT and business stakeholders to their data science projects. How to Use Storytelling to Sell Your Data Science Projects outlines four of the most successful storyline patterns and provides scenarios to exemplify them.

Data quality improvement is not a one-time activity. 5 Steps to Build a Business Case for Continuous Data Quality Assurance shows data and analytics leaders how to plan for ongoing improvement and assurance in their data quality business case, if they wish to deliver sustainable value to their organization.

Widespread data literacy is becoming even more important as we enter the consumer era of analytics. Sports Analytics and the Power of Data Literacy When People Care About Metrics explains that using popular topics that are fun and entertaining, like sports, is an effective way for data and analytics leaders to increase data literacy, communicate the value of analytics and drive adoption.

2. Envisioning — Develop Vision and Value Propositions, and Communicate What Stakeholders Will Get in Return

A striking 82% of CEOs participating in Gartner’s Annual CEO and Senior Business Executive Survey said they have a management initiative or digital transformation underway to make their respective companies more digital (versus 62% in 2018), with 77% planning to increase investment in digital capabilities. [2] As a result, the role of the data and analytics function has changed. It is now at the core of an organization’s business model and digital platform.

The conventional approach to creating data and analytics strategy is based on a set of conditions that are rapidly becoming outdated and irrelevant in digital business. These outdated viewpoints are based on a number of false premises, including:

- Data and analytics cannot be the catalyst for business changes.
- Data and analytics are the preserve of a few specialists, rather than an organizational competency to be practiced by all.
- Data and analytics strategies do not reflect the organization's actions.
- Data and analytics capabilities only align with extant business strategies, rather than instigating them.

(See Modernize Your Organization's Data and Analytics Strategy to Achieve Digital Business Success.)

However, many data and analytics strategies still do not connect with the business's goals or communicate any analysis of stakeholders' needs. Only 23% of respondents to Survey Analysis: Fifth Annual CDO Survey — Growth Must Continue in Order to Achieve Real Impact indicated that they defined and tracked metrics to measure the value delivered by data and analytics to stakeholder outcomes. [1]

Data and analytics leaders should:

- Work with a group of stakeholders that already has enthusiasm and appetite for data and analytics, and that recognize that improving data literacy is a necessary factor for success.
- Run the pilot in a business area where there is high likelihood of achieving measurable business outcomes.
- Incorporate a general ongoing high-level awareness campaign to raise overall basic understanding of the importance and value of data throughout the organization.
- Balance quick-win success with developing capabilities to support longer-term goals. Broaden out from lessons learned in initial pilot scenarios to establish a *modus operandi* for consistent, repeatable expectations and a delivery approach for data and analytics success.

Related Research

Data and analytics leaders, it's time to up your game! Dare to Dream! Give Your Data and Analytics Programs a Mission to Transform Business and Improve the World will help you ensure that your ambitions keep up with the growing potential of data and analytics programs by crafting a bold, inspiring mission statement, and then building programs that deliver indisputable value.

As a data and analytics leader, you need to Complete Your Data and Analytics Strategy With a Clear Value Proposition. To help drive business value and innovation, ensure all stakeholders agree where data

and analytics is a utility, a business enabler or a business driver.

To deliver measurable business value, data and analytics leaders, such as CDOs, must engage a diverse set of stakeholders. The top priorities are to foster data literacy, nurture a data-driven culture and ensure that data and analytics initiatives lead to deliberate and measurable action, as explored in How CDOs Engage With Their Stakeholders to Foster Data Literacy and Deliver Measurable Business Value.

One of the most pressing issues facing data and analytics leaders is how to optimize business value from data and analytics investments. Gartner's new Risk Opportunity Appetite Return (ROAR) model provides a systematic approach that enables data and analytics leaders to align investments with business priorities, assess their true business value and guide investment decisions. See How to Optimize Business Value From Data and Analytics Investments … Finally and the associated Toolkit: How to Optimize Business Value From Data and Analytics Investments … Finally.

Change means needing to maximize data access and knowledge sharing, but this is difficult when working in silos is the cultural norm. Changing Behaviors: From Working in Silos to Working. Collaboratively requires that leaders specify what that means, getting started through conversation and action, and measuring change.

Traditional change management is insufficient in a digital era of uncertainty and constant change. Today's environment demands change leaders who can build sustainable digital environments to enable growth. See Use the ESCAPE Model to Develop Change Leadership.

Tool: A Living Library of Real-World Data and Analytics Use Cases outlines business-value-generating data and analytics use cases from real organizations. Data and analytics leaders should use these examples as inspiration for data and analytics innovation within their own organization.

Know your customer! Data and analytics leaders can use Library: Examples of How Data and Analytics Is Used Across the Enterprise (Domain Data and Analytics) to understand how their business partners think about data and analytics. This third quarter of 2020 update includes over 100 new pieces of content.

Data and analytics leaders striving to extract value from enterprise data face a blinding array of choices. Continuously Market-Tested Data & Analytics Strategy (UrbanShopping*) explains how one vendor's approach to a data and analytics strategy led it to create a data and analytics sandbox that enabled rapid market testing of new data products and solutions and drove substantial ROI.

Analytics Prioritization Principles (Gap Inc.) shows how Gap Inc.'s workforce analytics team established enterprisewide analytics priorities to better fulfill diverse data demands from the business. Gap Inc.'s approach helps data and analytics leaders understand how to drive business value by learning and meeting their business users' data and analytics needs.

Building an advanced analytics center of excellence can be a daunting undertaking for many finance leaders. Finance Advance Analytics COE Strategy (American Tire Distributors) explains how to create a vision and a strategy for an advanced analytics center-of-excellence implementation in finance.

3. Assessment — Examine Data Literacy and Cultural Readiness

Assessing the data literacy of the workforce — whether it be creators, consumers or intermediaries — is a critical step to ensuring your organization is enabled with the necessary skills, knowledge and competencies. Taking a baseline of current skills will help you to meet both current and future requirements of digital business and even broader society.

Data and analytics leaders should:

- Consider people's current learning levels, competencies and desire to participate when inducting them into training.
- Work in partnership with human resources (HR) and line-of-business leaders to identify the various job roles and personas within their organization that require a given level of data literacy, and then define the learning goals and outcomes required by each role.
- Map the required levels of data literacy training in the relevant topics and competencies to each job role or persona (a retail sales clerk, for example, would need a different training plan from a supply chain performance improvement manager). Of course, not every job role will need to learn about every topic, and many job roles may only need to gain a basic level of knowledge for a few key topics.
- Collaborate with HR and line-of-business leaders to assess skills and training requirements, design upskilling roadmaps, create a curriculum and determine training performance metrics.

Related Research

Data literacy enables data and analytics leaders, including CDOs, to implement a successful data-driven culture. Toolkit: Data Literacy Organizational Assessment assesses an organization's overall data literacy, providing input to overall data literacy awareness and content planning. By contrast, Toolkit: Data Literacy Individual Assessment assesses individuals' data literacy, providing input to their professional development planning.

Change initiatives often fail because employees don't know how they must change their behavior or why, and inconsistent messaging creates distrust and causes change resistance. CDOs can maximize the chance of successful initiatives if they Start Organizational Change With a From/To/Because Model.

IT Score for Data & Analytics shows how organizations are improving key objectives of the data and analytics function. The new model better enables data and analytics leaders to assess their maturity in areas such as governance, data integration and management, and analytic content creation.

Data and analytics leaders often cannot focus on high-value projects due to demand for lower-level data products. Capability-Driven Data Use Expectations (Bunge) explains how Bunge's audit team used self-assessments to standardize requests to the data office, improving the audit team's own data literacy and increasing data specialists' bandwidth.

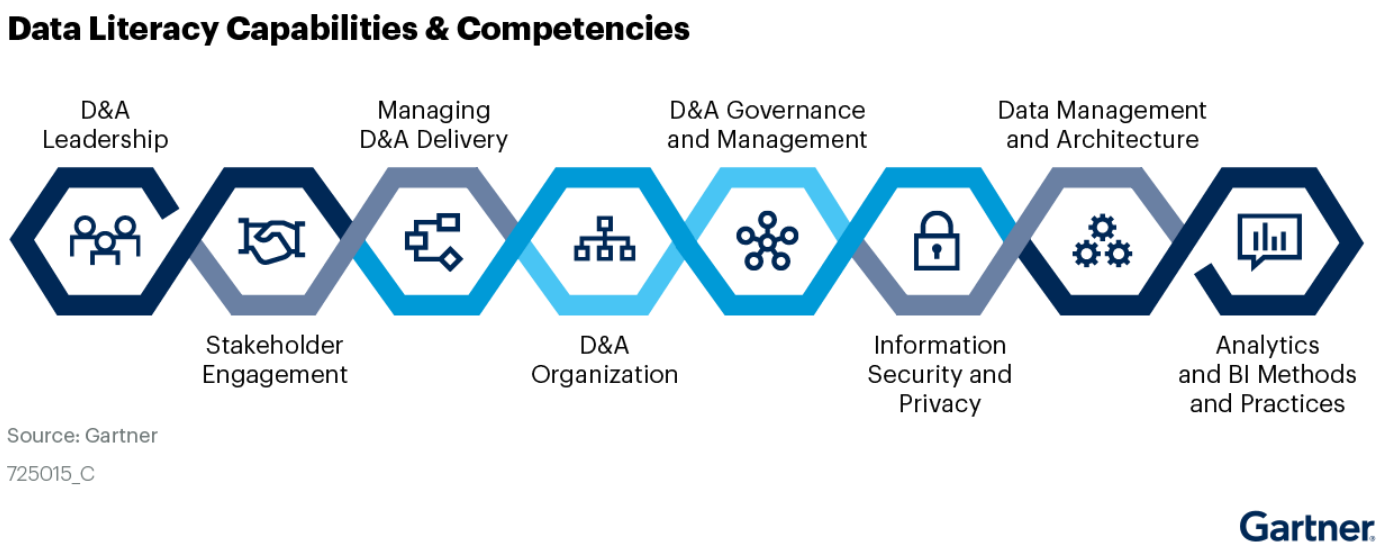
Data and analytics talent is infamously expensive and hard to find. In Capability-Based Data and Analytics Talent (Stats NZ), data and analytics leaders can learn how Stats NZ attracts the right talent and develops flexible internal talent pools by prioritizing core capabilities in its recruiting, rather than technical skills alone.

Advanced analytics talent is scarce and in high demand, with potential candidates fielding competitive offers from multiple organizations. Case Study: Startup-Inspired Advanced Analytics Branding (American Tire Distributors) illustrates how to better attract and retain this talent by emulating the workplace brand characteristics of a startup for its advanced analytics team.

4. Education — Devise Curriculum and Training Plans

With the steady rise of digital transformation, and the need for businesses to create a digital workforce, we now see recognition of the role that the data literacy of employees plays within overall digital dexterity. Simply put, every employee is an information worker. Digital skills are critical, including an understanding of the application of sensors, robots, digital twins, mobile technologies, the cloud and seamless collaboration. However, there is a fundamental element that flows through all of these — data. The need to understand how insight can be derived from data through analytics and artificial intelligence (AI) is foundational to how every employee engages in a modern digital business (see Figure 3).

Figure 3. Data Literacy Capabilities and Competencies



Data and analytics leaders should:

- Go beyond vendor product training to focus on people's roles. Use a mix of training delivery methods by considering the times, locations, roles and skills differences to improve overall learning effectiveness and experiences for new analytics capabilities.
- Collaborate with HR and business leaders to develop analytics training programs by assessing skills and training requirements, designing upskilling roadmaps, and determining training performance metrics.
- Design analytics training programs and embed on-the-job learning experiences based on the change readiness of users and their ability to improve data and analytics competency over time, and as their skills and needs evolve.
- Assemble the curriculum into modules for each area of study appropriate to various delivery methods. Examples would be modules for self-learning, reading, online computer-based training, informal lunch-and-learn sessions, classroom-based learning, and/or on-the-job coaching. This may also involve more formal and certified education in partnership with a training provider or higher education institution.

Related Research

A well-designed and adaptive data and analytics training program is vital to improve data literacy. How to Design an Effective Data and Analytics Training Program to Improve Data Literacy explains how data and analytics leaders can modernize their training programs to include a mixed portfolio of training approaches, and leverage adjacent competencies as a foundation to drive the highest business value.

The increasingly pervasive nature of data makes it crucial for all employees to learn to "speak data." Toolkit: Curriculum for Data Literacy Training Programs outlines practical advice for data and analytics leaders to plan their data literacy training programs as key enablers of successful data and analytics strategies.

Constant learning is key to this "fast-forward" digital era. CIOs concerned with talent development and talent scarcity can fulfill future needs for skills and competencies by turning upskilling and reskilling into rewarding experiences. To achieve this, see Create an Environment That Makes Learning a Rewarding Experience for Individuals.

Data Literacy Providers Will Accelerate the Time to Value for Data-Driven Enterprises explains how support from third parties can accelerate the success of data literacy training programs and offer new delivery models and platforms. Data and analytics leaders should select from a portfolio of commercial and academic providers both for their current expertise and their emerging capabilities.

Improved data literacy is crucial to achieving digital business success. Data and analytics leaders must incorporate data-centric facilitation practices if they are to unlock the value of their enterprise information assets, following the guidance provided in Data-Centric Facilitators Are Crucial for Enabling Data Literacy in Digital Business.

Essential Skills for Citizen Data Scientists shows how data and analytics technical professionals can cultivate citizen data scientists by focusing on 19 essential skills, such as business subject matter expertise, advanced data literacy and machine learning (ML) model development.

Tiffany & Co. takes a multipronged approach to design training offerings that support knowledge workers across the tool life cycle and focus on conducting analysis. Information Training Portfolio (Tiffany & Co.) will help you develop knowledge worker analytic skills, design an analytics training portfolio that provides ongoing support to knowledge workers, and provide a portfolio of training offerings for support across the tool life cycle.

Communication between data science teams and business partners is difficult. Machine Learning Literacy for Business Partners Implementation Tool (Micron) reveals how Micron Technology taught its business partners the potential and limitations of ML. It complements a best-practice case study, Machine Learning Literacy for Business Partners (Micron).

Data and analytics leaders regularly highlight insufficient talent resources as a barrier to meeting the growing demand for advanced analytics and data products. Data and Analytics Talent Library gathers in one place over 50 (as of the second quarter of 2020) of the tools and insights developed by Gartner's data and analytics researchers on sourcing, staffing, organizing, and developing high-performing data and analytics teams, from organizational models to job descriptions and hiring guides. This resource will be updated regularly.

5. Embedding — Launch and Execute the Transformational Change Program

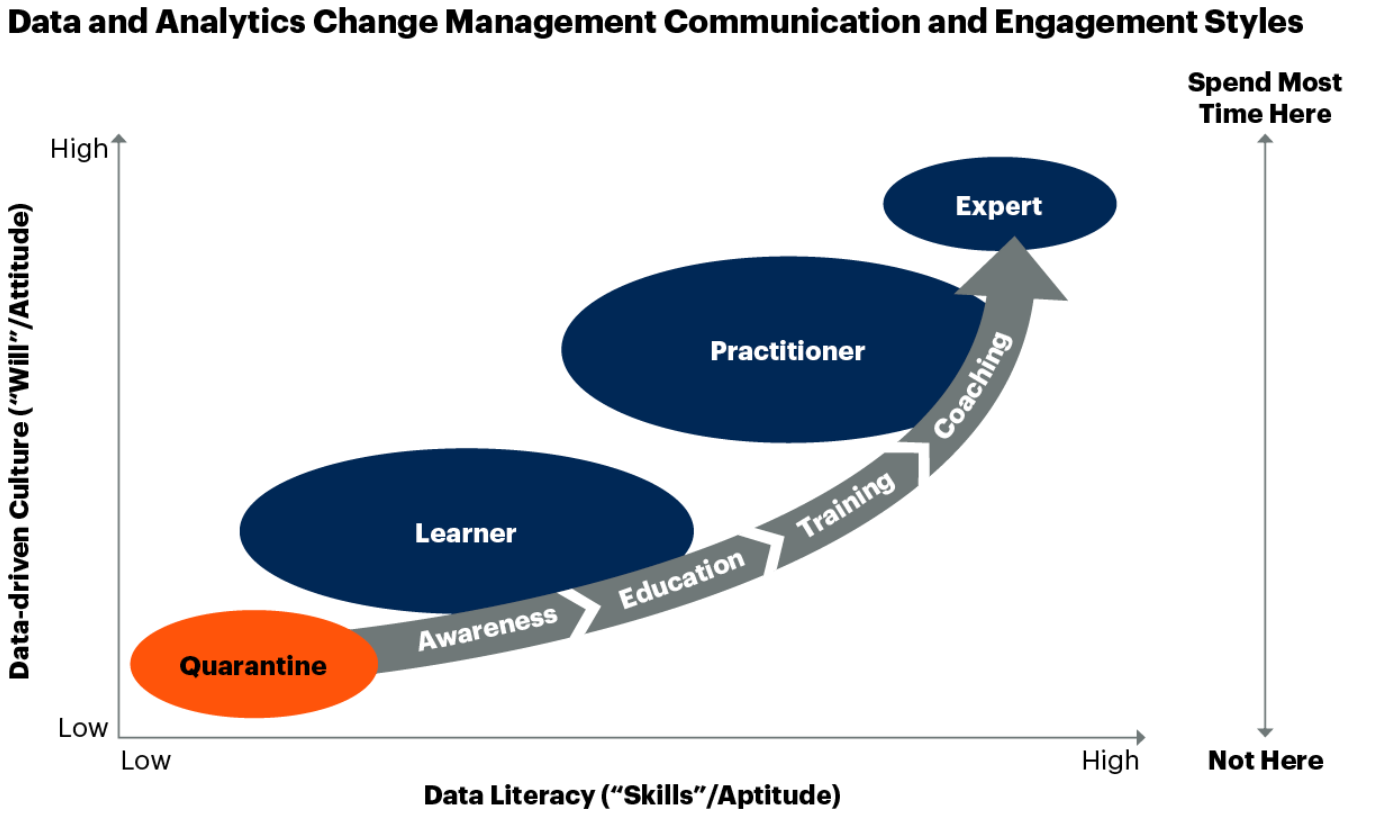
CDOs must address these cultural and data literacy challenges within their strategies and delivery programs. If they do not do so, they will continue to fall short in terms of delivering measurable business outcomes. Common contributors to shortfalls, according to Gartner clients, include:

- The CDO having not been in the role long enough to effect change.
- Line of business (LOB) managers and staff having been in their positions for a long time and not responding well to change.
- Data being seen as the responsibility of the IT function.
- There being no understanding of how change will benefit individuals.
- There being a lack of demand for data within business units.
- The link between data and business outcomes being missing or insufficiently explained.

To mitigate these factors, CDOs need to take immediate action and sustain it. Quick wins and basic changes to address immediate pain points certainly build momentum and help recruit a "coalition of the willing." But lasting, meaningful change takes time, because it requires the changing of mindsets and behaviors, the learning and practicing of new skills, coordination and discipline, as well as the

incentivizing of people to participate. Rather than treating these factors as constraints, CDOs can emulate their higher-performing peers by putting much more emphasis, energy and effort into the change management requirements for their data and analytics strategies (see Figure 4).

Figure 4. Data and Analytics Change Management Communication and Engagement Styles



Source: Gartner

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Data and analytics leaders should:

- Monitor the results of improved data literacy within the workforce by using data literacy assessments and measuring associated improvements to data-driven business outcomes.
- Leverage quick wins to incentivize staff to use data in their interactions. Using workers' stated pain points as stimuli can get them to identify the changes necessary to address those pain points.
- Match the pace of change to the readiness of the stakeholders. An often-ignored but vital aspect of change is that individuals change at different speeds. The vast majority of change programs assume that change will happen at the same time and the same speed for everyone involved. Even when your employees start from the same position at the beginning of your change program, some employees will eagerly embrace change and take the initiative, while others will fall behind or even be reluctant to start.

- Augment their capability to develop and deliver the program content by leveraging additional third-party resources, organizations and educational institutions that offer solutions, services and courses of study related to data literacy and data-driven business.

Related Research

Becoming a data-driven enterprise requires explicit and persistent organizational change management to achieve measurable business outcomes. Accordingly, Chief Data Officers Must Address both "Skill" and "Will" to Deliver Data-Driven Business Change.

Building a data-driven enterprise is not a matter of encouraging the use of data in decision making. Data and analytics leaders must lead development of the appropriate competencies and align work to be consistent with their enterprise's ambitions for generating information value. For more details, see Build a Data-Driven Enterprise.

10 Ways CDOs Can Succeed in Forging a Data-Driven Organization examines 10 common issues that, if ignored or minimized, can undermine effectiveness. Applying these best practices will improve the likelihood of success for the CDO role and for critical information initiatives.

A common language is needed to connect data value with business outcomes. Data and analytics leaders should use Toolkit: How to Use the Gartner Data and Analytics Glossary to Boost Your Data Literacy to improve data literacy and lead change in order to harness market opportunities and drive business benefits.

Culture is the most frequently mentioned obstacle to scaling digital business in Gartner surveys. Leaders find culture hard to change because they lack a methodology and some behaviors feel intractable. Follow three steps to diagnose and change stubborn behaviors using Gartner's Culture PRISM to Change Culture.

Unexpected opposition and weak support often lead to the failure of data and analytics programs. How Data and Analytics Leaders Can Overcome Resistance by Turning Saboteurs Into Allies explains how data and analytics leaders can improve the likelihood of success through better stakeholder engagement with deeper insight into human behavior and motivation.

Unexpected opposition and weak support often lead to the failure of data and analytics strategies. How Data and Analytics Leaders Must Address Emotional Impacts to Foster a Data-Driven Culture shows how data and analytics leaders can improve their likelihood of success by better understanding the behavior and resistance motivations of key stakeholders, and thus open the door to a data-driven culture.

To create a data-driven culture, data and analytics leaders such as CDOs need to work at both the strategic and the tactical level. "Culture hacking" is a method that they can use to make a series of immediate small changes in support of a larger transformation, as explored in CDO Success Factors: Culture Hacks to Create a Data-Driven Enterprise.

Launching a new data and analytics initiative can be difficult at the best of times. It is particularly hard when stakeholders are reluctant to participate. For advice, see How Chief Data Officers Can Make Progress With Business Stakeholders Who Don't Engage.

Frustration is a natural part of the change process. Many leaders dismiss this reaction as employee "change resistance." Adopting a "things I can and can't control" technique can enable you to lead people through frustration and maintain momentum. See CIOs Must Embrace Change Frustration as a Positive Sign of Engagement.

AI is a byproduct of human design teams, who imprint on it their individual biases. Maverick* Research: Relieve AI and Data Science Negligence With Mindful Awareness shows that data and analytics leaders must be aware of themselves and embed mindful awareness into AI governance to circumvent the negligence prevalent, via biases, in AI-based algorithms created by humans.

Artificial Intelligence Demands That CIOs Foster a Data-Literate Society because AI uses algorithms to make sense of and act on diverse, complex and fast-moving data. CIOs responsible for enabling AI initiatives need to foster a culture of data literacy to drive success with AI-based systems.

Data and analytics leaders need to move from a technology-centric to a human-centric approach to developing AI solutions. This requires a deliberate focus on empathizing with users. Designing and developing AI systems without empathy leads to user distrust, culminating in active opposition. See AI Development Must Embrace Empathy or Face a Human Uprising.

Leading CDOs deploy an analytics "nudge" to encourage analytics use by functions they do not control. Opt-Out Decision Engineering to Encourage Analytics Use explains how to implement these tools in business processes and how ANZ's audit group increased analytics use by embedding analytics in their workflows.

"Show, Don't Tell" Data Quality Cleanup (Citizens Bank) shows how CDOs and other analytics leaders can improve data quality by reporting poor-quality data, demonstrating how better quality improves decisions and encouraging business stakeholders to take more responsibility for data quality.

Centers of excellence can best derive value through inter- and intradepartmental communication and alignment of incentives. Creating Business Value With Multidisciplinary Data and Analytics COEs (Omicron*) explores how data and analytics leaders can remove a COE's barriers to collaboration through team structure and staffing.

6. Industry-Specific and Domain-Related Scenarios

The term "domain data and analytics" refers to the portfolio of data and analytics capabilities applied across specific industries and business processes to improve decision making. Domain data and analytics recognizes that business domain expertise is necessary for creating useful data insights. It enables the decentralized resources in a particular business domain to perform data and analytics on

their own, while also aligning with centralized data and analytics capabilities to maximize business impact. (See How to Create Data and Analytics Everywhere for Everyone: Top Insights for Digital Business.)

Data and analytics leaders must collaborate with domain-specific analytics workers to support multiple use cases across business processes, industries, analytic methods and heterogenous data. Gartner defines domain data and analytics as a set of data resources and analytical methods, used across an organization, including:

- **Industry vertical domain analytics**: Analytics specific to an industry (for example, telecom analytics, banking analytics, healthcare analytics).
- **Business process domain analytics:** Analytics applied to a business process or function (for example, finance analytics, customer analytics, marketing analytics, advertising analytics, supply chain analytics, HR/workforce analytics, IT analytics, risk analytics).

Effective pursuit of domain data and analytics encompasses the current priorities of the CDO, which include valuing information, adopting emerging digital trust technologies, and leading strategically oriented data and analytics teams. It also includes data literacy — the ability to "speak data" using business-relevant terminology.

Related Research

Data Literacy in Human Resources

As organizations become more reliant on data to make business decisions, HR analytics leaders must strengthen data literacy throughout the HR function. An Applied Approach to Data Literacy Training for HR shows how to successfully train HR partners by adopting an applied training approach that teaches data literacy in the context of their projects and processes.

Most organizations are already deploying AI across different business units. The success of those deployments depends not just on technology but also on human factors, particularly the skills and preparation of the workforce. How HR Contributes to Successful AI Deployments: The Human Side of AI examines how chief HR officers can address three common human barriers to AI enablement.

Data Literacy in Audit Functions

Data Literacy in Audit Departments: The Role of Audit Leadership discusses the importance of data literacy and how audit leaders' data literacy can play a vital role in the success of audit departments' data strategies.

Data Literacy for Finance Functions

The democratization of new data and analytics tools and the decentralization of decision making has created a need for financial data literacy throughout organizations. Finance's Role in Improving the

Business's Financial Data Literacy helps FP&A leaders with three critical actions to improve businesses' financial data literacy for effective decision making.

Data and analytics governance can founder when employees lack the skills and mindset to support it. Accelerating Data and Analytics Governance With Data Literacy helps finance leaders foster data literacy education and develop improved data and analytics skills within the workforce, in order to maximize the impact of data and analytics governance initiatives.

Data Literacy for Sales Functions

Application leaders must improve sales analytics capabilities. Organizations have access to unprecedented volumes and variety of data, but deriving insights continues to be a struggle. Improving analytics outcomes for the sales function requires a clear business value and improved data literacy, as explained in Use a Data-Driven Approach to Improve Sales Analytics.

To provide deeper account-level insights, organizations are increasing their investments in sales analytics. Advanced CRM Sales Analytics Requires Trust-Based Data and Analytics Governance explains that in order to ensure these investments prove effective, application leaders supporting CRM sales technology need to instill a trust-based data and analytics governance framework.

Data Literacy for Supply Chain

To provide deeper account-level insights, organizations are increasing their investments in sales analytics. In order to ensure these investments prove effective, application leaders supporting CRM sales technology need to instill a trust-based data and analytics governance framework using Toolkit: Assessment of Data Literacy in the Supply Chain.

Data Literacy for Technology Service Providers

Metrics and dashboards are often not enough to convey the impact of marketing initiatives on business goals. To effectively lead their teams and explain performance, product marketers should Apply Data Literacy and Storytelling to Explain Technology Marketing Performance, and to provide descriptive, diagnostic and prescriptive insights.

Gartner Associates Supporting This Trend

Alan D. Duncan

Sally Parker

Donna Medeiros

Debra Logan

Related Resources

CDOs Must Take the Lead to Improve Data Literacy

Create a Data-Driven Culture by Influencing 3 Areas

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Evidence

[1] Gartner's Fifth Annual Chief Data Officer Survey (2019) was conducted to explore the business impact of the CDO role and the office of the CDO. The research was conducted online from September through November 2019, with 293 respondents from across the world. Respondents were required to have the title of CDO or chief analytics officer, or to have the responsibilities of an executive-level data and analytics leader within their organization (in the case of organizations without an official C-level data and analytics title). The survey sample was gleaned from a variety of sources (including LinkedIn), with the greatest number coming from a Gartner-curated list of over 2,000 CDOs and other high-level data and analytics leaders. The survey was developed collaboratively by Gartner data and analytics analysts and Gartner's primary research team. The results of this survey do not represent global findings or findings for the market as a whole. Rather, they reflect the sentiments of the respondents and companies surveyed. (See Survey Analysis: Fifth Annual CDO Survey — Growth Must Continue in Order to Achieve Real Impact.)

[2] The 2019 Gartner CEO and Senior Business Executive Survey is part of Gartner's research into CEO and C-level business executives' concerns, priorities and attitudes toward technology-related issues. For this annual survey, 473 responses were collected in 32 countries during 4Q18, from leaders of companies

with $50 million or more in annual revenue. Of these, 60% had more than $1 billion in annual revenue and 15% had $10 billion or more (see Highlights of the 2019 CEO Survey: The Year of Challenged Growth).

Note 1: Gartner CDO Survey 2017-2019

As well as the 2019 CDO survey results, respondents to Gartner's CDO Survey in 2017 and 2018 also identified "culture challenges to accept change" and "poor data literacy" among the top three critical roadblocks to the success of the data and analytics team. For more information, see:

- Survey Analysis: Fifth Annual CDO Survey — Growth Must Continue in Order to Achieve Real Impact
- Survey Analysis: Gartner's Fourth Annual CDO Survey — Key Capabilities That Enable Business Success
- Survey Analysis: Third Gartner CDO Survey — How Chief Data Officers Are Driving Business Impact

Recommended by the Author

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Maverick* Research: Culture Isn't the Disease — Personal Biases and Malpractice Are