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Catch them if you can: How leaders in data and analytics have pulled ahead

As data and analytics transform industries at an ever-quicker pace, the strategies and organizational cultures of leading companies offer others a road map for success.

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While it may come as no surprise that data and analytics are reshaping industry competition and organizations' core businesses at an accelerating pace, the persistently lackluster response to this phenomenon by most companies should raise some eyebrows. In our latest McKinsey Global Survey on the topic,[1] respondents say that since our 2017 survey,[2] the changes data and analytics have brought to their industries are growing in both magnitude and scope. Yet they also indicate that many of their companies are still responding to these shifts with ad hoc initiatives and one-off actions, rather than through long-term strategic adjustments that are required for sustainable success in an evolving business environment.

The survey suggests that companies still dragging their feet do so at their own risk, because the gap between leaders and laggards just keeps growing. According to the results, companies with the greatest overall growth in revenue and earnings receive a significant proportion of that boost from data and analytics. Respondents from these high-performing organizations are three times more likely than others to say their data and analytics initiatives have contributed at least 20 percent to earnings before interest and taxes (EBIT) over the past three years.[3]

How are these leading companies managing to capitalize on data and analytics, and what can other organizations do to catch up? Above all, the responses from high performers indicate that their leaders are creating both data and analytics strategies for the long haul. These organizations are also making data a core part of employees' work flows and mind-sets by educating them as part of a broader effort to build a strong data-driven culture. All the while, they are ensuring that high-quality data and modern technological foundations are in place to support these efforts at scale.

Competitive threats are accelerating—and becoming more diverse

Across industries, respondents see the use of data and analytics increasingly upending the competitive landscape. Forty-seven percent say that data and analytics have significantly or fundamentally changed the nature of competition in their industries in the past three years. While this middling figure indicates we're still in the early days of the shift, it increased a whopping 38 percent since the previous survey. When asked which competitive shifts they're seeing, respondents most often cite new entrants launching analytics-based businesses—as they did previously—but also note that other changes are

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[1] The online survey was in the field from December 6 to December 21, 2018, and garnered responses from 575 C-level executives and senior managers representing the full range of regions, industries, and company sizes. To adjust for differences in response rates, the data are weighted by the contribution of each respondent's nation to global GDP.
[2] "Fueling growth through data monetization," December 2017, McKinsey.com.
[3] We define a high-performing company as one that, according to respondents, has seen annual rates of organic revenue growth and growth in earnings before interest and taxes of 10 percent or more in the past three years.

quickly becoming more commonplace (Exhibit 1). For example, respondents are almost 2.5 times more likely than before to report traditional competitors launching entirely new data and analytics businesses and pooling their data via a shared utility. Forty percent also note that companies are forming data-related partnerships along the value chain, a 91 percent increase from just one year before.

Despite the rise of a range of competitive threats, the results indicate that many companies are still scrambling in their efforts to address them. Four in ten respondents say their companies have only responded to these changes in an ad hoc fashion.[4]

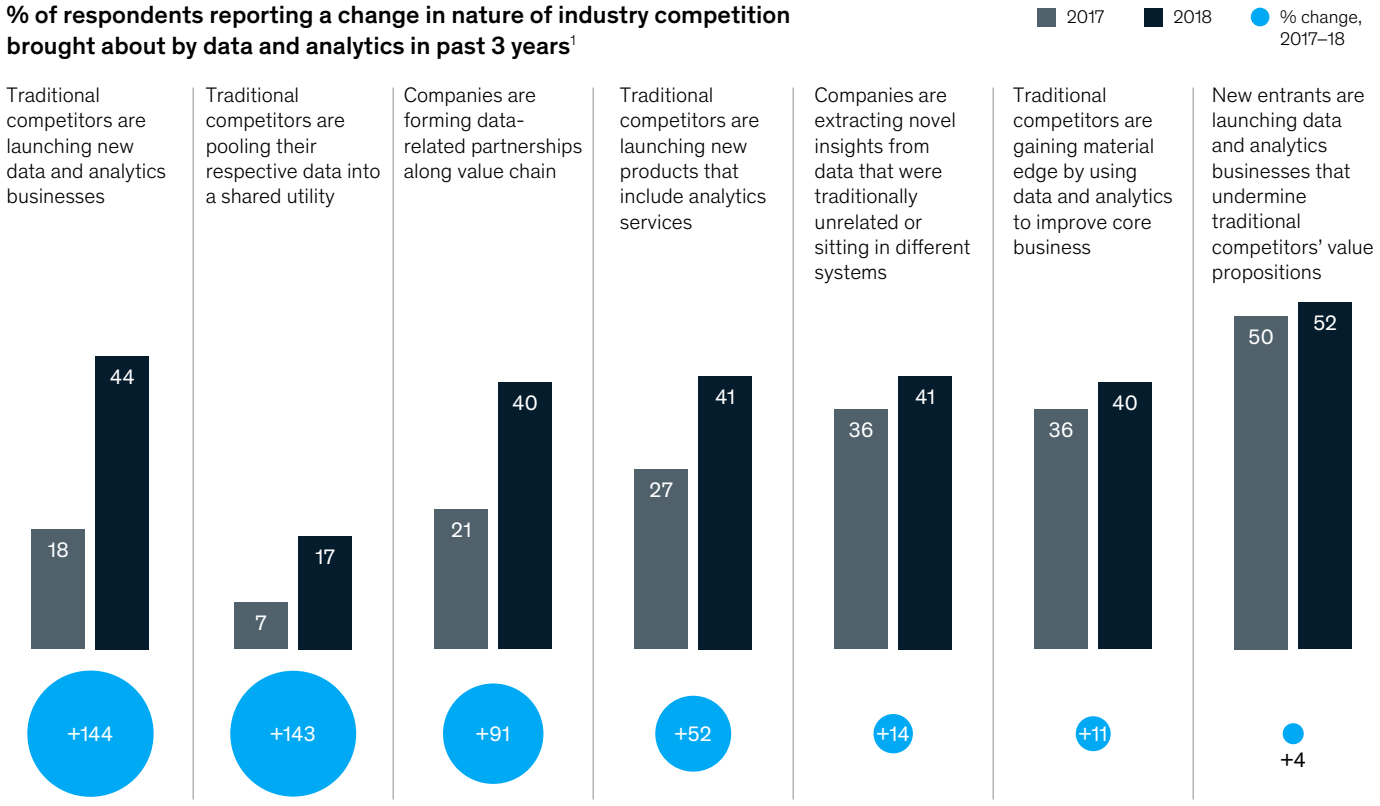
Leaders warm up by crafting an endurance strategy

A thoughtful strategy is, of course, critical to success in nearly any business endeavor, and data and analytics initiatives are no different. But the results highlight the particular perils of responding haphazardly to the competitive shifts driven by data and analytics. Among respondents whose companies have not yet met their data and analytics objectives, a growing share acknowledge that lack of a strategy for these areas is a significant obstacle to success. And in a shift from the previous survey, respondents most often identify the creation of strategy as the most critical element in achieving

Exhibit 1

Since the previous survey, several competitive changes due to data and analytics have become more common.

% of respondents reporting a change in nature of industry competition brought about by data and analytics in past 3 years[1]



[1] Question was not asked of respondents who said data and analytics have not changed nature of competition in their industries in past 3 years, or those who said "don't know." In 2017, n = 496; in 2018, n = 548.

[4] Another 6 percent of respondents say their companies have not yet begun to address the competitive shifts due to data and analytics.

their companies' objectives (Exhibit 2). Of those at companies that have met their objectives, 21 percent of respondents rank having a strategy for data and analytics as their number-one key to success—up from 14 percent in the last survey.

A look at the high performers' practices underscores the importance of strategy. Respondents at these companies are more likely than before to rank strategy as the primary reason for their success, with nearly three in ten doing so, up from 15 percent in the last survey. Indeed, respondents from high-performing companies are 57 percent more likely than their peers to report altering their long-term strategy in response to data and analytics; in the previous survey, they were just as likely as those at non-high-performing companies to do so. The high performers also understand the value of implementing a formal strategy that aligns activities among data, analytics, and the business: 60 percent of them

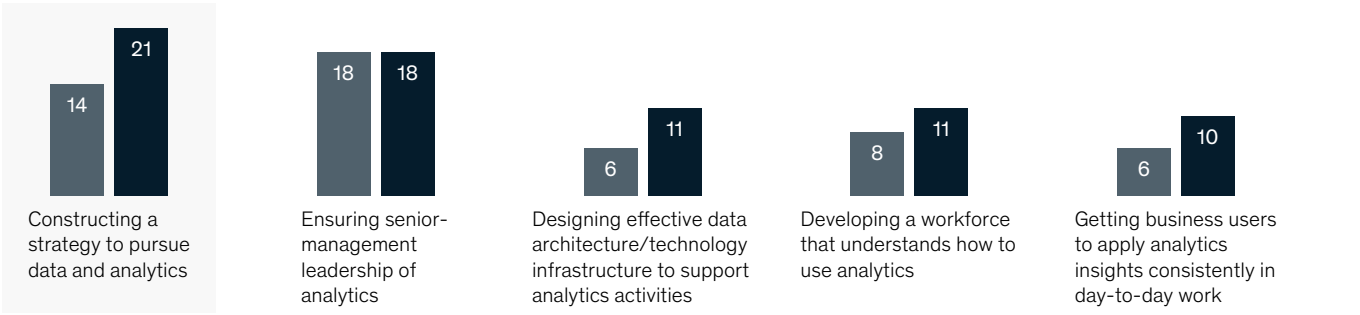
Exhibit 2

The creation of a strategy now ranks as the number-one challenge to—and reason for—companies' success at data and analytics.

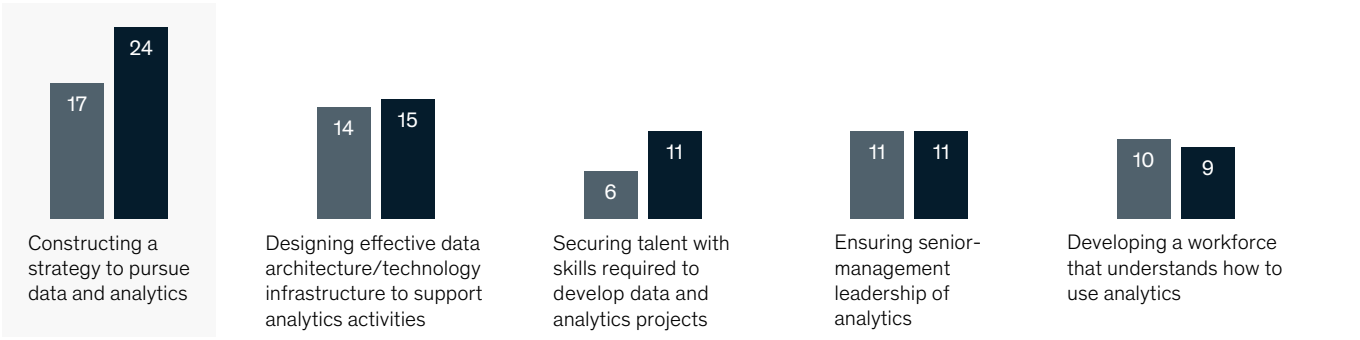
Most significant actions that influence data and analytics outcomes,[1]
ranked 1st, % of respondents

2017 2018

Contributors to success with data and analytics (asked of those who reported being effective at meeting objectives)



Challenges to success with data and analytics (asked of those who reported being ineffective at meeting objectives)



[1] Out of 12 actions that were presented as answer choices. Respondents who said their organizations have been ineffective at meeting their primary data-and-analytics objectives were asked which actions posed the most significant challenges; in 2017, n = 146; in 2018, n = 147. Those who said their organizations have been effective were asked which actions contributed most significantly to that effectiveness; in 2017, n = 274; in 2018, n = 304.

say these strategies are mostly or completely aligned, compared with just 44 percent at other companies.

Leaders build strength through a powerful data culture

While a focus on strategy is important, the results indicate that another key to success is creating a data culture, or a set of practices that brings together data talent, tools, and decision making so that data become the default support for company operations.[5] We asked about ten best practices that help establish a data culture, and the high-performing companies are ahead of their peers in adopting and implementing all but one of them.

Of the ten practices, respondents across companies contend that the most critical is having employees consistently use data as a basis for their decision making. Those from the companies that have succeeded in implementing this are nearly twice as likely as others to report reaching their data and analytics objectives and nearly 1.5 times more likely to report revenue growth of at least 10 percent in the past three years.

The greatest differences in implementation of certain data practices between high performers and other companies provide further clues about which practices matter most. For example, respondents at high-performing organizations are much more likely to report having a data leader in the C-suite, making data and self-service tools accessible to frontline employees, and creating an organizational culture that supports rapid iteration and tolerates failure (Exhibit 3).

Exhibit 3

The data practices that most differentiate high performers from others involve data leadership in the C-suite, broadly accessible data, and a culture that tolerates failure.

Current data practices at respondents' organizations,[1]
% of respondents

[1] Out of 10 practices that were presented as answer choices. For respondents at high-performing organizations, n = 170; for all other respondents, n = 405.
[2] Respondents who said their organizations (a) have had an average annual organic growth rate of 10% or more over past 3 years and (b) have had an average annual growth rate in earnings before interest and taxes of 10% or more over past 3 years.

[5] Alejandro Díaz, Kayvaun Rowshankish, and Tamim Saleh, "Why data culture matters," *McKinsey Quarterly*, September 2018, McKinsey.com.

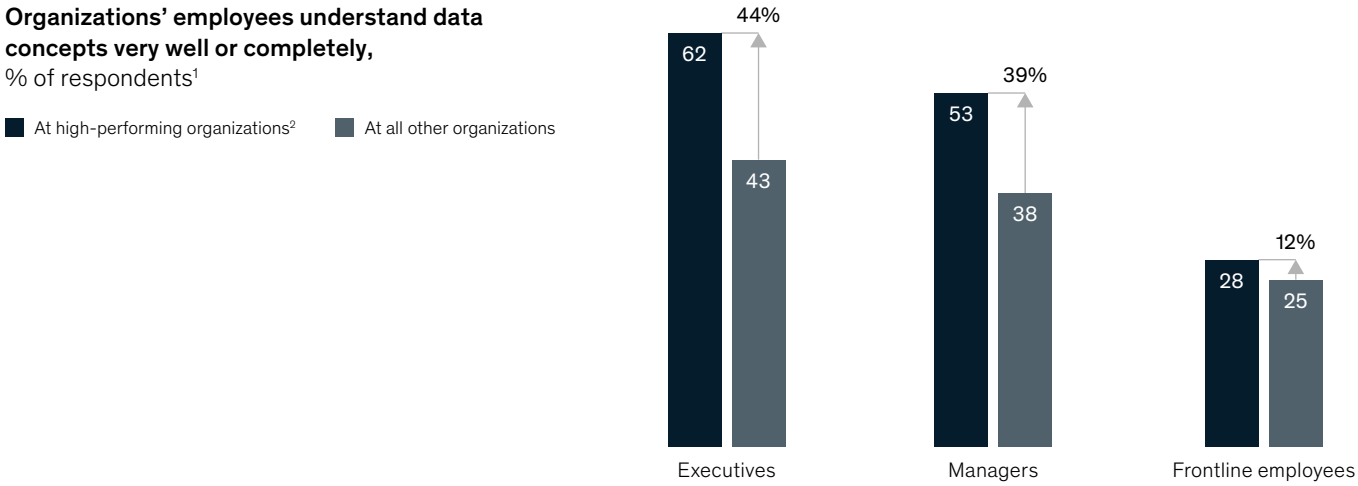
Education also is a key differentiator, as developing a workforce with both data and analytics knowledge is among the top five challenges to reaching a company's objectives. Where respondents say their organizations struggle to encourage daily data use, those at the non-high-performing companies are twice as likely as high performers to attribute this to a lack of company-wide education on data topics. They are also less likely than the high performers to say that employees at all levels—executives, managers, or those on the front line—are educated on data topics (Exhibit 4).

Another aspect of creating a data culture is attracting and retaining the best talent, cited as a pressing need by respondents at the high-performing organizations as well as other companies. As in the previous survey, companies' biggest talent needs are business users with analytics skills, while respondents outside the C-suite also cite a need for more data scientists and translators.[6] And while automation is becoming more prevalent in all aspects of digital life,[7] management of the data driving these changes is still largely a human-run activity—further underscoring the need for great data talent. Over half of respondents report that their companies' key data-management processes—from ingesting and cleaning data to tracking data quality, reporting, and visualization—are at most somewhat automated.

Exhibit 4

At high-performing organizations, employees at all levels are better educated on data concepts.

Organizations' employees understand data concepts very well or completely,
% of respondents[1]



[1] For respondents at high-performing organizations, n = 170; for all other respondents, n = 405.
[2] Respondents who said their organizations (a) have had an average annual organic growth rate of 10% or more over past 3 years and (b) have had an average annual growth rate in earnings before interest and taxes of 10% or more over past 3 years.

[6] We define "translators" as employees with both technical and domain expertise.
[7] For more information, see "Harnessing automation for a future that works," McKinsey Global Institute, January 2017, on McKinsey.com; and "Skill shift: Automation and the future of the workforce," McKinsey Global Institute, May 2018, on McKinsey.com.

One additional feature of a data-driven culture is ensuring that the company's underlying technology can support its efforts in exploiting data and analytics. According to the results, the high-performing companies are much more likely than their peers to have deployed a modern data architecture (Exhibit 5). In fact, data architecture is the second-highest-ranked challenge (after strategy) to reaching a company's data and analytics goals.

We know from experience that a robust data architecture allows organizations to support the rapid collection and sharing of data that enables frontline employees to access and utilize the data they need.[8] It also helps to establish and maintain the high levels of data quality required to support effective data-based decision making. Our results bear out the important role data quality plays in driving analytics adoption: high-performing respondents report better data quality than their peers at other companies, and across respondents, low data quality was the factor most often cited as the biggest impediment to getting employees to use data consistently for decision making.

Looking ahead

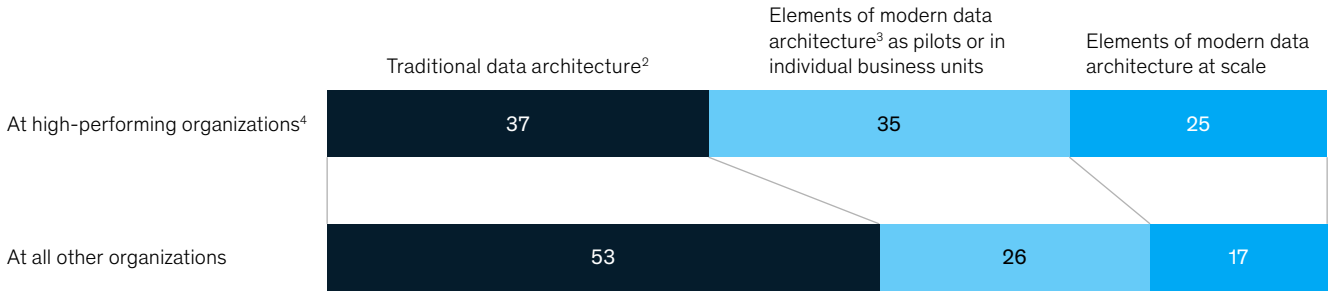
The survey results show that high-performing organizations are outdoing others in achieving their data and analytics goals and using strategy and a strong data culture to distance themselves from competitors. For executives at all other companies, here are some steps to take to improve the use of data and analytics—and catch up with the leaders before it's too late:

— *Make data available.* The survey points to the importance of getting data out of silos and into advanced-analytics-based tools, as well as into the hands of decision makers and even external partners across the supply chain. To do this well often requires reconfiguring organizational processes to allow the rapid sharing of data, for example, by setting up a data marketplace; building technical infrastructure; making use of automation to identify, catalog, and manage data at scale; and employing common querying and visualization tools across the enterprise to support widespread data use.

Exhibit 5

The deployment of a modern data architecture, which supports data- and analytics-related efforts at scale, is more common among high-performing companies.

Organizations' current deployment of data architecture, % of respondents[1]



[1] For respondents at high-performing organizations, n = 170; for all other respondents, n = 405. Respondents who said "don't know" are not shown.
[2] Eg, relational database management systems.
[3] Eg, Hadoop, Spark, nonrelational databases/NoSQL.
[4] Respondents who said their organizations (a) have had an average annual organic growth rate of 10% or more over past 3 years and (b) have had an average annual growth rate in earnings before interest and taxes of 10% or more over past 3 years.

[8] Mikael Hagstroem, Matthias Roggendorf, Tamim Saleh, and Jason Sharma, "A smarter way to jump into data lakes," August 2017, McKinsey.com.

— *Treat data as a product with real return on investment.* Business leaders often view data as a raw material that supports analytics and decision making. Instead, they should treat data as an internal product to be packaged and distributed to groups across the enterprise, and manage it as such. Just as a consumer-product manager's remit is to create multiple revenue streams across channels, segments, and markets, the owner of each data domain should serve as the data product manager, with his or her performance tied to revenue, satisfaction, quality and other similar measures.

— *Take an agile approach to data transformation.* While our high-performing companies have adopted data-culture practices more often than other survey respondents, it's important to note that fewer than half of all respondents report adopting each of the ten top practices of data culture that we asked about.[9] Even high performers have room to grow. While nearly two-thirds of respondents at high-performing companies say their companies report effectiveness at encouraging employees to use data for making daily decisions, only 13 percent say they were very effective. Rather than tackle this gap all at once and risk creating large-scale disruptions, companies must focus on evolving their data cultures and competency incrementally. They can do so by ensuring that new and existing hires are educated in the use of data and analytics and by consistently communicating from the C-suite the importance of applying these tools every day.

The survey content and analysis were developed by **Josh Gottlieb**, a practice manager in McKinsey's Houston office, and **Allen Weinberg**, a senior partner in the New York office.

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[9] In addition to the five practices shown in Exhibit 3, these include data being used consistently as a basis for decision making, regular discussions taking place between company leaders and the leaders of data initiatives, an individual or team being clearly accountable for overseeing the organization's data (that is, quality and provisioning), a set of self-service tools for manipulating and visualizing data being available to employees across the organization, and the organization providing company-wide education on data-related topics.