

Data-Driven, Digitally Transformed

Lessons from the Leaders

We've known for some time that the future of business is digital. Now we are seeing more and more that the future of every digital business is data-driven because the core competencies of each strategy complement and reinforce each other.

Data is created by digital interactions with customers. Data-driven enterprises capture and exploit this data.

Using insights derived from that data to enhance existing or create new digital interactions wins more interactions, and an even richer, faster, and larger inbound flow of data.

As enterprises leverage more powerful artificial intelligence, and amass a larger variety and volume of data, enterprises reap compounding returns from mastery of this virtuous cycle.

Key Takeaways

- **Three-quarters** of organizations that identify as 'highly advanced' on both 'digital transformation' and 'progress toward the data-driven enterprise' have increased their pace of innovation as a result of the changes they've made to adapt to the pandemic.
- A majority of these enterprises attribute **at least 10 percent of revenue** to data and analytics. For these data-driven enterprises, alignment across corporate strategy, digital transformation plans, and data strategy is paying off.
- These leaders are nearly **twice as likely** to identify both 'strategy' and 'technology' infrastructure as competitive advantages as compared to organizations that are at the earliest stage of both journeys.

Excellence is a journey. Enterprises do not achieve it overnight. Architecture must be re-tooled to handle an abundance of both microservices and data. Culture must evolve in order to make the most of the potential opportunities technology affords. Functional and business leaders need to cultivate and reward skills within their organizations to have a data-centric approach to improving processes and increasing customer value.

Every enterprise is at a different stage of the journey. Some have leaned in to digital business transformation, but are only just now building a data strategy. Others have been working at both for years.

In this white paper, we take a look at the patterns and practices of enterprises that have reached a self-identified “advanced” stage in both operating as a digitally transformed and data-driven business.

About the data in this white paper

In October, 2020, DataStax and ClearPath Strategies surveyed 515 technical practitioners, managers, and executives in United States companies. All organizations had at least 100 employees; two-thirds (66 percent) more than 1000.

Respondents were asked about what best describes the stage of digital transformation at their organization and how data-driven their organization is.

About one in five (114, or 22 percent) consider their organization “highly advanced” at both. We characterize these as “Dual Leaders.”

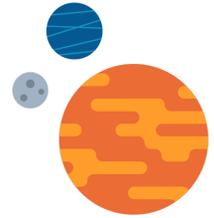
Which of the following best describes the stage of digital transformation your organization is in?

- **Highly advanced** - implemented and optimized digital initiatives company-wide
- **Advanced** - implemented and optimized most but not all digital initiatives
- **In process** - beginning to execute our digital initiatives
- **Just beginning** - formalized digital initiatives and goals, but just starting to roll them out
- **Planning** - discussing plans for digital initiatives
- **Not applicable** - digital transformation initiatives are not a priority
- **Don't know**

Which of the following best describes how data-driven your organization is?

- **Highly advanced** - we are excellent at discovering, leveraging, and operationalizing data
- **Advanced** - we have operationalized most of our data strategy but still have room to improve
- **In process** - we have begun to implement our data strategy
- **Just beginning** - we have a formalized data strategy but have not yet begun implementation
- **Planning** - we are discussing plans for data initiatives
- **Not applicable** - data strategy is not a priority
- **Don't know**

Transform the Core



Dual Leaders have integrated previously disparate elements to succeed. Just as "IT" once stood separate from corporate strategy, for most companies data also remained siloed.

Dual Leaders have integrated all three.

Their data strategy is connected both to their digital transformation efforts (83 percent) and to their corporate strategy (84 percent).

For a large majority of Dual Leaders, data is a board-level discussion (77 percent).

Those discussions center on evolving core business operations. Dual Leaders are most likely to create new data-driven products and services. Another high priority is increasing the efficiency of their operations. Selling data to third parties is least likely to be a top priority.

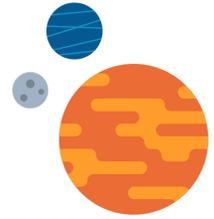
	PERCENT RANKED #1
Create new products or services	34
Increase operational efficiency	25
Discover and acquire valuable data from third parties	19
Enhance existing products and services	15
Sell data to third parties	8

Patterns for success: The Home Depot

"One Home Depot" as a multi-year initiative is front-and-center in the CEO's [annual letter to shareholders](#).

The Home Depot took an opinionated point-of-view on digital and data-driven transformation: "our front door is our mobile app," [according to Fahim Siddiqui](#), SVP Software Engineering. "We don't think about e-commerce as one thing and in store commerce as another thing, it's all on the same continuum of the customer journey."

Calibrate Investment to the Stakes



Today's Dual Leaders overwhelmingly see a significant positive impact on revenue and margin from data (79 percent and 70 percent, respectively). A strong majority have achieved materiality: 59 percent attribute at least 10 percent of revenue to data and analytics.

As Dual Leaders build the foundation of data-driven success, they are not wavering from a strategic commitment to making hard choices in order to invest in growth, even under conditions of uncertainty and business disruption.

Only 4 percent report insufficient funding for important data initiatives as a significant issue. Nearly nine in ten (87 percent) have increased investment in digital in response to the pandemic.

Raising the stakes further, most Dual Leaders (76 percent) have increased their pace of innovation as a result of the changes they've made to adapt to the pandemic.

Patterns for success: Don't leave talent to chance

The most in-demand, modern tech skills were already in high demand, and more organizations committing to faster transformation will further raise the stakes.

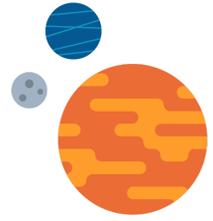
We've observed three ways enterprises are investing proactively to ensure they don't leave having the talent they need to chance.

One is building on existing skills. One organization is investing in well-documented and simple access patterns to their emerging, modern data platform in order to leverage a deep reservoir of analytics talent centered on Excel and macros. The same staff are being trained in low-and no-code tools and Python to bring them into the next era of data science.

A second is taking an opinionated point of view on filling skills gaps. One organization faced the daunting prospect of competing for data scientists with a large and growing local tech sector. To avoid competing head-to-head for expensive senior talent, they went out of their way to invest in a few strategic senior hires, making them the nucleus of a team optimized for appeal to college hires.

A final pattern is making a virtue of necessity. There is likely a correlation between having a large and growing number of employees and a large and growing need for tech skills. The Home Depot created "*OrangeMethod*," an immersive skills *boot camp* aimed at tapping its 400,000 employees to fill 1,000 plus technology roles.

Focus on Value Discovery, Not Process



Over and over, we've heard "finding the next best step" offered as a bite-sized way to apply artificial intelligence or machine learning or (AI/ML) to have an immediate impact.

Sound advice, but there is a right way to do this and a wrong way. A common mistake is to focus on process steps—rationalizing the enterprise data dictionary, building toward a large-scale platform.

For Dual Leaders, success comes in focusing on value discovery. Regardless of whether the use cases involve making a sale, providing support, or preventing errors and defects, they share one thing in common. They involve a willing partnership between a business or functional domain owner and IT to tackle a discrete problem or opportunity.

Dual Leaders are institutionalizing and scaling this capability.

They are assigning accountability for creating value with data: 78 percent have clearly defined data product owners responsible for turning data into products.

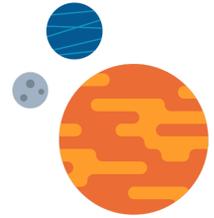
And they are tracking progress and creating a systematic feedback loop: 81 percent have metrics to track the value of data and value creation from data.

Patterns for success: Prioritize "doing"

"Grassroots" efforts can drive progress. One CIO, a strong evangelist for AI/ML in his company, described his strategy this way: "I listen carefully at meetings to find business leaders willing to make a shared commitment. It's not necessarily the most senior person in the room." Each completed project is used as a case study, proving we prove value—which he uses "to be frank, to attract collaboration from people who want to get promoted."

Or, as another forward-leaning CIO told us, "It's harder [for someone] to be an obstructionist when you've already proven the other path works and you've done it for a month."

Modernize the Data Platform



While Dual Leaders have a bias for immediate action toward using data to drive immediate business impact, they are not neglecting investments in their infrastructure.

An overwhelming majority (80 percent) say they are committed to “engineering a modern data stack, piece-by-piece.”

Reducing complexity in their data stack (83 percent) and providing greater operational simplicity (83 percent) are, predictably, widely-shared priorities.

Dual Leaders recognize their focus on infrastructure and the alignment between strategy and technology is not a one-off. It’s an on-going effort that, carried-through, presages even further competitive separation.

Regardless of where any organization is on its digital transformation and data-driven enterprise journey, for most “AI at scale” is accepted as the eventual (for now) destination.

As Harvard Business School’s Marco Iansiti and Karim Lakhani explain in their book *Competing in the Age of AI*, this is likely to further intensify the “winner take all” friendly dynamics we already see in digital competition:

“The value created by a digital operating model can also grow rapidly as learning effects lead to increasing returns to scale. This is where analytics and AI can shine. AI and ML thrive on data, and as machine learning models have evolved, the amount of data they can learn from has increased quickly. As they accumulate data by increasing scale (or even scope), the algorithms get better and the business creates greater value, something that enables more usage and thus the generation of even more data.”

Alongside the prize dangling in front of the leaders, there is a threat looming behind those following behind: don’t fall too far behind or the dynamics of value creation with AI and data will put catching up out of reach.

Today’s Dual Leaders are around 1.5 times more likely than other organizations to see both strategy and infrastructure as a competitive advantage than other organizations. This increases to 1.9 times more likely when compared to just those companies earliest in their journeys (“planning” or “just getting started”).

If your organization is a Dual Leader: keep calm, and carry on. If not: Dual Leaders have blazed the trail and proven patterns for success. Making progress is within your power.

Patterns for success: Embrace technology fit for the “Age of AI”

In *Competing in the Age of AI*, Iansiti and Lakhani make two arguments. First, as the value of data to the business increases, enterprises must excel at managing (and exploiting) data abundance. To do this, they should make the most of the innovation momentum of open source software as well as ferocious capital investment by cloud providers:

“Ultimately, the data, software, and connectivity underlying an AI factory must reside within a secure, robust, and scalable computational infrastructure. Increasingly, this infrastructure is on the cloud, is scalable on demand, and is built using standard off-the-shelf components and open source software.”

Dual Leaders exemplify leaning in to this claim. Today, hybrid cloud is a reality for nearly two-thirds (64 percent); 82 percent are increasing use of open source; and, for 91 percent, data is able to scale with their applications.

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