

**Deloitte.**

# The Analytics Advantage We're just getting started

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The first few steps of the analytics  
journey hold promise for the long term



*Key findings from Deloitte's Analytics Advantage Survey*

# Dear readers,



I am pleased to share the results of our recent Analytics Advantage Survey, commissioned by Deloitte Analytics to better understand the state of analytics readiness at leading corporations today—and what the future may hold. The survey was conducted using a mix of 100 online questionnaire responses and “deep dive” interviews with senior executives at 35 companies in the United States, Canada, China, and the United Kingdom. Interviews were overseen or conducted by analytics thought leader and author Thomas H. Davenport, a visiting professor at Harvard Business School and independent senior adviser to Deloitte Analytics.

When I read the report, I was not surprised to learn that “slow and steady wins the analytics race.” Smart analytics leaders are overcoming skepticism and gaining executive advocates by first tackling small projects that yield impressive and measurable results. Projects that demonstrate analytics’ ability to improve competitive positioning help these initiatives gain traction across the enterprise.

As the report illustrates, applying analytics to business challenges can help companies achieve new insights, identify opportunities for innovation, and ultimately improve performance. As results from this survey show, in organizations where analytics is most visible, support from senior leaders is also most evident.

I hope you find this report a useful guide as you assess your organization’s analytics maturity today and shape and strengthen your analytics initiatives moving forward.

A handwritten signature in black ink, appearing to read "Tim Phillipps".

**Tim Phillipps**  
*Global Analytics Leader*  
*Deloitte Touche Tohmatsu Limited*

# Introduction

Even under the most supportive circumstances, the application of analytics is a long journey. It can take years to gather data, put the appropriate technologies in place, build the necessary skills, and embed analytical decision-making into key organizational processes. And once this is all done, many wonder whether they have really uncovered all the value their data has to offer?

In many cases, the circumstances are less than supportive. Senior managers may not be enthusiastic about having their intuition replaced—or at least augmented—with analytics. They may simply not understand the value of an analytics initiative. There may be competing priorities for investment dollars. As with any other change program, managers and organizations can resist analytics programs, or at least not fully endorse their adoption.

Any lack of understanding of analytics might be worsened, rather than alleviated, by the onslaught of publicity about big data. As it happens, most large businesses are simply adding big data capabilities—distributed file system technology, open source software, and data scientist skills—to their existing analytical capabilities. But many managers are in doubt about whether they need big data, and what is necessary to obtain value from it. In the case of big data, what should be speeding up the adoption of analytics might actually be slowing it down.

The organizations participating in this broad survey—conducted through interviews and online surveys—are at a variety of positions in their analytical journeys. All by now have one or more believers among the management team. All have executives who believe that the use of analytics is important. There are, however, many other executives who still need to be convinced.

Virtually all of the organizations surveyed are applying analytics to one or more business processes. However, many areas within these businesses remain untouched. The majority of surveyed companies have some form of analytical group, but the level of analytical maturity varies among them. The size of analytics groups within participating companies ranges from one or two analysts to several hundred. In some, the head of the analytics group is an analyst him or herself; in others, it is a C-suite executive. In many cases, internal resources are being augmented with external suppliers of services.

This survey represents a guidepost from which an understanding of analytics can and will move forward. From observations over many years, analytical progress is undeniable: the demand for analytics is much greater, resources are more available, and executive understanding has increased.

If—an unlikely scenario—analytics progress were to cease today, the organizations that have tackled these initiatives would be better off for having done so. More likely, though, as suggested by these survey findings, the application of analytics and its importance will increase in the coming years. This means that competitors can still get ahead. Industries—from airlines to insurance to sports—will rapidly copy analytics innovations and reimagine them yet again. The only way to stay ahead of the competition will be to invest in analytical capabilities, integrating analytics into decisions and processes. As this study reveals, while analytics is already delivering insights that can power innovation for some businesses, the best is yet to come.

## **Thomas H. Davenport**

*Visiting Professor Harvard Business School  
Independent Senior Adviser to Deloitte Analytics*

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**Tom Davenport** is a world-renowned thought leader and executive advisor on analytics. An acclaimed speaker, Tom also is a widely published author, whose most recent book (with Jinho Kim) is *Keeping Up with the Quants: Your Guide to Understanding and Using Analytics*. An information management pioneer, Tom has written or co-authored 16 best-selling business books and more than 100 articles, as well as several strategic business concepts in the areas of knowledge management, human approaches to information management, business process reengineering, and enterprise systems. CIO Insight named his *Competing on Analytics* book one of the “Top 15 Most Groundbreaking Management Books,” and Ziff Davis again included Tom as one of only four IT management thought leaders on their “100 Most Influential People in IT” list.

# Executive summary

In today's complex business environment, the field of data analytics is growing in acceptance and importance. It is playing a critical role as a decision-making resource for executives, especially those managing large companies.

To shed more light on how companies are taking advantage of analytics, Deloitte Analytics commissioned *The Analytics Advantage*, the first in an annual series of surveys focusing on the state of analytics readiness at leading corporations and what the future holds. (See "About the Survey.")

Results were analyzed from a mix of more than 100 online surveys and "deep dive" interviews with senior executives at 35 companies in North America, the United Kingdom, and Asia conducted or overseen by Tom Davenport.

In addition to the growth in importance of analytics and its prospects for the future, other central themes emerged, including the varied ways in which analytics is structured and managed within these enterprises. This signals that the practice of analytics, while progressing as a decision-making resource, remains in its early development stages and will continue to evolve and mature as long as it generates tangible financial benefits for the corporation.

## Key findings

- **Analytics has arrived.** Analytics is already an important competitive resource for many companies, with fewer than 20 percent of respondents stating that analytics does not yet support their corporate strategies.
  - **The best is yet to come.** Ninety-six percent of respondents feel that analytics will become more important to their organizations in the next three years. Two reasons there is plenty of room to grow: a great deal of data is still not used for decision-making; and many organizations have only rudimentary analytical technology.
  - **Better decision-making.** Nearly half of all respondents (49 percent) assert that the greatest benefit of using analytics is that it is a key factor in better decision-making capabilities. Another 16 percent believe that its greatest benefit is better enabling key strategic initiatives. Nearly two-thirds of respondents say that analytics play an important role in driving business strategy.
  - **Marketing and customers.** Surprisingly, only 1 percent of respondents believe that the greatest benefit of using data analytics is identifying and creating new product and service revenue streams, demonstrating its impact on product and service innovation is not yet nearly as noteworthy as in other areas. But its marketing influence is rising, as 55 percent of respondents said their marketing and sales groups invest in analytics second only to finance operations.
  - **Structure is a challenge.** Analytics is managed by a variety of executive roles within companies, and a wide range of functions benefit from analytics. More structure around coordination and alignment is needed to realize the impact and benefits of a company's data throughout the organization.
  - **Key barriers to overcome.** Organizations will be slow to fully capitalize on the potential of analytics unless they are able to overcome several key barriers, of which data management and access to talent are the most problematic.
- In addition to the growth in importance of analytics and its prospects for the future, other central themes emerged, including the varied ways in which analytics is structured and managed within these enterprises. This signals that analytics, while progressing as a decision-making resource, remains in its early development stages and will continue to evolve and mature as long as it generates tangible financial benefits for the corporation.

# The evolution of analytics

Basically, analytics is about making good business decisions. Just giving reports with numbers doesn't help. We must provide information in a way that best suits our decision-makers.

— Director of HR analytics for an entertainment company

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Analytics Advantage Survey results suggest that despite considerable analytical activity within firms, analytics—the practice of using data to manage information and performance—is only at the beginning of its impact as a competitive resource for organizations.

While the reasons for employing analytics capabilities are as varied as the companies and industries using them, respondents agree overwhelmingly on one key point—analytics will continue to grow in importance over the next three years.

Regardless of industry or geography, 96 percent of respondents assert that analytics will become “more important” or “somewhat more important” during the next three years. Equally significant, none of the respondents believes analytics will become less important over that time. Clearly, a data analytics evolution is well underway, and the discipline has, in many cases, established its emergence as a valuable business management tool.

This is consistent with previous experience from Deloitte Analytics, a group of analytics practitioners delivering strategic insights that give decision-makers the information they need to act. Based on thousands of discussions or interviews with corporate executives, Deloitte Analytics has found that corporations and organizations are moving to use big data and analytics to track consumer sentiment, build customer loyalty, gain competitive advantages, and make more effective business decisions. How best to do that and who should ultimately be responsible for managing and maximizing a company's data assets remain variable approaches for many organizations.

According to a senior executive overseeing analytics at a global firm, analytics must be able to do three things: solve a problem, be predictive, and be implementable. As a result, experts from numerous teams and disciplines must engage and smoothly interact to ensure that all of the three tasks are successfully completed.

“Data is very much a part of our lifeblood, and now that our systems and technology have caught up to the need, we are really able to make something out of the data we have,” the senior executive explained. “We've come a long way in the last two years, because we focused on it. A company like ours can accomplish a lot when it focuses.”

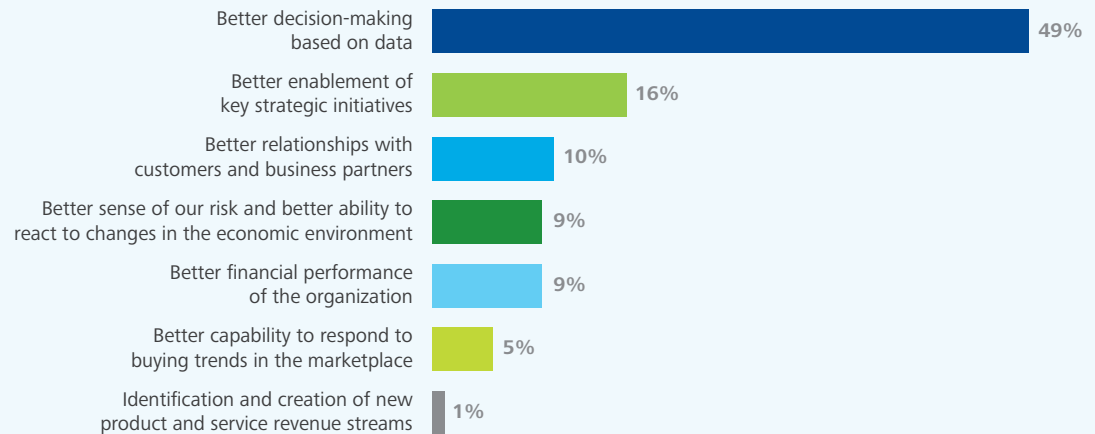
Many companies are focusing more on big data and analytics because they are seeing positive results from trial projects as well as anecdotal evidence from industry colleagues or competitors. Perhaps most importantly, senior executives are realizing that good data can yield good decisions, if captured, analyzed, communicated, and acted upon in a timely and efficient fashion.

And that realization is at the heart of the analytics dilemma, as one or more of those criteria is often missing from an organization's analytical capabilities.

But those who have cracked the analytics code are reaping its rewards.

Nearly half of survey respondents (49 percent) assert that the greatest benefit of using data analytics is that it is a key factor in better decision-making capabilities. That number would likely be higher if organizations had better access or more resources to utilize their data in decision-making circumstances.

## ANALYTICS IS KEY FACTOR IN DECISION-MAKING



The use of data in decision-making has been driven in part by economic necessity. For instance, a respondent from an auto industry company that was broadening its capabilities and reliance on analytics pointed out that the company's "near-death experience" in the aftermath of the U.S. recession motivated some of its leaders to more quickly employ data in decision-making.

Indeed, desperate times call for desperate—or at least new and more promising—measures.

"Our experience was rather trying," said the auto executive, "but it encouraged folks to consider a number of analytic approaches—including scenario analysis and modeling and configuration analytics—that they might not have entertained in better times."

While data analytics is playing an increasingly large role in corporate decision-making in general, it is becoming even more important in driving business strategy. Sixty-two percent of respondents said that analytics played an important role.

About 17 percent of respondents reported that corporate strategy and competitive advantage are "heavily dependent" upon the company's analytical capabilities, while a similar number—19 percent—said that the use of analytics within their industry is "generic" and not closely related to the company's specific strategy.

The remainder lie somewhere in between, reporting that the practice of analytics may generally support corporate strategy but does not provide any competitive advantage (36 percent), or analytics does support corporate strategy and provides "some" competitive advantage (27 percent).

What is clear is that organizations large and small are tapping data to better understand and improve their operations, financial models, customer relationships, supply chain, workforce, business opportunities, and competitive standing. While data may not be replacing common sense and gut instinct as a decision-making tool, it is becoming an irreplaceable strategic weapon in the corporate arsenal.

**There are now enough reasons for us to prove beyond all doubt that what we've always done, based on intuition, isn't the best way to go.**

— Director of planning and analysis  
for a global medical services company

# Analytics capabilities: The sum of the parts

As data analytics gains more attention, corporations and organizations of all sizes and within most industries are pursuing this valuable capability—sometimes cautiously, sometimes with great enthusiasm.

Organizations that lack executive sponsors are traditionally slow to embrace change and are eyeing analytics with more skepticism. In these circumstances, smart analytics leaders are gaining advocates by taking on small, focused pilot projects that are yielding tangible results.

According to one executive in the insurance industry, the driver for the acceptance and growth of data analytics in his organization is to show how big data can help it shift from “experiential decision-making to having confidence that the massive amounts of data that we collect” can be useful in making better decisions.

Most companies begin by dabbling in analytics and becoming good in one or more applications, thereby generating momentum for additional initiatives. Ultimately, analytics is valued if it can be proven that it helps a company become tangibly better—financially or operationally. And indeed, most survey respondents—55 percent—reported that analytics has “significantly” or “fairly” improved the organization’s competitive position.

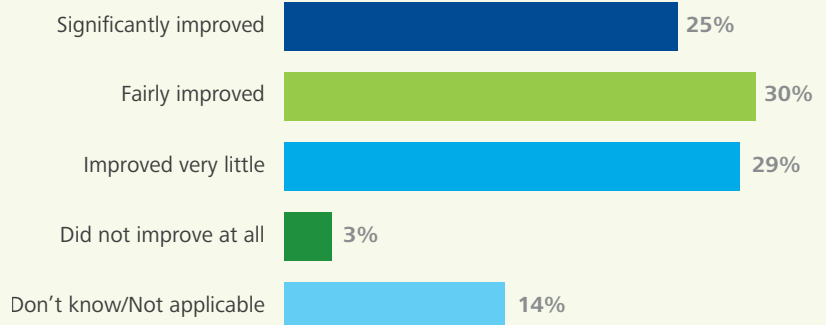
Still, 29 percent reported that analytics improved competitive position only “very little,” and 14 percent do not yet know if analytics is having an impact vis-à-vis the competition.

The fact that none of the respondents predicted less usage of analytics over the next three years suggests that even those without results thus far still have faith.

You have to create impact for the company. You’ve gotta eat the elephant one bite at a time; there’s no other way to do it. That one-step-at-a-time approach to analytics allows us to demonstrate credibility and tangible value.

— Senior business intelligence advisor for a North American financial services organization

## DOES ANALYTICS IMPROVE COMPETITIVE POSITIONING?



### Key findings

Slow and steady wins the analytics race. Smart analytics leaders are overcoming skepticism and gaining executive advocates by:

- Tackling small projects that yield impressive results
- Showing tangible, incremental improvements—financially or operationally
- Demonstrating how analytics improves competitive positioning

# Show me the money

Are big data and analytics worth the significant investment of money, resources, and time for corporations and their leadership?

The answer is yes, with varying degrees of enthusiasm depending on whom you ask within an organization.

Realizing that the majority of survey participants look to analytics to play some role in driving business strategy, we asked them to rank the importance of the discipline in supporting key business functions—including marketplace analysis, supply chain management, and regulatory and risk processes.

Not surprisingly, the areas in which big data and analytics were found to be the most important were those directly related to income production or cost control/reduction.

“Facts and data are driving a lot of our investments, because it’s all about ROI and metrics,” explained a senior risk manager for a commercial real estate management company. “Quantitative analysis enables us to anticipate the future rather than having to react after the event. And that can have a tremendous impact on our financial performance.”

In marketplace-related areas, respondents said that the most important use of data analytics was in “identifying ways to increase sales” (18 percent), followed closely by two other areas that—if mastered—can increase sales: “understanding customer behavior” (17 percent) and “targeting product and service offerings to particular customers” (17 percent). Equally significant was the use of analytics in “identifying innovation and investment opportunities,” as suggested by 17 percent of respondents.

Of course, most companies implementing analytics to boost or optimize their marketing and sales performance are applying the analytics capabilities to numerous customer-centric projects and processes. In some instances, this includes aggregating and dissecting huge amounts of unstructured data generated through websites, call centers, social media, and other consumer-facing resources.

In one example, the chief operating officer for a fast-growing e-commerce business described “customer analytics” as the most important thing his company is doing. Why? Because it enables the firm to better segment existing and prospective customers, allowing for more precise targeting of advertising, pricing, and discount offers.

## Two areas where analytics drives ROI



**Income production**



**Cost reduction**

“Our focus now is on how we can positively change customer behavior,” he said. “We are trying to be an experiential retailer, and that means broadening our product line in certain categories and becoming more analytical about predicting what offers will work, and when.”

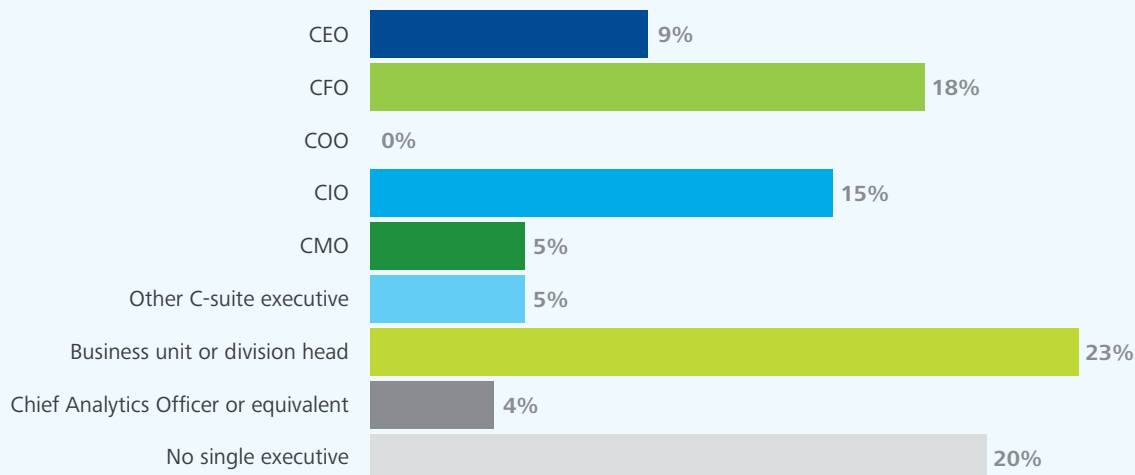
Financial operations have long been data-driven, but the availability of big data and the growth of data analytics capabilities have further heightened its importance. These are no doubt the reasons that the area most often found to invest in analytics, at 79 percent, is finance.

Also, about 18 percent of corporations surveyed report that the Chief Financial Officer is the individual within the organization primarily responsible for analytics, making the CFO the third most common analytics overseer. The most frequent leader of analytics—named by 23 percent of respondents—is the “business unit or division head,” who also typically has significant budgetary responsibility.

It stands to reason that if finance is willing to invest in analytics, there is ROI to be had.



## WHO OVERSEES ANALYTICS INITIATIVES?



**We're really not spending money on data analytics. We're using it to find better alternatives for making money.**

— Database marketing executive for regional bank

"Today, it's not how much more work can (analytics) do within the company, but what should we focus on that gives us the best ROI," noted a customer analytics expert for a global technology company. "Our job is to maximize ROI." This can mean fewer but more impactful data analytics projects.

CFOs and their teams most often (at just over 24 percent) use data analytics in "forecasting financial performance," while another 23.5 percent use analytics for "understanding the drivers of financial performance."

In other research, Deloitte Analytics has found many cases of organizations moving all analytics staffers into a centralized, shared-services function reporting directly to finance—which in essence serves as Switzerland—a neutral party that can supply the entire organization without the political machinations that can disrupt a more decentralized approach.

According to Tom Davenport, "Obviously, organizations want their analytical investments to pay off. Where better to have that happen than in finance?"

Data analytics tools are increasingly being used to support the top line, as customer planning areas use analytics resources for a variety of income-related initiatives. About 27 percent of respondents believe that analytics is most important for increasing sales to new and existing customers, followed by 17 percent who believe it is most important for initiatives to reduce customer churn and increase loyalty. Another 17 percent who believe it is most important in increasing sales force effectiveness by targeting qualified prospects.

Interestingly, a number of the interviewees were not overly concerned that corporate efforts to increase their knowledge of individual customers in order to better target them with relevant and attractive offers would be considered invasive.

One noted that many customers welcome and are beginning to expect a more personalized approach and often view carefully designed and communicated messages or offers as desirable.

"I don't think consumers get massively annoyed unless the message is completely inappropriate or irrelevant," said one executive who works for a global retail brand. A greater concern, is "apathy to all types of marketing communications," given the sheer volume of consumer-targeted messaging.

## Once you start spending money, the data becomes even more important. The culture we're growing is data hungry, and the best idea driven by the best data wins.

— Head of analytics for an insurance company

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In the area of supply chain management, where cost efficiency is paramount, expense control was ranked the most important data analytics area. Nearly 30 percent of respondents named “reduce procurement costs” as the most important use, while another 26 percent focused on ways to “optimize supplier and vendor relationships.”

While the reasons most chosen in the areas of regulatory and risk are not directly tied to income or cost control, they certainly have an indirect impact on the financial performance of an organization. In particular, the most important reason—favored by about 26 percent of respondents—is using data analytics to “identify fraud earlier in the process.”

Clearly, given the widespread incidence of corporate fraud, particularly within increasingly complex supply chains that rely on layers of connected suppliers, this is money well spent. According to a global study of fraud conducted by Kroll Advisory Solutions in 2012, 75 percent of those surveyed reported incidents of fraud at their company. The impact is quite dramatic, as the Association of Certified Fraud Examiners estimates that the projected global total fraud loss is more than \$3.5 trillion annually.

### Key findings

Is investment in big data and analytics worth it? The answer—increasingly—is yes. Not surprisingly, the most valued impact of analytics is on income production or cost reduction. Analytics delivers by:

- Increasing sales
- Identifying innovation opportunities
- Forecasting financial performers
- Understanding financial drivers

# Analytics across the enterprise

Consumers expect a (brand name) experience from all of our companies. So it makes sense to have our analytics groups joined together, since everything we do is based on our customers.”

— Data analytics leader for a global, multi-faceted retail business

How should analytics be structured within an organization? Where must its capabilities reside?

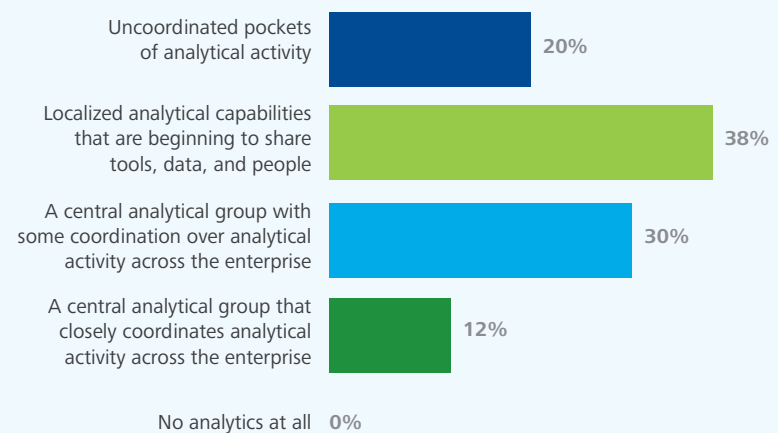
Wide variations exist in the “ownership” of analytics, with the most common analytics champion being a business unit or division head (23 percent). For organizations where analytics support is visible and valued, senior leadership often plays a role in championing the analytics effort. Interestingly, five C-suite categories (CEO, CFO, CIO, CMO, Chief Analytics Officer) and “other” combine to account for 56 percent of the individuals responsible for analytics.

Additionally, another 20 percent of organizations were unable to identify one single executive with that responsibility. This finding indicates an overall analytics leadership vacuum in many businesses. Some businesses may be experiencing an ongoing analytics ownership power struggle as executives become more cognizant of the potential benefits and complexities of a robust analytics asset within the enterprise.

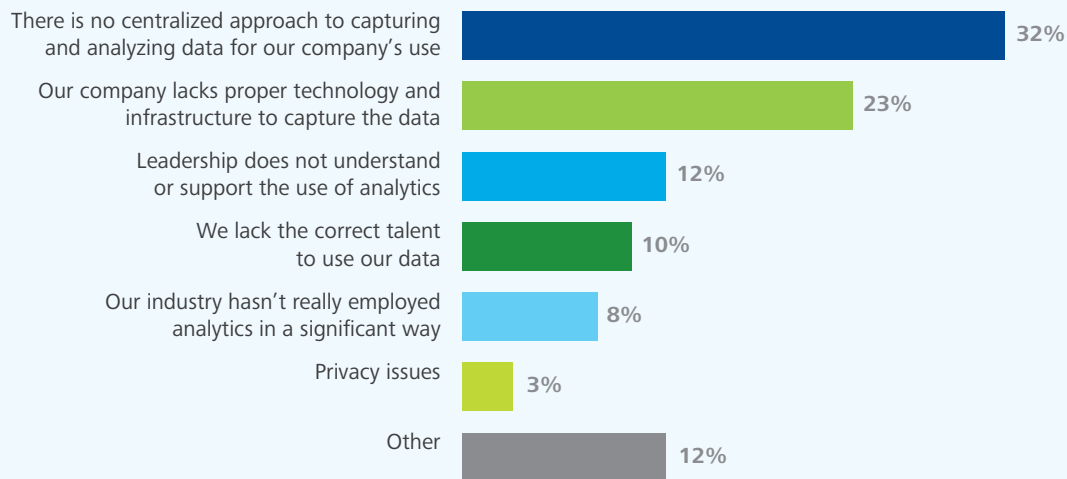
Given this vacuum, and the relative youth of modern-era analytics and big data, the fact that 42 percent of survey respondents report some level of centralization of analytics within their organization is somewhat surprising. The remaining 58 percent of organizations either have uncoordinated pockets of analytical activity (20 percent) or geography- or business unit-based analytical capabilities that are in early phases of collaboration as they begin to share tools, data, talent, and best practices with like-minded colleagues.

An ongoing matter of debate among data analytics practitioners is whether or not analytics should be a more centralized function or one that is embedded within various corporate work streams and geographies. The opinions are as varied as the companies and industries involved.

## ANALYTICS OWNERSHIP POWER STRUGGLE



## LEADING BARRIERS TO ANALYTICS USE



As one leader described it, moving from a decentralized to a more centralized approach to analytics—which is in the early stages at her organization—is a much-anticipated scenario. “I would prefer to go to a centralized team, because it decreases the likelihood of confusion within the organization,” she explained. “Otherwise, you have two or more departments investing and building their own support models, and that can create riffs and gray areas that none of the analytics groups can support or overcome.”

Conversely, some interviewees were adamant that decentralization of analytics capabilities is more effective, with one indicating that “by serving individual leaders, we are more embedded in the business and better able to serve their needs.”

Survey statistics, however, would indicate that further acceptance and implementation of analytics would likely increase if the function were more centrally structured. The top reason for not using analytics to support an organization's strategy (32 percent) was the lack of a centralized approach to capturing and analyzing data for the company's use.

The second most frequently cited reason for not using analytics to support enterprise strategy (23 percent) is that the company lacks the proper technology and infrastructure to capture—and then use—the data. A centralized structure, with access to more resources to build out a technology platform, data warehouse, and staffing capabilities, may help overcome that deficiency among many currently decentralized organizations.

Nevertheless, the “centralize versus decentralize” debate will likely continue as organizations grapple with the volume, velocity, and variety of data at their disposal; the resources required to make sense of it; and the effects data-driven projects have on revenue, expenses, market share, and reputation.

### Key findings

Many businesses are experiencing an analytics leadership vacuum, making it difficult to answer the question: *Do we centralize or decentralize?*

Organizations where analytics is most visible and valued have support from senior leaders and are best able to determine how analytics initiatives should be structured throughout the enterprise.

**We're starting to do a better job of identifying who's doing what, and sharing best practices. That's been a significant step toward a more vertical integration of our data analytics function.**

— Director of commercial analytics for a global health care company

# Barriers to overcome

It's just a huge amount of data to deal with. Data management is becoming a bigger and bigger part of the puzzle, and a bigger and bigger challenge for us to overcome.

— Vice president of marketing for an international software company

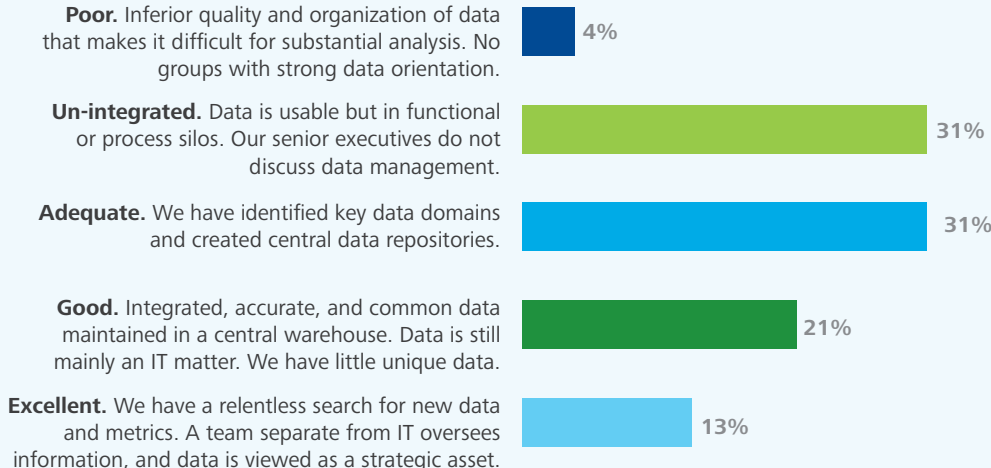
While analytics has grown in importance and relevance in recent years, its acceptance and impact have been curtailed by a number of barriers to widespread adoption.

Survey responses identified a number of key hurdles to overcome in order for analytics to play a more significant role in the enterprise—starting with the quality of the data itself. Many companies continue to struggle with the amount of data at their disposal, and how best to categorize, synthesize, access, and analyze it—and then to implement decisions that stem from those findings.

Only 34 percent of respondents categorized the quality of data in their organization as “good” or “excellent,” which means the data is integrated, accurate, and maintained in a central warehouse. Another 31 percent labeled it “adequate,” while 4 percent considered the data to be of “poor” quality, which means it is difficult to use for substantial analysis.

So, what needs to be done to improve data quality? In many cases, companies are struggling with disparate processes and systems, geography- or business unit-based information silos, and a paucity of data scientists and other human resources capable of effectively making sense of the data.

## DATA QUALITY CHALLENGES MAY IMPEDE ANALYTICS ADOPTION



As an analytics leader at a major telecommunications equipment provider explained it, “There’s a lot of data. There’s always been a lot of data. The fact that it’s coming at us so fast and in such a variety of forms puts a really big burden on us. We are trying to figure out what’s the problem we’re trying to solve with data, and how can you use it to make a good business decisions.”

Another key barrier to analytical progress is that nearly half of respondents said they don’t have the number of individuals or the skill levels required for data analytics within the organization. Among the remaining respondents, nearly 29 percent have the necessary number of people but indicate that the analytics workforce needs greater skills. Just 22 percent are in good shape talent-wise, with sufficient human resources within the company who have the right skill levels to get the job done—and that gap is playing a significant role in slowing the maturity of analytics in many organizations.

According to Davenport, organizations that want to do big data “right” need to consider three talent-centric pursuits:

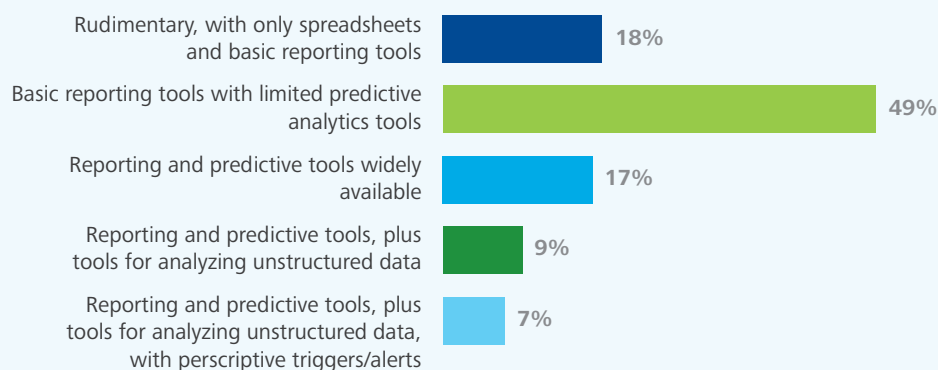
1. Evolve hiring practices within analytics to focus more on data scientist hybrids, the relatively few folks who combine skills in science and computation.
2. Hire really talented people with either computer science or analytics backgrounds, and place them on business teams that will appreciate their skills and insights.
3. Work with administrators and faculty at universities to create a master’s program in data science that will supply the next generation of data scientists.

Another key impediment to analytics within organizations lies in IT, as 67 percent of respondents said the technology infrastructure supporting analytics is either “rudimentary” or “basic” with limited or no predictive tools. One-third of respondents indicated that they do have appropriate reporting and/or predictive tools, which have served to propel analytics into a position of power and respectability within many organizations.

I don’t think most Fortune 500 companies have a culture of consistent curiosity and the willingness to take a little bit of risk. So we’re trying to create a culture of more questioning, because the top-down information flow is a naïve and outdated approach to running a company.

— Head of analytics for an insurance company

#### MAJORITY OF ORGANIZATIONS LACK TECHNOLOGY TO SUPPORT ANALYTICS





One company in the banking industry believes that it has been able to secure adequate funding and support for analytics projects because an internal, company-wide council approves budgetary requests for opportunities that create operational efficiencies or effectiveness. With consensus comes necessary funding to bolster IT infrastructure and other analytics resources that seem likely to generate a significant economic return.

That said, very few respondents—just 7 percent—felt that their organizations had robust and wide-ranging reporting and predictive tools, as well as tools for analyzing unstructured data with prescriptive triggers and alerts. That infrastructure deficiency no doubt accounts for the fact that only about 32 percent of respondents felt their organizations were efficient at combining internal and external data, while nearly 40 percent opined that their organizations were “inefficient” or “very inefficient” in doing so.

Some organizations with a large installed base of analytical models find them a barrier to progress and change.

“If you have a large existing system and a lot has been invested in it already, making changes to those models is a big challenge,” said a banking executive involved in analytics. “I think we could be much more effective if (further investment) was focused on complete centralization,” perhaps with a chargeback model that would fund “what would be a pretty large bureaucracy.”

To do so requires executive buy-in, which is another serious barrier to widespread adoption or growth of analytics, especially within large, complex companies that are geographically and culturally diverse.

Nearly 13 percent of survey respondents said that their primary reason for not using analytics more in the organization’s strategy is that leadership does not understand or support the use of analytics, a surprisingly large number given the growing attention and publicity big data is receiving.

One suspects that this lack of executive advocacy has a direct impact on other reasons that analytics is not more widely used in supporting organizations’ strategy, including a lack of correct talent to support analytics (10 percent) and the lack of proper technology and infrastructure to capture the data (23 percent). After all, it is senior leadership that controls the purse strings that fund major initiatives, like analytics.

Convincing leaders of analytics’ value often requires deft maneuvering, such as giving them small doses of analytics that reap immediate rewards. At one major health care organization, the CEO was already very data-driven. So, when the analytics group focused a major pilot project on a key priority of the CEO’s (improving patient access and care), and conveyed the data via an easy-to-understand dashboard approach, interest in the value of the data in improving operations spread throughout the C-suite.

As a result, the analytics group now has three additional executive sponsors—the CFO, CMO (Chief Medical Officer), and CIO—and a full-speed-ahead directive to extend analytical capabilities throughout every aspect of the organization.

Now, analytics is faced with a “good” problem: it must get the sponsors to agree on which pending projects are priorities. “We need them to say no to requests that don’t meet ROI criteria, because we can’t do all the things people want data to do for them.”

#### Key findings

In some organizations, the acceptance and widespread adoption of analytics have been curtailed by several barriers:

- Quality of data
- Inadequate size of or expertise from analytics staff
- Rudimentary or basic IT infrastructure
- Lack of executive advocacy

A little bit of the right information at the moment of truth is worth far more than all the information in the world two weeks after the fact. That's what we want to do and what consumers are beginning to expect from us.

— Head of business analytics group for a North American financial services company



# What the future holds

While the survey uncovered near unanimous optimism for the potential of analytics over the next three years, options for the application of analytical capabilities are as widespread and diverse as the reams of data companies are—and will be—producing and parsing.

A significant trend, as analytics matures within an organization, is in developing methods for packaging, sharing, and selling valuable data and insights to outside organizations (usually customers) that can benefit from the information and expertise. Not only does this create revenue streams that drive corporate growth and pay for data infrastructure investments, but it can further cement customer relationships. Forty-four percent of survey respondents were “very” or “fairly” open to sharing their data in exchange for insight-enhancing data from other organizations.

A large manufacturing organization has, in the last 18 months in 2013, begun to focus on developing analytics-driven, consulting-oriented services that help its customers better understand the risks, opportunities, and priorities of its own business.

According to one of the firm’s analytics leaders, this external focus has allowed customers with less extensive or early-stage analytics capabilities to use the company’s resources to bolster their analytics work. “Sometimes they offload special projects to us, or we create a custom (data) solution for them. This work definitely makes our relationships with these customers stickier,” said one respondent. This offers a differentiating advantage that most competitors cannot supply.

Ultimately, competitive advantage is what drives further development of analytics within many major organizations. Whether fostering better decision-making, or sharpening its product and service mix, the next generation of big data competencies seems destined to generate revenue and hasten go-to-market offerings.

Depending on their industry, talent, risk tolerance, and proven ability to justify the investment, new analytics applications are blossoming within most data-serious organizations.

The menu of new and anticipated offerings is extensive and represents the culmination of the inroads data scientists have made in recent years by repeatedly proving the tangible worth of analytical findings. As data analytics becomes more ingrained in corporations and data better managed, companies and industries will continue to develop and operationalize innovative applications.

A few of the many evolving trends include customer relationship-oriented applications, such as sales pipeline conversion analytics to more efficiently drive sales results, sentiment analysis, acquisition modeling, and predictive analytics.

Another emerging growth area is in the field of kinetic modeling, which a medical company’s analytics leader described as using a series of algorithms to determine the appropriate level of medicinal dosing of patients that ultimately may lead to better standards of care.

One executive has coined a term—“creative analytics”—that seems to encompass the future prospects for big data in any organization.

“What I’m finding is that really good analysts who drive value are the ones who are creative and deductive problem solvers,” he explained. “If you can take a very complex business problem and translate it to business people, well, that takes a ton of creativity. ...It’s not just about putting raw data on a spreadsheet anymore.”

## Key findings

Organizations are exploring numerous options in “creative analytics”—with many evolving trends focused on generating new revenue streams:

- Packaging and selling valuable data and insights to customers
- Developing innovative customer-relationship applications
- Hastening the speed of go-to-market offerings

# Conclusion

Since the evidence in this study illustrates that analytics is growing in importance and popularity, it would be wise to position your organization to succeed as the field expands and matures. Not only did 96 percent of respondents feel that analytics will become more important to their organizations in the next three years, but they also felt that a great deal of data is still not being used for decision-making, and many organizations have only rudimentary analytical technology. In light of these findings, there are several steps your business can take to position itself for analytical competition:

- **Acquire the necessary talent now.** It's clear that talent for analytics and big data is already in short supply, and the shortage will become even more pronounced over time. In the survey, access to talent was listed as one of the greatest barriers to building analytical capability. Since people with the necessary skills are difficult to hire, your organization may want to begin a program to train and develop them, sooner rather than later. Another approach to this problem is to partner with universities from which you hire—encourage them to develop degree programs or majors in analytics.
- **Tie your analytics work to decision-making.** Nearly half of respondents (49 percent) assert that the greatest benefit of using analytics is that it is a key factor in better decision-making capabilities. But better decisions don't happen automatically with better data and analysis; they are the result of specific attempts to improve decision cultures and processes, and to change the understanding and behaviors of front-line workers.
- **Apply analytics to marketing and customers.** There are many areas to which analytics can be applied, but the best financial returns often come from marketing and customer-oriented applications. In this survey, there is evidence that marketing influence is rising, as 55 percent of respondents said their marketing and sales groups invest in analytics, second only to finance operations. There should also be greater focus on using

analytics to identify and create new product and service revenue streams; only 1 percent of survey respondents said this was a focus today.

- **Create more central coordination for analytics.** Analytics is managed by a variety of executive roles within companies, and a wide range of functions benefit from the capability. More structure around coordination and alignment—though not necessarily full centralization—is needed to realize the impact and benefits of a company's data throughout the organization. Think about a small "analytics center of excellence" if you're not ready to fully centralize the capability.
- **Plan your strategy for analytics over time.** Virtually every organization in our online surveys and interviews is working on analytics projects and initiatives. But if analytics is going to drive strategy in organizations, there needs to be a connection between analytical plans and strategy development processes. Firms should identify not only today's projects, but also those that will follow them over the next several years. A multiyear perspective is necessary for planning the growth of analytical capabilities over time.

There are few signs on the horizon that the amount of data will decrease or that the need for better will diminish. Hence it seems very likely that analytics will evolve from its early development stages and will continue to mature as long as it generates tangible financial benefits for the corporation. The organizations that plan for this evolution today will be the analytical competitors of the future.

# About the survey

This report presents the key findings from Deloitte's initial Analytics Advantage Survey of relevant executives responsible for data analytics in North America, the United Kingdom, and Asia.

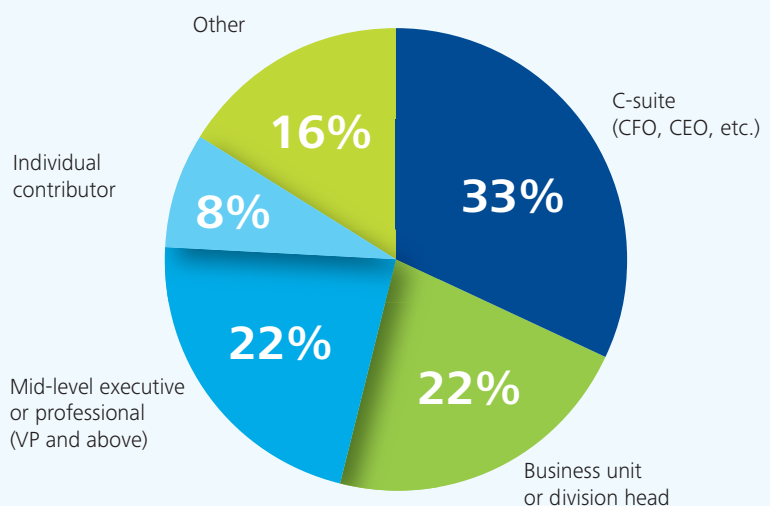
The survey covered numerous topics in the burgeoning analytics field, including qualitative assessments of data utilization, data quality, analytics talent, IT infrastructure supporting analytics, its importance to various corporate functions, the barriers to its widespread implementation, and its long-term benefits across the organization. It also addressed quantitative insights regarding who is responsible for analytics, how management of analytics is structured, and which areas within the organization invest in analytics.

Respondents represented companies in the financial services, technology, communications, entertainment, health care, consumer products/retail, energy and resources, manufacturing, government, and not-for-profit industry sectors. It was conducted from April 25, 2012, to September 19, 2012, and participation was anonymous.

Representatives of more than 75 companies responded to the online survey, and those results were complemented by extensive, one-on-one interviews conducted by Deloitte and senior adviser Tom Davenport with 35 senior-level executives. Combined, the results provide a comprehensive view of the current state of analytics, its tangible and intangible impacts on corporate decision-making, and the future direction of this rapidly evolving discipline within corporations of varying sizes across several industrial sectors.

In the future, as part of its Analytics Advantage Executive Board program, Deloitte plans to conduct quarterly pulse surveys with three to four questions to gauge new and emerging trends in the data analytics field.

## ORGANIZATIONAL PROFITABILITY

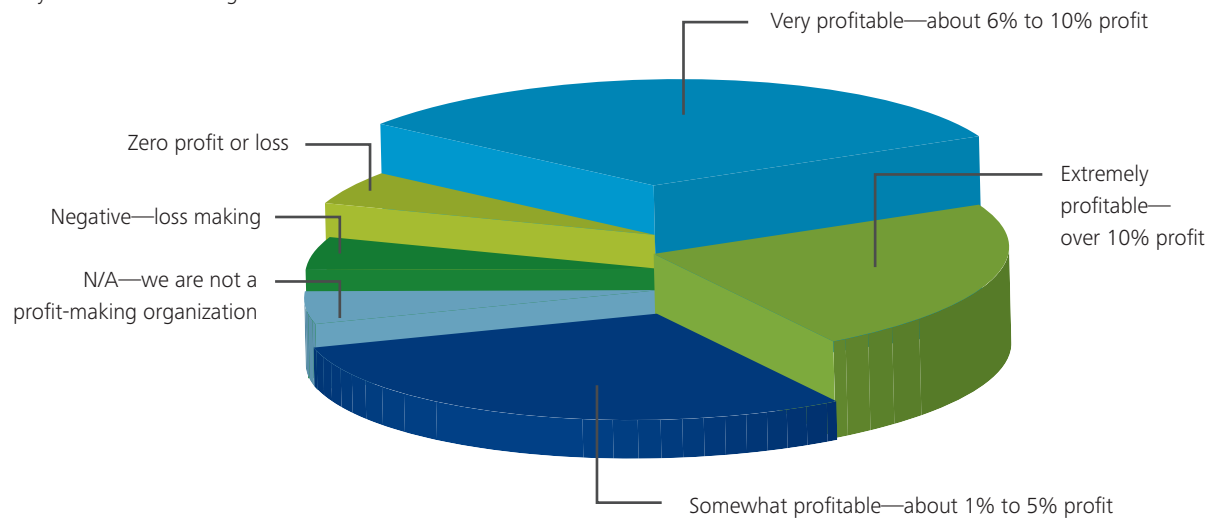


### The respondents

Deloitte surveyed the individual most responsible for analytics within each organization. More than half of survey respondents were C-suite executives (33 percent) or heads of business units or divisions (22 percent)—which further illustrates the growing importance of analytics at the highest levels of the enterprise. Only 30 percent were mid-level executives or individual contributors.

Nearly two-thirds work for large, multinational organizations, with annual revenues of US \$500 million or more. While 85 percent were profitable over the past five years, ranging from “somewhat profitable” to “extremely profitable,” a large number (41 percent) are not growing or have an annual growth rate over five years of 5 percent or less. Evidently, these companies are looking for operational efficiencies or competitive advantages that can improve profit margins and/or increase revenues. And they are turning to analytics as one key avenue for attaining those improvements.

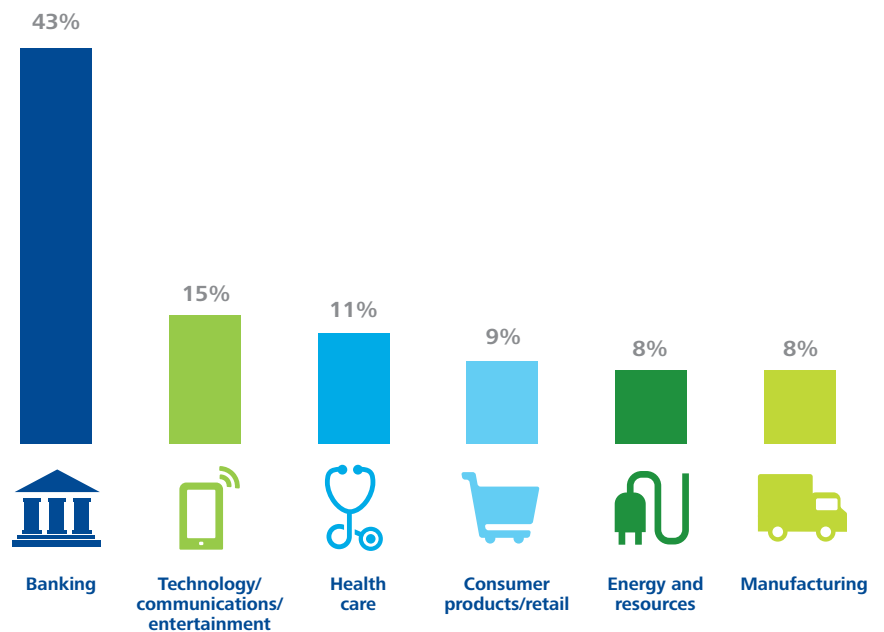
### ORGANIZATIONAL PROFITABILITY



### The industries

The respondents’ industries cut across numerous sectors, with the highest number (43 percent) in financial services—not a surprise given that data collection and reporting have been instrumental to the banking industry for decades. But the diversity of the other segments represented—technology/communications/entertainment (15 percent), health care (11 percent), consumer products/retail (9 percent), energy and resources (8 percent), manufacturing (8 percent), etc.—confirms general observations that analytics capabilities are increasingly important resources in all industries.

### RESPONDENTS BY INDUSTRY



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