Transform Your Business: Build and Maintain a Data-Driven Culture
It's hard for any organization to sustain success indefinitely. To stay relevant, organizations must periodically reinvent themselves. The introduction of cloud computing set off a generation of reinvention. Now the next wave of reinvention is clearly being driven by data. Leaders need to be able to rely on solid, meaningful data to make decisions now and prepare for what's ahead.

Doing that requires building a data-driven organization. Essentially, such organizations treat data like an organizational asset, no longer the property of individual departments. They set up systems to collect, store, organize, and process valuable data and make it available in secure ways to the people and applications that need it. Then — and here's the key — they use that data to inform those all-important business decisions.

But it's not always easy to shift to (and then maintain) data-driven decision-making, especially at large companies that grew and thrived with data siloed by function or department. In this year's NewVantage Partners survey of executives from Fortune 1000 and industry-leading companies, fewer than half said they are driving innovation with data, and less than one-quarter said their organization is driven by data. Both findings represent decreases from levels reported in 2019 and 2020. (For more on the survey results, see “Still Striving for Data Mastery.”)

“Leading companies are struggling to become data driven,” says Randy Bean, CEO of NewVantage Partners. Part of the decline is due to the evolution of a more realistic view of what it means to be data driven. Also, data volumes continue to proliferate along with new sources of data. “More and more information keeps hitting these organizations. As quickly as they get good enough to handle one particular thing, five new things come at them,” says Bean, who is also the author of Fail Fast, Learn Faster: Lessons in Data-Driven Leadership in an Age of Disruption, Big Data, and AI (Wiley, 2021).

The (Ongoing) Journey to Data-Driven Decision-Making
Ultimately, becoming data driven is all journey and no destination, according to Piyanka Jain, president and CEO of Aryng, a data consulting company. In other words: It’s a constant work in progress.

And data maturity can be rated on a continuum ranging from “digital naïve” up to “digital elite,” she adds. “Naïves are beginning to wake up to the fact that they have such large amounts of data sitting in silos,” says Jain, whose books include Behind Every Good Decision: How Anyone Can Use Business Analytics to Turn Data Into Profitable Insight (AMACOM, 2014). “And people have been using it, but in nooks and crannies. Can it be combined to make some larger decisions?” On the other end of the spectrum are the elites, those using data as their lifeblood. “They live by dashboards. They live by 0.25% optimization. They live by real-time data,” she says.

Making decisions based on data provides a better way to achieve organizational goals, according to Richard Huntsinger, executive director of the UC Berkeley Data Analytics Group and a faculty member in the UC Berkeley Haas School of Business. The first goal, of course, is usually to increase profits. But there are others, including driving revenue growth, improving brand awareness, boosting customer and employee satisfaction, creating a better customer experience, and so on.

Agility is another significant benefit of data-enabled decision-making: “You can change direction quickly because you know earlier on when you’re wrong,” says data consultant Piyanka Jain.

Leveraging data for decision-making enables agility while driving innovation and business results. But becoming genuinely data driven requires significant cultural change — and involves an ongoing journey. Here’s where to start.
experience, increasing innovation, and reducing costs. Participants in the NewVantage survey also noted that they are using big data and AI investments to support revenue-generating capabilities, such as customer development.

Agility is another significant benefit of data-enabled decision-making. “You can change direction quickly because you know earlier on when you're wrong,” says Jain. Let’s say you launched a product in a new market and, based on data-driven planning, you thought you'd see sales increase by a certain percentage within three months. “If you don't see that, that means you were wrong — and that’s fine,” she says. “You can correct your course faster.”

It’s Not Intuition vs. Data
A common misunderstanding is that it’s preferable to choose data over human intuition, knowledge, or expertise. That misconception often generates significant resistance to establishing a data-driven culture. In general, younger workers tend to understand intuitively the value of data-driven decision-making, says Huntsinger. Meanwhile, older people tend to have more experience — and they tend to value that experience more highly.

But being data driven doesn’t pit data against intuition, says Jain: “It is data and intuition, because intuition drives hypotheses.” The people with the most significant experience should be vital sources for hypotheses that can be tested via data analysis.

Being adept at data enables institutional intuition and experience to be captured and used at scale, says Jain. “Now this knowledge can percolate throughout the organization because it's being learned also through data. And it’s getting into the organizational fabric, not just living within one person.”

Data Silos: The ‘Monster Under the Bed’
When shifting to being data driven, culture presents much more of a challenge than technology. For the fifth consecutive year, respondents to the NewVantage survey — 76% of whom held the title chief data officer (CDO) or chief analytics officer — cited cultural obstacles as the biggest impediment to successful adoption of data initiatives. Employees, especially at large legacy companies, are often reluctant to share data and stop operating in silos, which grew up because they were an efficient way to organize work. Joe Hilleary, a research analyst with Eckerson Group, calls silos the “monster under the bed” in enterprise organizations. Huntsinger

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Still Striving for Data Mastery
Executives at large enterprises report that they aren’t yet fully tapping the power of their data. Of respondents from 85 major companies who participated in NewVantage Partners’ latest survey:

- 48.5% are driving innovation with data.
- 41.2% are competing on analytics.
- 39.3% are managing data as a business asset.
- 30.0% have a well-articulated data strategy for their company.
- 29.2% are experiencing transformation business outcomes.
- 24.4% have forged a data culture.
- 24.0% have created a data-driven organization.

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

Four Ways Data-Driven Organizations Use Data
Richard Huntsinger, a professor at UC Berkeley’s Haas School of Business, sees companies leveraging data for the following purposes:

1. Creating new products and services and innovating existing offerings.
2. Improving and streamlining internal operations.
3. Improving intelligence about the market and themselves.
4. Extracting value from the data in its own right — by selling it, for example.
Data-Driven Decision-Making in Action

How data helped a retailer beat its competition despite the pandemic.

It used to be that grocery stores did planning entirely by looking in the rearview mirror — stocking their shelves based on historic sales data: “If it happened last year, it will happen this year, too.” But the flaws in such thinking became painfully obvious as the COVID-19 pandemic unfolded in early 2020, and certain products became all-but-impossible to obtain.

Rather than simply making assumptions about what shoppers want, today’s data-driven retailers are recording, measuring, and analyzing actual customer shopping patterns throughout the year. So rather than having a set floor plan and product mix in all locations, for example, companies expect both to change frequently based on actual up-to-date traffic and purchasing patterns.

Eckerson Group research analyst Joe Hilleary points to the example of a higher-end grocer that was already closely tracking its stores’ sales data before the pandemic started — which was, of course, also before shoppers began rushing to stock up on products such as toilet paper, bleach wipes, and hand sanitizer. As the earliest product shortages emerged, the company was able to respond quickly because it had systems in place to quickly gather, store, analyze, and report on that data. So in those first few weeks, company buyers were able to spot what turned out to be the leading indicators of a likely run on essential goods in their stores.

“They were able to put in orders to restock [these hot commodities] before any of their competitors because their data and business were aligned in such a way that business decisions around purchasing and stocking could be made based on a near real-time store data,” he says. Data effectively allowed the retailer to jump the line ahead of the other retailers that didn’t see the shortages coming. “They managed to keep their shelves full in those first few months when folks were out of everything,” says Hilleary. The bottom line? Increased sales.

joked that when he worked at nearly 100-year-old HP, his colleagues referred to him as the SEM (silo elimination manager).

Dismantling silos and propagating data throughout a company allows the organization to view data as an asset, not just an artifact of doing business. Successful data-driven organizations view data as a strategic asset to be managed and leveraged toward the achievement of business objectives.

Being able to share data across organizations has driven transformation in many industries. Life sciences companies, for instance, have reaped unforeseen benefits by sharing data across vastly different product discovery lines that would traditionally have been siloed.

“In the data-intensive verticals like pharma, finance, health care, you can’t compete anymore unless you’re at the cutting edge of data,” says Hilleary. While many companies in these industries did not begin life as “data-first” entities, they have begun to take their cues from their most data-forward competitors. Ignoring the strategic importance of data is not an option.

The advent of the chief data officer title in the 2010s marked an elevated recognition of the importance of data, says Bean. “Now most businesses know data is an asset that flows across all of an organization. Companies need to think of how to harness that asset to manage it most effectively.”

Increasingly, the CDO is either a peer of the CIO or reports in to the business, says Bean. “That’s meant to create that connection between business value and outcomes, as opposed to IT simply creating a capability and then waiting for somebody to discover it,” says Bean.

Data-Driven Customer Experience

Being a data-driven organization is the foundation to providing excellent customer experience (CX), says Hilleary. Take the classic example of calling the customer service number for your bank. “Now as soon as I call in, they read my phone number, they know who I am, they pull up my information. And by the time that I get connected to a person, they already have it in front of them. That improves my customer experience and is only possible because of data strategies like Customer 360, things that enable them to bring all of my data together,” he says. A major improvement over the days when calling a bank meant bouncing from one rep to another, this customer experience is now table stakes in financial services.

Layering technologies like ML and the internet of things (IoT) on top of customer data platforms (CDPs) and customer relationship management (CRM) systems opens exciting new vistas for CX. iRobot is already using IoT in its Roomba robotic vacuum cleaners. They constantly report data back to iRobot. Before long, the company will have the ability to know exactly what the problem is before a customer calls...
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to report an issue. The agent could have an answer ready without needing to send a technician to look at the unit — scoring convenience for the consumer and lower cost for iRobot. With the problem solved, the manufacturer can then use the data to enrich its future models.

Being able to leverage data in ever more creative ways is key to delivering experiences that continue to delight customers, which is important as customer expectations grow inexorably. “The first few times I called my airline and asked a question about my ticket and they already knew what I was calling about, it was pretty incredible,” says Hilleary. “But humans adapt very quickly, and expectations increase. Now, if I call a business and they don’t know who I am immediately, I start to say, ‘OK, they’re not up to my baseline expectations anymore’ and I go somewhere else.” That’s just one illustration of the potential harm of not being data driven. (To learn how one data-driven retailer met demand during the pandemic, see “Data-Driven Decision-Making in Action.”)

The handwriting is on the wall. Sooner or later, you’re going to have to infuse data into your culture and your decisions. Confused about where to begin? Consider taking these four steps:

1. **Convene a data council.** You can’t make data-based decisions until you know what kind of data your organization has, where it resides, and how people are using it. Hilleary, of Eckerson Group, advises putting together a data council whose role it is to coordinate between business and IT. Under the auspices of the CDO or another data-fluent executive-level officer, the council should consist of business stakeholders and IT leaders. The council should formulate and communicate the organization’s strategic plan for data.

   “It’s really a dialog back and forth where the data folks are learning from business folks about what is relevant to their decision-making process,” says Hilleary. The next step is figuring out how to deliver that high-value data to the business in a timely way.

2. **Emphasize data literacy.** As with teaching children to read, you can’t just tell people they need to be data literate (or, to use a term that some experts prefer, data proficient). “It doesn’t happen overnight,” says Jain. “When you’re teaching reading, you start with picture books, getting children excited about the colors and pictures.”

   The same is true of teaching data literacy. Jain recommends piquing employees’ interest with real examples of data-driven successes. “Show them an end-to-end process” of what data-enabled decision-making looks like in action, she says.

   Get them excited about the big picture, but also introduce them to the smaller things they can do. Give them incremental doses of how to think and then act with data, and then lead with insights. It’s a progressive journey from “data skeptic” to “data enthusiast” to “data literate” and “data-driven manager.”

3. **Focus on the best data-use cases.** The power of data lies in its power to help answer your organization’s burning questions. As a first step, focus on what Bean of NewVantage Partners calls “high-value business use cases.”

   “Start with your most critical metrics, your key questions and decisions that need to be made, and then identify the data associated with these,” says Bean. From there, identify and focus on quick wins. Results will help establish credibility within the business. “That starts to really build the momentum, which sets the stage for a strong business and technology partnership around data,” he says.

4. **Avoid complacency.** Again, there’s no end destination to being a data-driven organization; the target moves all the time. “The best firms, those that have been successful at developing data-driven organizations and data cultures, are never satisfied. They’re perpetually restless and never think what they’ve been doing is good enough,” says Bean. On the other hand, there are also organizations that say they have everything under control. “That’s when I worry,” he says. “The best data-driven firms are never complacent. They’re always worried. They’re always striving to be better.”

**What Is a Data Catalog?**

A key aspect of treating data as an asset is being able to store it in such a way that it is searchable within the organization. Data catalogs connect meta descriptions of data with the original sources of data, making the data more easily accessible for decision-making while restricting data access to authorized users.
Creating a Data-Driven Culture: 4 Key Actions

This conversation has been edited for clarity, length, and editorial style.

As an enterprise strategist at AWS, I have the privilege of working with hundreds of executives from some of the world's largest companies and helping them with their digital transformation journeys. I often find that executives need no convincing that data is a strategic asset. Instead, they need help unleashing its value at scale to reinvent their businesses. They tell us that many of their challenges are cultural. At Amazon, we care deeply about innovating on behalf of our customers, and we believe a data-driven culture is necessary for a successful digital transformation.

Organizations can create more data-driven cultures by taking four key actions:

**Engage:** Culture change must start at the top. While executive sponsorship is necessary, it is not sufficient. The entire senior leadership must remain visibly engaged beyond just approving investments. The organization then needs to create mechanisms to scale this engagement to support data-driven decision-making at all levels. Executives must analyze how decisions are made today and ensure that employees throughout the organization use data to guide their decisions, not just to support them after the fact.

**Enable:** It's also essential to make sure that front-line workers can use the data. Democratization of data is not just about providing access to data, but about democratizing decisions and actions as well. It’s not about bringing data to the decision makers, but instead about decentralizing the decision-making to bring it closer to the data. In a data-driven culture, employees use data for everyday choices, not just big decisions.

Data is empowering, but it can also evoke strong emotions. To eliminate resistance, it’s important to create a strong change management strategy that focuses on communication and makes the use of data not only easier but enjoyable.
Educate: A data-driven culture reflects the belief that data proficiency is a core skill for everyone in the organization, not just for those in specialized roles such as data analysts or scientists. This means investing in education across all functions, in new roles, and in capabilities such as storytelling, visualization, and the translation skills that connect the art of business with the science of data.

Eliminate: Perhaps the most critical part of creating a data-driven culture is removing the cultural barriers that protect data silos. A data-driven culture treats data as an organizational asset, not as a departmental property. This approach can be achieved by a top-down commitment, establishing governance with a goal to enable, not restrict, and by enlisting the guardians of these silos to become champions in educating others on how to use their data rather than building walls around it. Data is empowering, but it can also evoke strong emotions. To eliminate resistance, it’s important to create a strong change management strategy that focuses on communication and makes the use of data not only easier but enjoyable.

In short: A data-driven culture thrives when the senior leadership is engaged (and middle management is empowered), front-line employees can easily access data for everyday decision-making, everyone is educated in data proficiency, and silos are eliminated. Such a culture also creates a more positive work environment, as it brings with it objectivity, transparency, and innovation. By using a data-driven culture at scale, a company can successfully use data as a differentiator in the marketplace — and as a unifier within its own organization.

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