

CIO Guide

4 STEPS to building a DATA-DRIVEN CULTURE





Introduction

Data is at the center of every application, process, and business decision. But organizations on a quest to become more data-driven are finding that the journey is neither easy nor straightforward. They are sitting on a treasure trove of data, but many struggle to extract value from it.

One challenge is a sprawling, complex data landscape, with growing volume of diverse sources and formats. Companies struggle to get a handle on where their data sits, and how to connect, manage, and act on it effectively.

CDOs say “data-driven culture” is a top barrier to success

But an even bigger challenge looms for leadership teams: creating a data-driven culture. According to a recent [Chief Data Officer \(CDO\) study](#), 69% of CDOs spend the majority of their time on data-driven culture initiatives, but 55% view the lack of a data-driven culture as a top barrier to meeting business objectives.

How to create a data-driven culture—and why it matters

After experiencing mixed results, leaders are re-evaluating current data, governance, and literacy strategies and seeking new technology that makes data a strategic

asset and empowers users to make data-driven decisions. To reach that goal, CIOs and CDOs need to put mechanisms in place to convert data into actionable insights and make structural shifts to empower users to act on those insights, efficiently and in real-time.

“Creating a data-driven culture across the enterprise is essential to moving beyond just a few successful data initiatives and islands of excellence limited to certain business areas,” says Ishit Vachhrajani, Enterprise Strategist, AWS. “You can make a tremendous investment in technology, tools, and data, but if you don’t have the right culture of transparency, decentralization, and empowerment on the front line, it’s like having a high-performing car with no one to steer it.”

Leaders who are embracing the imperative to rewire culture are already reaping tangible results. A [2022 IDC study](#) found that organizations that lead in investments in their data and analytics capabilities are, on average, 2.5 times greater than lagging organizations in key areas such as revenue, customer satisfaction, and improved operational efficiency.

This e-book explores the challenges organizations face in establishing a data-driven culture and the four critical steps they can take to begin to shift the collective mindset to treat data as a strategic asset that can improve operations and drive growth.

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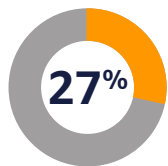
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What's standing in the way of a data-driven culture?

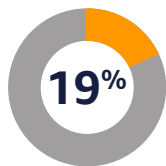
C-suite executives recognize the enormous opportunity ignited by data-driven business. More than half (57%) of organizations in NewVantage Partners' 2022 [Data and AI Leadership Executive Survey](#) say they are driving innovation with data. In the [MIT CDOIQ study](#), 41% of CDOs say they define success as achieving business objectives, and 36% believe focusing on a small set of key analytics or artificial intelligence (AI) projects can deliver the most value.

However, while executives understand the value of embracing data-driven business practices, they face an ongoing set of challenges to make good on the mandate. The NewVantage Partners study found that:

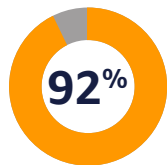
- ▶ **Just 27%** have created a data-driven organization, up slightly from 2021
- ▶ **Only 19%** have established a data-driven culture, down from 28% in 2019
- ▶ **92%** of survey respondents cite cultural impediments as a barrier to becoming data-driven



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Source: Big Data and AI Executive Survey 2021, NewVantage Partners

Among the biggest obstacles to creating data-driven business practices and culture are:

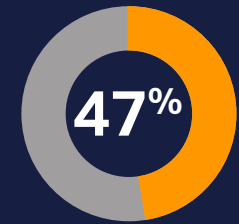
- ▶ **Poorly articulated direction** and a defined place to start
- ▶ **Lack of focused leadership** and executive engagement to help change organizational structure, establish new roles, and embrace new ways of working
- ▶ **Outdated data governance** and data management policies
- ▶ **A lack of data proficiency** across the organization, which impedes the true “democratization” of data
- ▶ **Persistence of data silos**, supported by cultural silos that discourage shared access to business-critical information.

“Cultural silos feed the data silos, and they are difficult to overcome,” Vachhrajani says. “They incentivize individual functions to guard their data to control the narrative.”

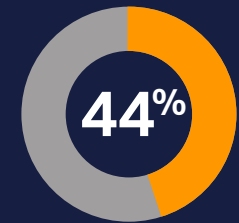
Yet another roadblock: Too many companies still operate from a “data-forward” playbook that concentrates on amassing huge volumes of data, only to regroup after the fact to figure out what to do with it. In comparison, companies that successfully move the needle on data-driven business are embracing a “customer-backwards” model: identifying a specific business opportunity or challenge and then mapping data accordingly to problem-solve or achieve a specific outcome.

Many large enterprises “are drowning in a sea of data and they sometimes aren’t properly focused on what’s crucial for business success,” says Michael Gabriel, a partner with Fortium Partners. “And that can lead to underachievement from the use of data analytics, as they can’t see the forest for the trees—or even find the trees.”

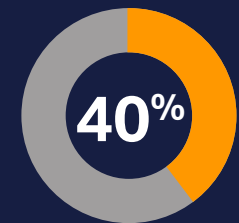
Slow adoption of data-driven business practices



47%
of organizations are competing on data and analytics



44%
of organizations have well-established data and AI ethics policies and practices in place



40%
are managing data as a business asset

Source: [Data and AI Leadership Executive Survey 2022](#), NewVantage Partners

Four steps for creating a successful and sustainable data-driven culture

Though challenges are numerous and a lot to unpack, many organizations are making notable progress. While there is no one-size-fits-all playbook that guarantees you will move the needle on culture change, focusing on four key areas can get you headed down the right path.

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4 STEPS TO BUILDING A DATA-DRIVEN CULTURE

Step 1: Move beyond executive sponsorship to executive engagement.

Changing culture is a gradual, incremental process, which means it requires a tremendous amount of institutional fortitude, buttressed by unwavering commitment from the top. To shift culture successfully, organizations need to go beyond traditional C-level sponsorship.

Leaders need to engage in their own visible efforts to marry data with core business objectives and showcase the benefits of doing so. Executives also need to take a lead role in promoting data sharing for the good of the collective enterprise, not just to advance the specific objectives of a team, department, or function.

Appointing a “single-threaded” executive to lead the charge and carry the messaging is central to driving culture change. This leader could serve in a new role like CDO or CAO or fall under the existing CIO; the key is that they are laser-focused on how to fully leverage data and have the authority and accountability to drive change across the business. The MIT CDOIQ study found that 21% of respondents in CDO/CAO roles report into the CIO, 22% report into another C-level exec, and 23% report directly to the CEO.

Regardless of the reporting line, the lead data strategy role requires a servant leadership mindset, not an executive looking to build a centralized data function with its own headcounts and budget. “They can’t be interested in building a data empire for themselves, but rather enabling and driving success for the rest of the company using data,” Vachhrajani says. “They are the connective tissue of the company, able to drive and build relationships across the business.”

If the data leader runs a separate function outside of the IT organization, it’s important to forge a strong partnership with IT to facilitate new processes and spearhead a culture makeover. Not only is IT responsible for building the core infrastructure backbone and modern technology capabilities to support transformation, but they are also best situated to have an end-to-end view of business cycles, cross-departmental workflows, and transactional systems.

“The CIO partnership is crucial, not just because you want to consume data for AI models or machine learning, but because you also need to make sure the applications, systems, and integration are in place to capture data,” Vachhrajani says.

What to watch out for

The MIT CDOIQ study found that CDOs have many responsibilities and expectations—perhaps too many, suggesting the need to narrow the focus. To truly unlock the value of their organization’s data to drive timely insights and innovation, the primary focus should be on implementing an end-to-end data strategy that makes data management easier at every step, from ingesting, storing, and querying data to analyzing, visualizing, and running machine learning.

Four steps for creating a successful and sustainable data-driven culture

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4 STEPS TO BUILDING A DATA-DRIVEN CULTURE

Step 2: Enable frontline access, insights, and action.

Discussions around democratizing data often center on making data more accessible to users who have the best understanding of the business and are closest to customers. Yet culture change really takes hold when an organization puts the processes and mechanisms in place to democratize not just the data, but also the decision-making that lets workers take action.

To do this, begin with one or two high-impact use cases where a strong hypothesis can be built and where success can have a direct and immediate impact on business outcomes. Continue to iterate and incrementally build data capabilities and the data platform, while leveraging any quick wins to create excitement. Further build momentum by communicating the results to frontline users as part of a broader change management campaign. In that way, the wins are not viewed in isolation, but rather are tied to the big-picture benefits of rewiring culture to be data-driven.

It's also important to create mechanisms that allow this engagement to scale across the entire organization.

One approach is to move from "one-way" decision-making to a "two-way" door model. This approach encourages calculated risk-taking because experiments are easy to unwind if they don't meet objectives or deliver value.

Governance and policy also are critical to ensure the right data makes it to the right people to facilitate better decision-making. A robust governance foundation will help to make data accessible and relevant to all stakeholders, inside and outside the organization. People need access to information to make better decisions, so it's important to make data as open as possible and deliver the right mechanisms to find it—while also keeping it protected from misuse.

What to watch out for

There's a natural bias to measure everything possible, but a smarter approach is to establish a few key metrics focused on specific business outcomes, such as reduced wait times in a contact center, improved customer satisfaction rates, or, of course, increased sales. Regularly measuring outcomes along with controllable inputs will enable continuous improvement and ensure you're meeting business objectives. The goal is to consistently make high-quality decisions at high velocity, whether the decisions are related to creating new product lines or customer experiences, or more broadly around growing the business globally.

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Four steps for creating a successful and sustainable data-driven culture

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Step 3: Provide end-to-end data governance.

Silos can be fatal to a data-driven business, but they are incredibly difficult to break down. Legacy culture and organizational structures too often reward individuals for their ability to curate, validate, and publish data to promote their own agendas—while restricting how others in the organization use it. This can create several versions of the truth, which impedes informed decision-making rather than enabling it.

What does a successful data governance strategy look like?

Successful organizations implement a data governance strategy that allows data teams to move faster and empowers users with the data they need because the right people can quickly find, access, and share data when they need it. End-to-end governance gives you control over where your data sits, who has access to it, and how it can be used at every step of the data workflow.” Think about how your data moves across the organization,” says Vachhrajani. “What are the gatekeeping controls?”

Identifying these controls can help you figure out how hard it is for someone to get access to data to work on or make a decision from. That gives you a good picture of any silos that exist.”

It’s important in this context to understand why different groups feel the need to guard “their” data, and how that approach prevents the free flow of data across the enterprise.

Creating data stewards involves encouraging the people who control data access and quality to become educators and data champions. They still have input into how data sets are validated and published, but liberal use of automation can free them up for a broader role.

Building trust

Implementing end-to-end data governance begins by building trust among business stakeholders and demonstrating how the willingness to share access to departmental data benefits everyone. IT-driven automation can help streamline manual data-sharing processes to free up stakeholders to focus on the strategic use of data rather than the tactics for accessing it.

“Start with real examples, not just theory, of how data sharing has benefited a particular department [using data] from another area,” explains Gabriel. As part of that communication, “emphasize that without sharing, there can be redundancy of data, redundancy of cost, as well as an inability to see the full picture,” he explains. “That creates a disadvantage to the company as well as an individual department.”

In order to engender that level of trust, CIOs must cultivate strong relationships across the business, from the C-suite down to frontline operations, Gabriel says.

What to watch out for

As you implement an end-to-end data governance strategy, don’t overlook the process improvements that are critical to streamlining people’s access to data. If you’re migrating to the cloud, you don’t want to repeat past mistakes—and that includes recreating existing data silos. Use the migration as an opportunity to rethink existing processes and data flows, based on the business outcomes you’re looking to achieve.

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Step 4: Educate and enlighten.

Organizations can promote data proficiency by cultivating a higher understanding of data as a strategic asset, while implementing processes for putting data to use. Robust training programs and more informal creative activities can spark interest among people across the organization to find new ways to leverage data for their day-to-day activities. Sponsoring competitions, hackathons, and real-world exercises will engage average business users and help them understand the power of data-driven decision-making using scenarios that are familiar.

In other words, it's important to continually look for new ways to empower users—for example, encouraging teams to offer analytical models in a central marketplace so peer groups can leverage them for their own business needs.

"Data proficiency is about building a bridge between the science of data and the people at the front line who are acting on it," says Vachhrajani. "Not just making them data-aware and teaching them to use these great tools, but also changing your business processes to incorporate the data into action at all levels."

It's also important to invest in a variety of functional skills to support the broader use of data. In addition to data scientists and analysts, look to bring on engineering specialists, data visualization experts, and storytellers. These are people who can close the gap between analytics expertise and business expertise so they can communicate in a way the C-suite, salespeople, and operations team members can relate to and understand.

"Most executives are leery of the promises of technology that sometimes create growing costs and unfulfilled success criteria," says Gabriel. "You have to be able to show how it can help the business and how it can be cost-effective in helping achieve and surpass their expectations. It's always about the cost/benefit and risk/reward ratios."

What to watch out for

Data proficiency takes root with clear and consistent communication across the organization about the value of using and sharing data. Without a common language around data, it's impossible to establish the values, beliefs, and ideas that influence the culture and keep everyone on the same page.

SUMMARY

What success looks like

Successful data-driven transformation will vary depending on a company's business objectives, as well as how quickly the entire workforce adapts to cultural shifts and embraces new business practices. The transition can be slow, but there are a few clear signs your organization is making headway on changing culture. They include:

- ▶ **A higher number of innovation projects**, indicating a shift to a culture of experimentation
- ▶ **Reduced bottlenecks** and cycle times across different functions, such as expediting new offerings into the product pipeline, closing new deals, or facilitating customer transactions
- ▶ **Improved recruiting** and retention, as business users are galvanized to leverage data to take action, which can boost overall job satisfaction
- ▶ **Increased data proficiency**, as newly empowered business users embrace competencies and take on roles that didn't exist before.

"Culture is hard to change and sometimes hard to define," says Vachhrajani. "It requires a tremendous amount of will and it takes time." But with the right blend of leadership, empowerment, and technology, organizations can develop a data-driven culture capable of making high-quality decisions, at high velocity, to innovate and grow.

End-to-end data strategy with AWS

Leveraging data as a strategic asset can help your organization make data-driven decisions, meet customer expectations, and remain competitive. But the insights and truths data offers must be accessible to every facet of your business. If you're committed to reinventing your organization into a data-driven one, you can empower everyone to unlock data's potential and innovate in new ways.

To become a data-driven organization, you'll need to implement an end-to-end data strategy that is:

1. **Comprehensive:** Enable real-time action on data for any type of use case, data, and user now and in the future with a comprehensive set of tools that can handle data at scale with optimal performance.
2. **Integrated:** Easily connect data across silos.
3. **Governed:** Govern all your data to give data access when and where your users need it.

Only AWS is equipped to provide you with the capabilities you need for an end-to-end data strategy now and in the future. AWS is investing across the entire data journey, from ingesting, storing, and querying data to analyzing data and building machine learning models to ultimately helping end users develop data-driven insights. And with built-in intelligence and automation in all our data services, AWS makes the complexities of data management easier so you spend less time managing data and more time getting value from it.

AWS has the most operational experience, at greater scale, of any cloud provider. We work with more than 1.5 million customers to solve some of the most complex data problems in the world. Discover how [Nasdaq](#), [Zynga](#), [Samsung](#), and the [NFL](#) are maximizing business value with AWS data services.

Unlock the value of all your data with AWS data services. ▶ [Learn more](#)