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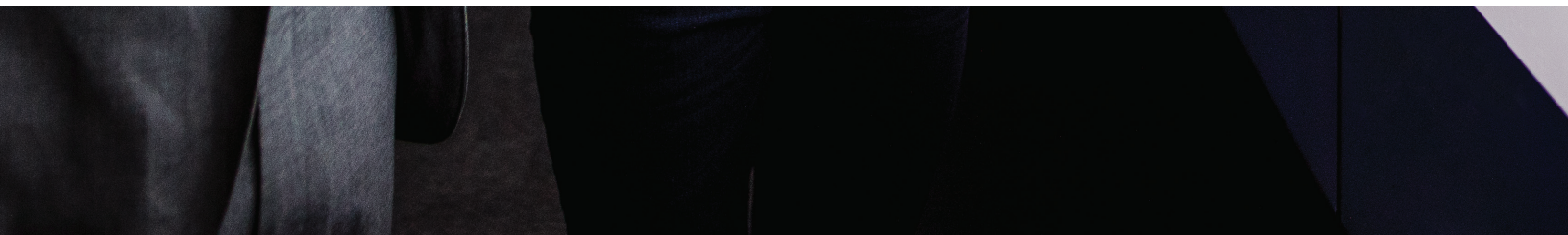
The Association of Accountants and Financial Professionals in Business

How to Embrace Data Analytics to Be Successful



About IMA® (Institute of Management Accountants)

IMA, named 2017 and 2018 Professional Body of the Year by *The Accountant/International Accounting Bulletin*, is one of the largest and most respected associations focused exclusively on advancing the management accounting profession. Globally, IMA supports the profession through research, the CMA® (Certified Management Accountant) program, continuing education, networking, and advocacy of the highest ethical business practices. IMA has a global network of more than 100,000 members in 140 countries and 300 professional and student chapters. Headquartered in Montvale, N.J., USA, IMA provides localized services through its four global regions: The Americas, Asia/Pacific, Europe, and Middle East/India. For more information about IMA, please visit www.imanet.org.

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Executive Summary

Many organizations have started on the path to implementing a data-driven culture, believing that implementing leading-edge analytics is a key to their success. Yet achieving this goal requires the presence of a number of attributes. Our study presents six key factors for successfully establishing a data-driven organizational culture:

- Having the right tone at the top—getting support for analytics from top executives.
- Having strategies for effective uses of technology.
- Having a commitment to developing and using data, from both internal and external sources, to support analytics efforts.
- Using monetary and nonmonetary rewards to promote analytical decision making.
- Having a willingness to adequately provide resources to the analytics efforts.
- Ensuring alignment of analytics efforts throughout the organization.

Introduction

Most organizations believe that implementing leading-edge analytics is a key to their success, yielding benefits such as driving down costs, improving decision making, and maximizing customer value. "Analytics will define the difference between the losers and winners going forward," said Tim McGuire, director emeritus at McKinsey & Co., in a 2013 interview on a trend emerging at that time.[1]

But the challenges of data analytics implementation are manifold. Like many enterprise-wide transformations, data analytics can't be just an IT project. Rather, it's an initiative that affects the entire organization. Successful implementation of analytics requires an organization to establish a data-driven culture.

Our previous report, "The Data Analytics Implementation Journey in Business and Finance," noted that organizations are beginning to harness the power of leading-edge analytics in order to maintain their ability to compete and, perhaps, gain an edge over their competitors.[2] Substantial benefits can be achieved from applying sophisticated analytics to areas such as operational decision making and strategic planning. As a result, an increasing number of organizations are determined to become data-driven.

The achievement of this goal and the attainment of related benefits, however, is not assured. In this follow-up report on the implementation of analytics in business and finance, we focus on the critical factors for successful deployment of leading-edge analytics. Our findings

[1] "Making data analytics work: Three key challenges," March 2013, www.mckinsey.com/business-functions/digital-mckinsey/our-insights/making-data-analytics-work.

[2] Raef Lawson, Toby Hatch, and Denis Desroches, "The Data Analytics Implementation Journey in Business and Finance," IMA, January 2019, www.imanet.org/insights-and-trends/the-future-of-management-accounting/the-data-analytics-implementation-journey-in-business-and-finance?ssopc=1.

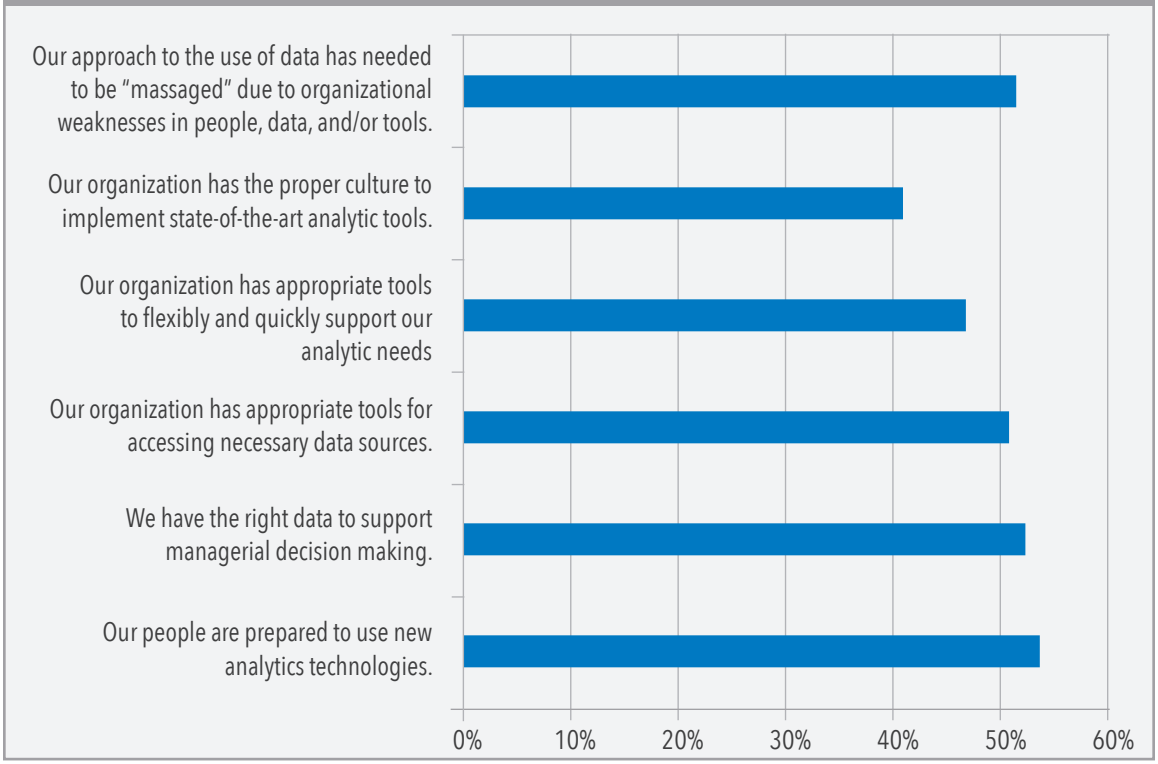
are based on a recently conducted (January-February 2018) survey for which we received 170 responses—121 from a global survey of IMA® (Institute of Management Accountants) members, the balance from direct mail and social media solicitations. Results presented here are based on the responses to that survey.

Critical Success Factors in Establishing a Data-Driven Organization

What are the necessary attributes of a company looking to develop advanced analytical capabilities and become a data-driven organization? A Bain study identified four important elements: data-savvy people, quality data, state-of-the-art tools, and processes and incentives that support analytical decision making (i.e., organizational intent).[3]

As Figure 1 indicates, many organizations attempting to adopt leading-edge analytics face challenges in achieving each of these elements. The results across all four are quite consistent: Only about half of the respondents feel that they have the right tools, culture, data, and people to support managerial decision making through the use of analytical technologies.

Figure 1: Organizational Readiness for Analytical Decision Making (Percent of Organizations Agreeing or Strongly Agreeing)



[3] Rasmus Wegener and Velu Sinha, 2013, "The value of Big Data: How analytics differentiates winners," Bain & Company, Inc., September 17, 2013, www.bain.com/insights/the-value-of-big-data/.

While much has been written about the tangible elements (i.e., people, data, and tools) of a successful data-driven organization, less attention has been paid to the fourth factor—organizational intent.[4] It might, perhaps, be the most important of the four; an organization overtly committed to the goal of being data-driven will work to develop the people, data, and tools needed to accomplish that objective.

Mexican medicine distributor Grupo Fármacos Especializados is using analytics to help bring specialty medicines to market faster, with greater reliability and at a lower cost structure than its competitors.[5] The bankruptcy of a large competitor created an opportunity to acquire substantial market share. Rather than going into a price war against its remaining competitors, Grupo Fármacos developed an analytics-oriented business strategy with a focus on delivering the highest levels of service possible while maintaining the lowest operating costs. The company implemented a new cloud-based enterprise resource planning (ERP) system and used data from it to create real-time forecasting models that it shares externally with its customers and drug laboratory partners. Sharing these forecasts externally allowed customers to make real-time adjustments to their orders and helped laboratories to make changes to the types and quantities of medicines that they needed to produce.

Organizational intent to be data-driven requires creating structures, processes, and incentives to support analytical decision making. The Bain study notes, "Leading companies embed analytics into their organizations by resolving to be data driven and defining what they hope to accomplish through their use of Big Data. The CEO and top leadership team need to describe how analytics will shape the business's performance, whether by improving existing products and services, optimizing internal processes, building new products or service offerings, or transforming business models. Top-performing organizations do this well, often building their organizations around data and a commitment to make data-driven decisions."

In this global study, we focused on organizational intent, looking at:

- Organizational views of the importance of using leading-edge analytic techniques and technologies to guide decision making.
- Organizational alignment with leading-edge analytic techniques and technologies.
- Organizational preparedness to use leading-edge analytic techniques and technologies.
- Organizational barriers to adopting leading-edge analytic techniques and technologies.

Our study identified six key factors for establishing a data-driven organizational culture:

- Having the right tone at the top—getting support of analytics from top executives.
- Having strategies for effective uses of technology.
- Having a commitment to developing and using data, from both internal and external sources, to support analytics efforts.

[4] See, for example, Kip Krumwiede, "Building a Team to Capitalize on the Promise of Big Data," IMA, January 2016, www.imanet.org/insights-and-trends/technology-enablement/building-a-team-to-capitalize-on-the-promise-of-big-data.
[5] Sasha Banks-Louie, "Grupo Fármacos Enlists Cloud Analytics To Grab Market Share, Lower Operations Costs," July 25, 2016, Forbes, www.forbes.com/sites/oracle/2016/07/25/grupo-farmacos-enlists-cloud-analytics-to-grab-market-share-lower-operations-costs/#416348241455.

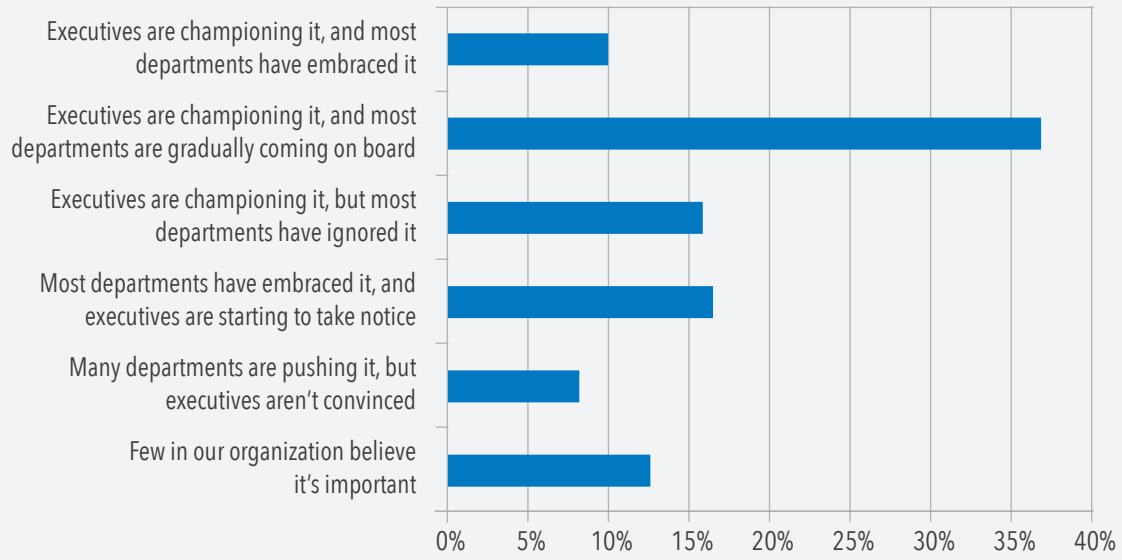
- Using monetary and nonmonetary rewards to promote analytical decision making.
- Having a willingness to adequately provide resources to the analytics efforts.
- Ensuring alignment of analytics efforts throughout the organization.

In this report, we examine the importance of each of these factors.

Setting the Right Tone at the Top

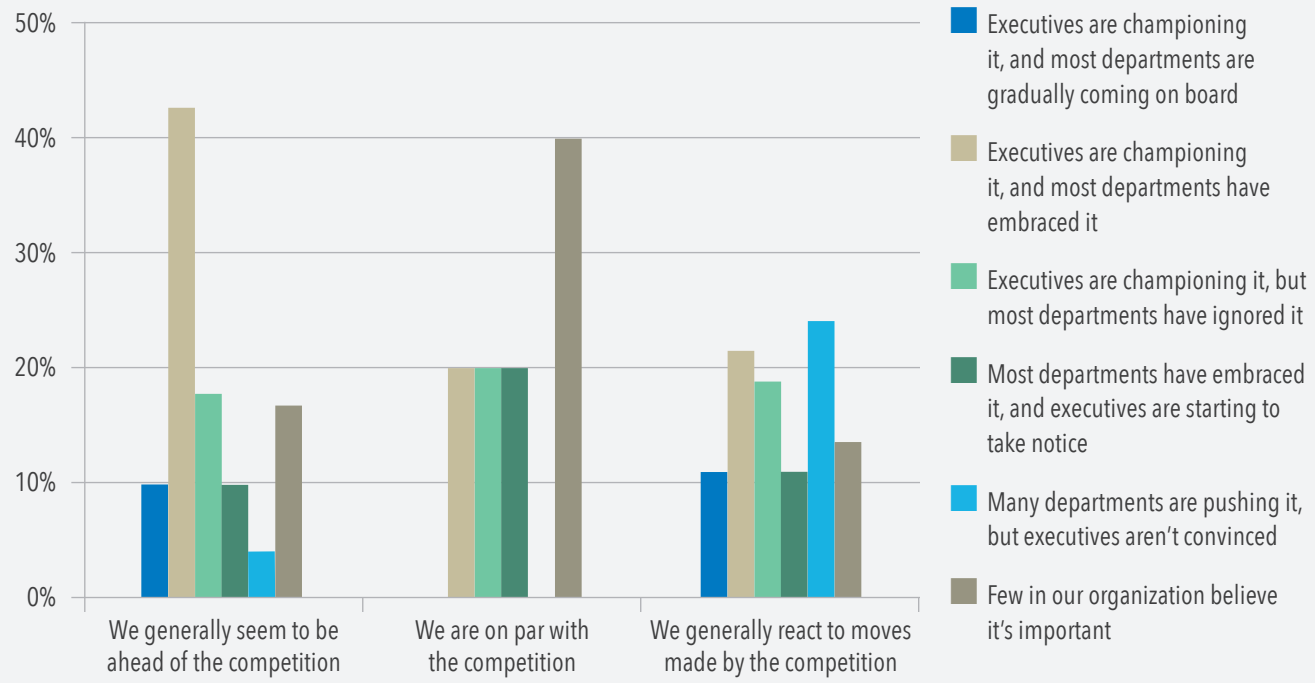
Setting the right tone at the top is critical for most organizational initiatives, and when attempting to foster a data-driven culture, the situation is no different. Encouragingly, in most organizations (63%), top executives are the ones championing the use of leading-edge and Big Data-driven analytics, although, in some organizations (25%), departmental managers have been first to embrace it (see Figure 2).

Figure 2: What Is Your Organization's Attitude Toward Leading-Edge and Big Data-Driven Analytics?



The right tone at the top is critical for establishing an organizational culture committed to data-driven decision making. This in turn enhances key organizational competencies, including the ability to make strategic decisions. Companies that are ahead of the competition in their ability to develop and execute strategy are more than twice as likely to have their analytics efforts championed by executives (see Figure 3). Organizations that understand how to leverage data view enhanced data analytics techniques as the next logical iteration of an already tested methodology and can build on that competency to be even more competitive.

Figure 3: Relationship between Analytics Champion and Organizations' Strategic Abilities



Facing one of the smallest budgets for player salaries of any team in baseball in 2002, the Oakland A's were in a bind. Billy Beane, the team's general manager, was fed up with his inability to outbid other teams for good players. He reached out to Paul DePodesta, a Harvard alumnus with a background in economics, who is now the chief strategy officer of the Cleveland Browns. Together they used advanced analytics to reevaluate how the team was scouting talent.

They mined decades of data on hundreds of individual players in order to figure out the best strategy for recruiting players. Their analysis revealed that baseball scouts were overlooking statistics that could accurately predict how many runs a player would score. Beane realized that players who scored highly on those statistics were probably undervalued by the market and began seeking out these "bargain" players. Despite pushback from his scouts, Beane deployed a radical new strategy for acquiring players based on analytics, and his efforts paid off. The A's started to win, even against baseball teams that had much larger budgets. The A's became the first American League team in more than 100 years of baseball to win 20 consecutive games.[6]

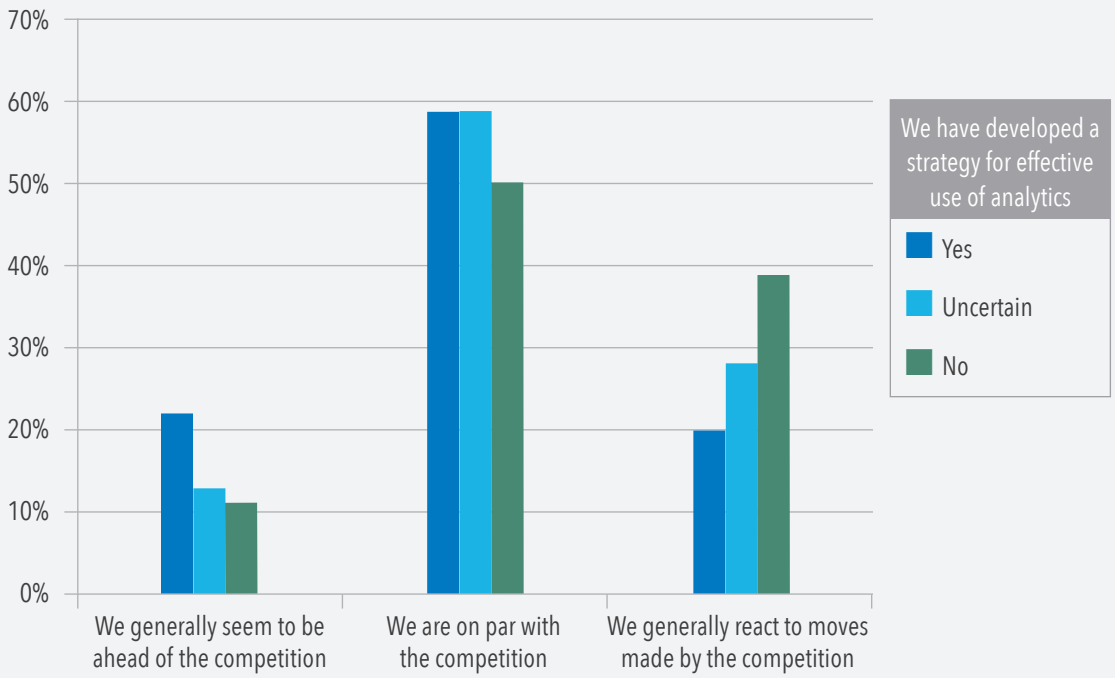
Strategies for Effective Use of Technology

Only about a third (33%) of organizations believe that they have developed strategies for effective uses of leading-edge analytic techniques and technologies. A greater number (40%) believe they have not developed such strategies, with the rest uncertain. The ability to effectively

[6] Mark Adams, "The Man Behind Moneyball: The Billy Beane Story," Domo, February 24, 2015, www.domo.com/blog/the-man-behind-moneyball-the-billy-beane-story/.analytics-success-stories-an-inside-look.html.

use leading-edge analytic techniques is important for a variety of reasons, including the effect that using analytics has on the company's ability to develop and execute its strategy. Companies whose decision making is reactive to the competition are less likely to have developed strategies for the effective use of leading-edge analytic techniques and technologies (see Figure 4). Being reactive instead of proactive means that these organizations lack the ability to predict trends or to turn customer data into useful insights that can be used to improve service, products, and overall profitability.

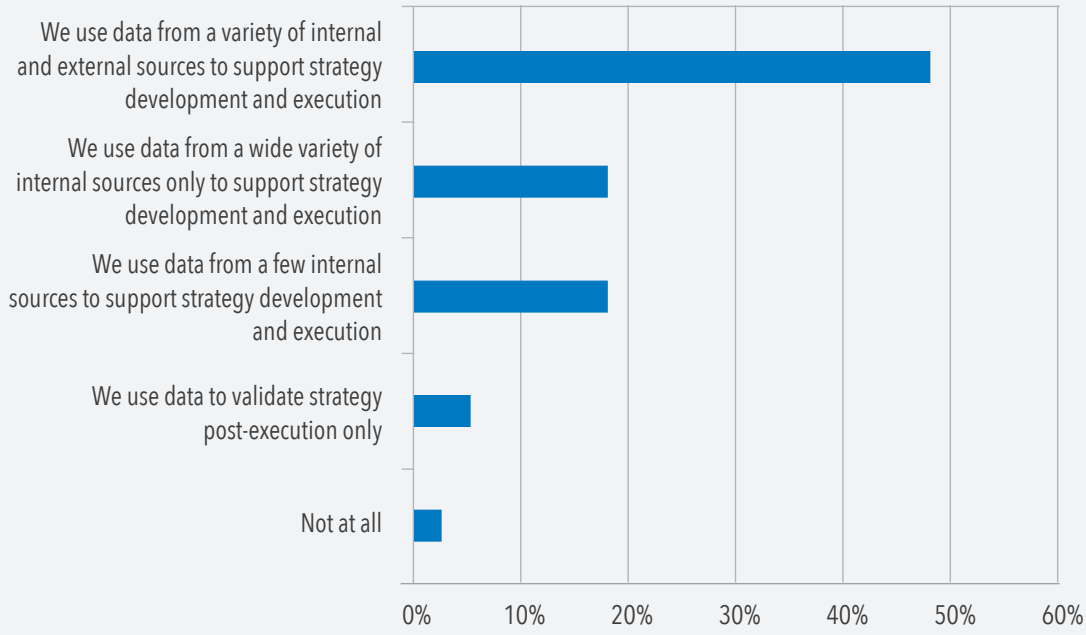
Figure 4: Development of Strategies for Effective Use of Analytics vs. Ability to Develop and Execute Strategy



Data Is Key

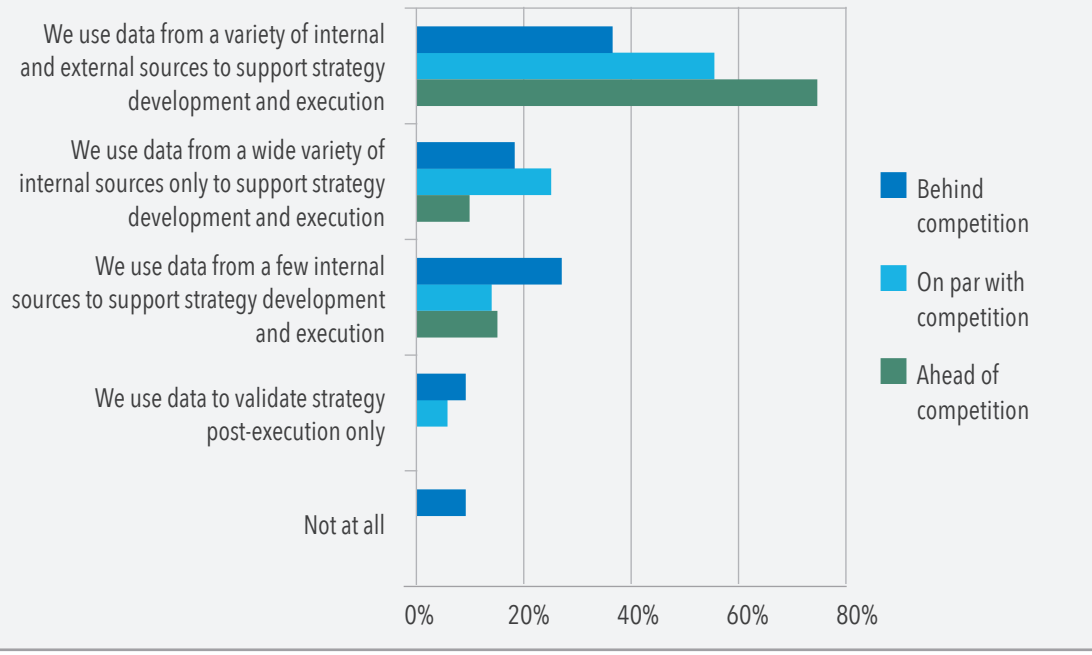
To harness the potential of leading-edge analytics, organizations should utilize a wide variety of data sources. This is especially true when it comes to strategy development and execution. In this regard, about half (52%) of organizations use data from both internal and external sources. While this is encouraging, it's troubling that the other half of organizations are either only using internal data (40%), only using data to validate strategy post-execution (6%), or not using data at all (3%) when developing and executing their strategy (see Figure 5). A diversity of data sources yields better insights and can help temper biases. Organizations that truly want to derive value from their data must be comfortable with complexity and remain flexible enough to respond to what the data reveals.

Figure 5: Uses of Data to Develop and Execute Strategy



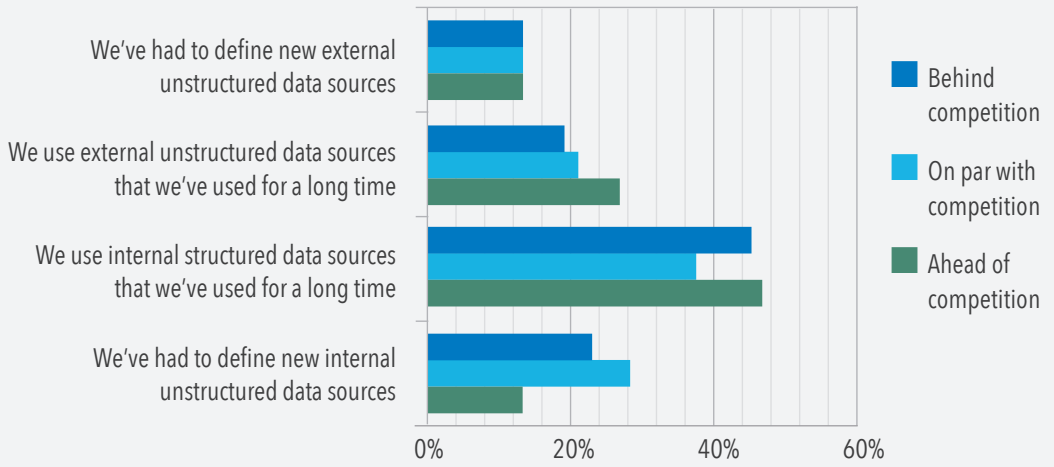
Going through the effort of augmenting internal data sources with external ones for the development and execution of strategy is critical to the success of organizations. Those that do so are more likely to find themselves ahead of their competition in their ability to glean actionable insights from analytics to support strategy development and execution (see Figure 6).

Figure 6: Impact of the Use of Data on Ability to Develop and Execute Strategy



There is a large degree of uniformity between the sourcing of data among organizations regardless of their effectiveness in strategy development and execution (see Figure 7). Yet companies that are ahead of the competition in strategy development and execution are more likely to be using existing data, both structured and unstructured, rather than needing to define new data sources. This may indicate that companies focused on strategy development have previously devoted the resources needed to generate the data to support those efforts.

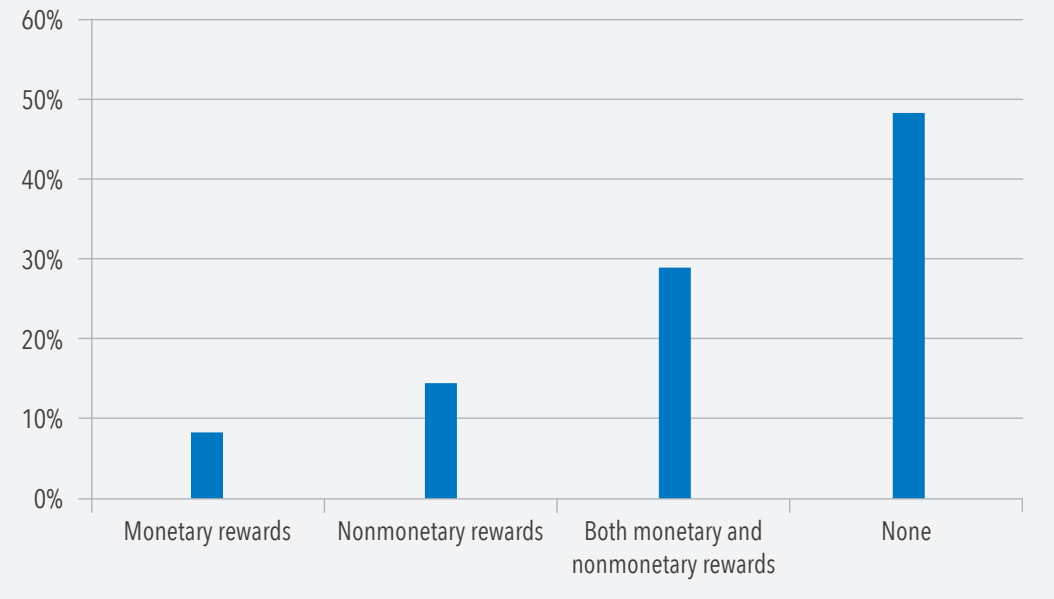
Figure 7: Relationship between Data Sourcing and Effectiveness of Strategy Development and Execution



Incentives

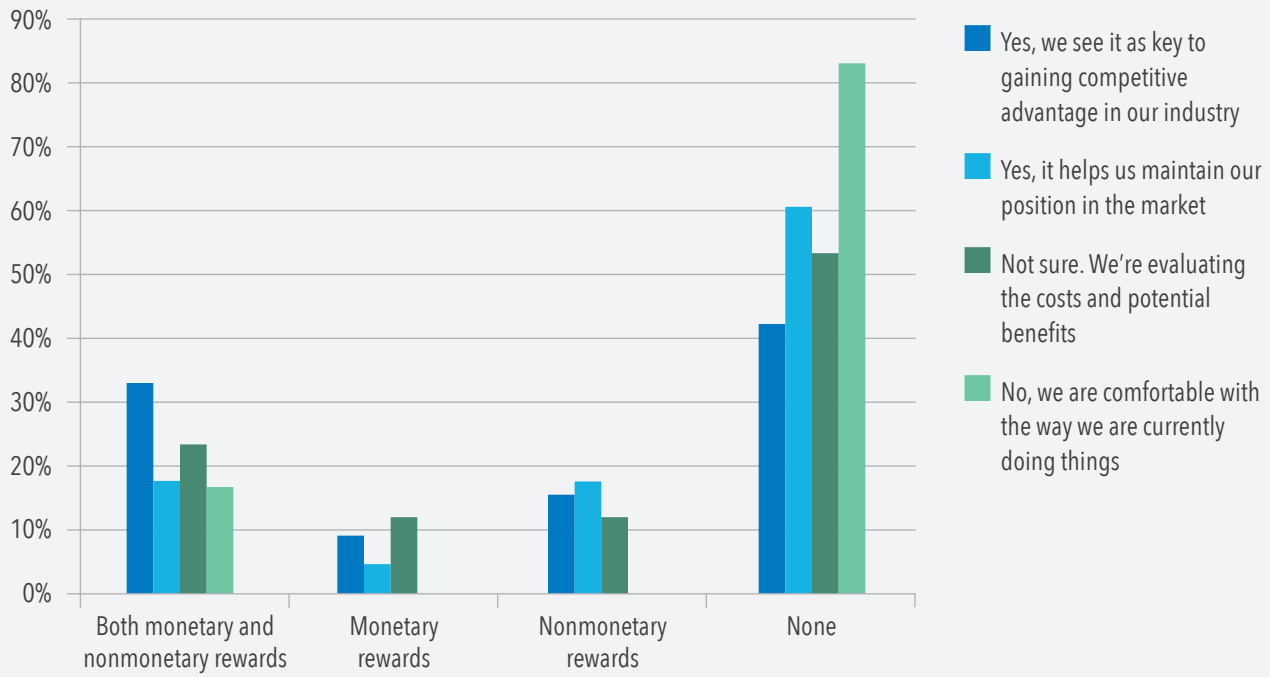
Slightly more than half of organizations are using incentives to promote the use of analytical decision making. These can be monetary, nonmonetary, or both. Yet nearly half of organizations are not doing so (see Figure 8).

Figure 8: What Incentives Are Being Used to Promote Analytical Decision Making?



This is a mistake: A significant factor influencing whether an organization provides such incentives is whether it believes that developing enhanced analytics capabilities is important to its success. Those that do believe in the importance of developing such competencies are more likely to foster an appropriate culture by providing incentives to their employees to promote analytical decision making (see Figure 9).

Figure 9: Relationship between Perceived Importance of Analytics and Incentives



Resourcing Analytics Initiatives

Organizations often face resource challenges when it comes to developing enhanced analytics capabilities: 40% of organizations report resource challenges, while 29% do not, with the remaining 31% being "not sure." By far, the most frequently cited challenge is the ability to recruit staff with the necessary skill set. When asked what challenges they faced, respondents' comments included the difficulty of "finding the correct skill set," their belief that they "don't have the qualified staff or technical skills," and "lack of employee knowledge."

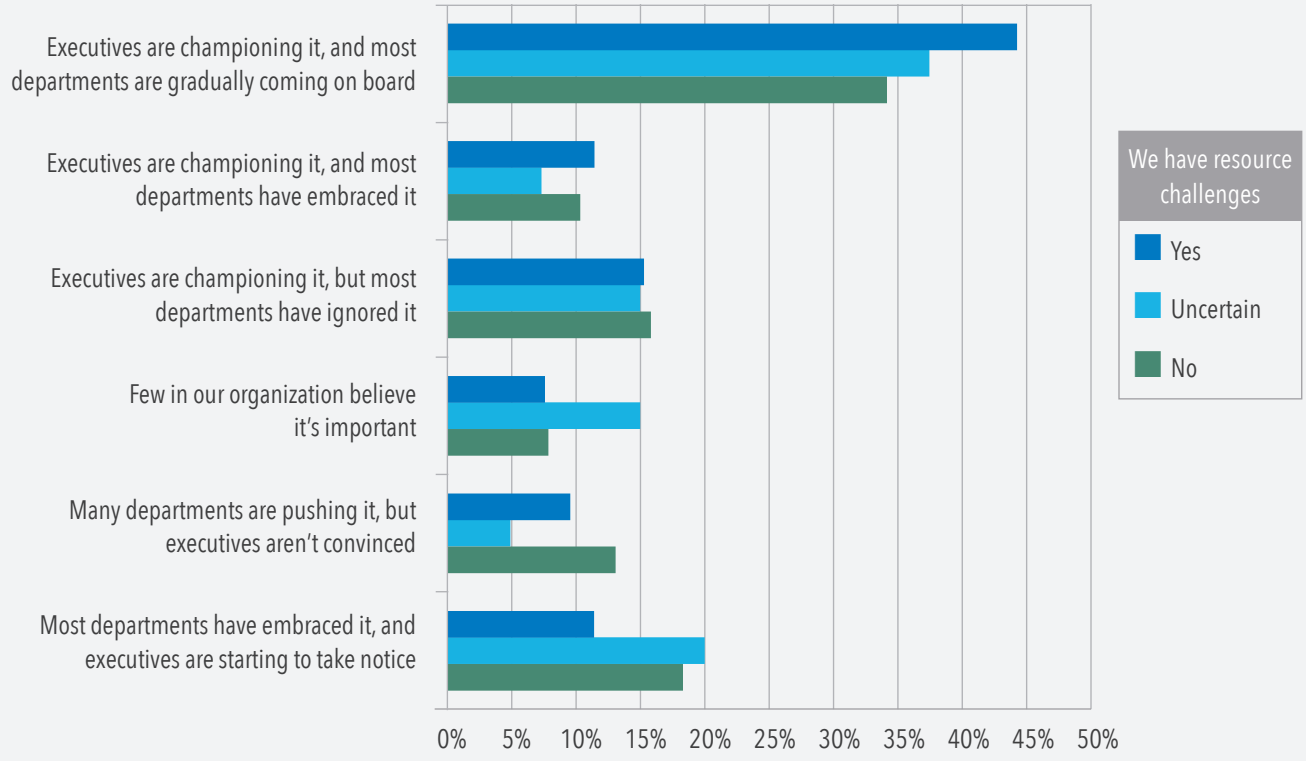
The next-most common resource challenge is budget. Survey respondents provided comments such as "Top management has narrow vision, so it does not provide necessary resources," "It is difficult to get funding to acquire and analyze data," and "Management doesn't want to spend the money on IT resources to implement [analytics]."

The third most common challenge, related to the previous two, is a lack of staffing resources and competing priorities. Respondents stated they were "all overworked," had "competing bandwidth," and that "staff is limited."

Clearly, the four essential elements needed for companies to develop advanced analytical capabilities—data-savvy people, quality data, state-of-the-art tools, and organizational intent—are interrelated.

While it might be expected that, when individual senior executives (vs. entire departments) champion enhanced analytics initiatives, there would be fewer resource challenges, the opposite is true (see Figure 10). It may be that when departments value analytics efforts, they prioritize it and "find" the resources to support it. On the other hand, when executives are championing the initiative, there may be a lack of coordination within the organization to commit the resources that are required to the company's analytics efforts.

Figure 10: Impact of an Organizational Champion on Resource Challenges for Analytics Initiatives

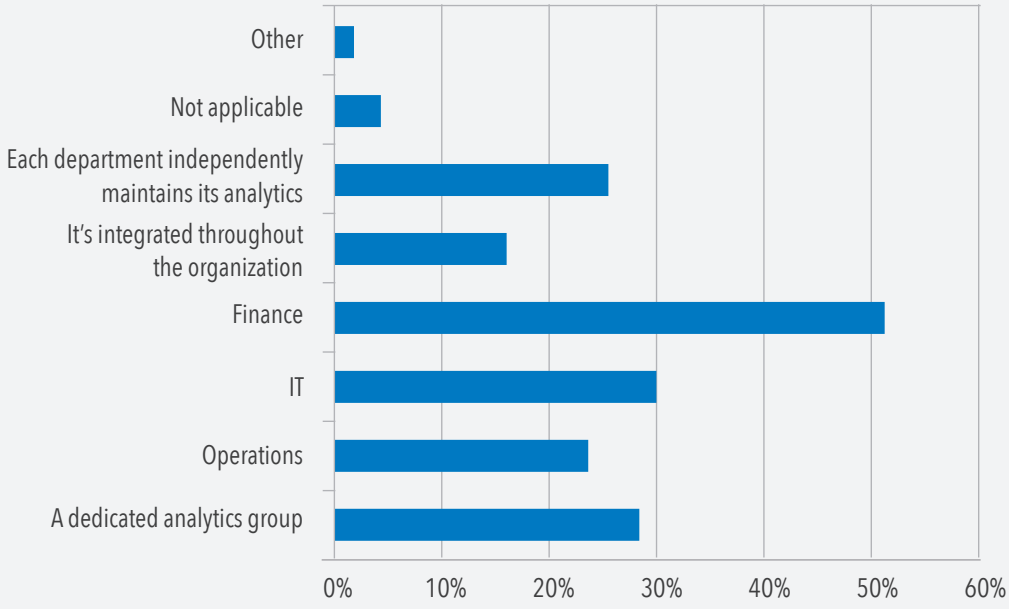


Who "Owns" Analytics?

Responsibility for analytics can reside in various parts of an organization. Some argue that CFOs should "own" analytics as they are "the impartial guardians of the truth…and can use analytics to debunk myths or accepted wisdom that hold the company back."[7] Most companies seem to agree, with finance being an owner (although often not the sole owner) in most companies (51%) (see Figure 11).

[7] Frank Friedman, "Why CFOs Should 'Own' Analytics," CFO, October 29, 2014, ww2.cfo.com/analytics/2014/10/cfos-analytics/.

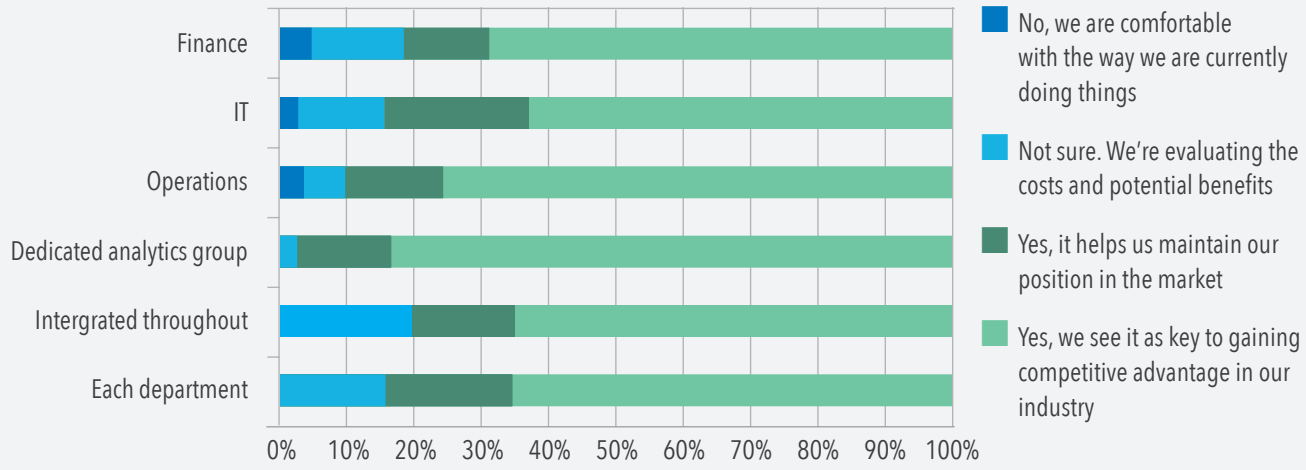
Figure 11: Ownership of Analytics



IT is another popular "home" for analytics, with 30% of companies locating analytics in this department. Other popular options include data being owned by a dedicated analytics group or operations, or having each department independently maintaining its own analytics capabilities. These options are not mutually exclusive, with a variety of possible combinations, the most popular being ownership of analytics shared jointly by finance and IT.

Organizations that see analytics as a tool for gaining a competitive advantage are more likely to have a dedicated analytics group than those that don't (see Figure 12). While relatively uncommon, organizations that are comfortable with their current way of doing analytics uniformly assign ownership to a single operational area, while other companies strive for it to have greater impact by having a dedicated analytics group, integrating analytics throughout the organization, or embedding analytics in each department.

Figure 12: Relationship between Ownership of Analytics and Perceived Importance



Summary

The benefits of implementing a data-driven culture are clear—organizations possessing such a culture more effectively perform key business processes, including strategy formulation, performance evaluation, and more. In implementing a data-driven culture, establishing processes and incentives that support analytical decision making (i.e., organizational intent) is critical.

Our study identified six organizational considerations that are key to establishing a data-driven culture. When venturing onto the path of implementing leading-edge analytics to create a data-driven culture, consider your organization's responses to these questions:

- Does it have the right tone at the top? Do top executives support analytics?
- Does it have strategies for effective use of technology?
- Will it commit to collect and use data from both internal and external sources to develop and support analytics efforts?
- Will it be willing to use monetary and nonmonetary rewards to promote analytical decision making?
- Will it provide adequate resources to its analytics efforts?
- Is it willing to align its analytics efforts throughout the organization?

If the answers to these questions are consistently "yes," your organization's chances of successfully implementing leading-edge analytics and achieving the competitive benefits of a data-driven culture are good. "No" responses to any of these questions should be scrutinized—your organization's ability to successfully deploy analytics is likely to meet resistance. Although the benefits of being data-driven are evident, it's worth doing an honest assessment of the responses to these questions as a prerequisite before evaluating your organization's readiness for establishing a new data-driven culture.

Implementing analytics shouldn't be viewed as "just another IT project." It's a fundamental change in the way that organizations do business. It requires a cultural shift, executive involvement, and buy-in from all business units. Judicious use of analytics is increasingly an essential tool for survival as companies compete in a fierce, on-demand, information-laden world.