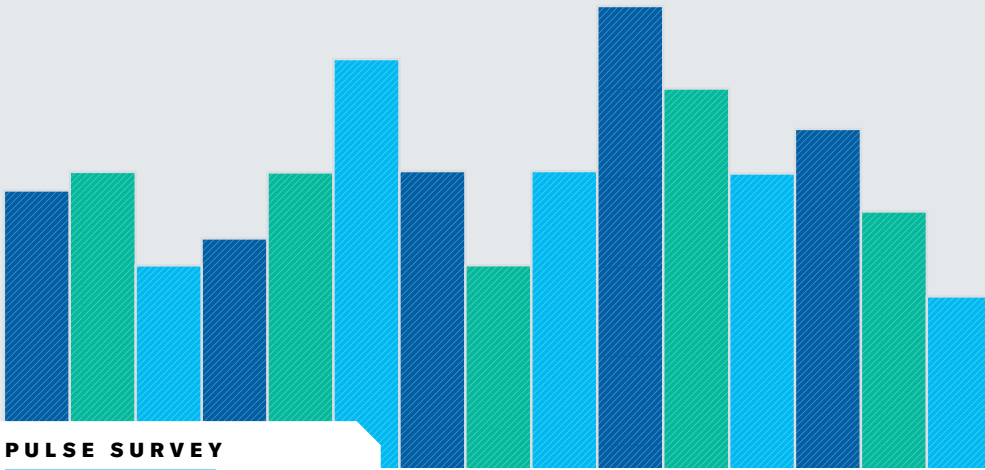




**Harvard  
Business  
Review**

ANALYTIC SERVICES



PULSE SURVEY

# Getting Strategic Value from Data Analytics When Initial Attempts Fail



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## Next Evolution of Analytics

It's time to think differently about using data and analytics. While many organizations have progressed from relying on static reports generated by IT teams to using some version of a self-service model, most still struggle to reap the world-changing benefits long promised by experts. Unfortunately, each evolution has delivered only incremental improvements over the last wave of analytics, leaving the biggest problems half-solved. We partnered with Harvard Business Review Analytic Services to discover the reasons behind this deficiency; the findings contained herein could help you solve adoption issues you may see at your own company every day.

At Sisense, we see the next evolution of analytics as changing not just how insights are generated but also when and how they're presented. Leveraging technology like artificial intelligence (AI) to help bridge the skills gap so that users of all skill levels can use data with confidence is just the beginning. A radically different approach to analytics adoption is also needed; instead of requiring people to change their habits and leave their workflows to get insights, infusing the data and actionable intelligence directly where users need it most is the key driving better business outcomes. Savvy organizations will remove barriers to access and make data a natural and intuitive part of every process and workflow instead of a hurdle to jump over.

The only way to get a competitive advantage from your data is by thinking differently, whether you aim to differentiate your product with analytics, understand your customers better, or create new revenue streams. The research in this report is clear: If organizations keep doing the same things, we will continue to get the same incremental results, but those who think differently will experience an exponential acceleration that will put them light-years ahead of their competitors.

This report is an ideal jumping-off point for the next leg of your data journey—analytic infusion. The future of analytics is intelligence infused throughout your business and in your product, service, or experience. Let us show you how to make that a reality for your organization so you can do more with the power of data.



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**Ashley Kramer**  
**Chief Product and**  
**Marketing Officer**  
**Sisense**

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# Getting Strategic Value from Data Analytics When Initial Attempts Fail

Today's organizations are awash in data. Although business leaders know that data has great value, their track records for using it to produce business value are mixed. Some organizations are analyzing and using data to produce benefits, but many fail to take full advantage of analytics to reach their most strategic goals.

According to a Harvard Business Review Analytic Services survey of 191 respondents conducted in December 2020, an overwhelming majority (89%) say analyzed data is essential to their organization's innovation strategy today. The survey also shows that companies are seeing improvements in operational efficiency and customer experience through use of data analytics, but they tend to fall short in identifying new revenue/business models and in becoming more innovative, despite rating these benefits high up on the list of those they seek most. This gap indicates that many organizations aren't realizing at least two of the top benefits they set out to achieve.

What's standing in their way? The survey indicates that organizations don't have quality data and, even if they do, their people don't know how to apply it. Respondents ranked lack of skills/training and lack of quality in data as the biggest barriers their organizations face in improving use of analyzed data.

However, these and other barriers should not be viewed, nor can they be surmounted, in isolation. In fact, interviews with experts reveal how these issues are interrelated and roll up to the overarching issues of culture and leadership. In short, senior leaders often fail to understand and embrace analytics. The result is a lack of strategy, lack of leadership, and lack of resources to infuse data analytics throughout the organization.

## HIGHLIGHTS



89% of survey respondents say **analyzed data is essential** to their organization's innovation strategy today.



61% of respondents say **lack of skills/training is the biggest barrier** to improving their organization's use of analyzed data.



16% say their organization's **rank-and-file employees have access** to analyzed data.



Less than a quarter (24%) of total respondents rate their organization's effectiveness in using analyzed data above 7.

"I go into organizations all the time and speak to executives who have responsibility for the data and the technology, and they talk about all the investments they have made and the capabilities they've built," says Randy Bean, founder and CEO of NewVantage Partners, a strategic advisory and management consultancy. "Then I meet with a president or business leader who says he can't get the data he needs at the speed he needs it with the degree of accuracy that gives him confidence."

This report looks at the state of data analytics and examines the obstacles preventing its progress. It also examines the extent to which data analytics are inaccessible and posits that broader accessibility and application of analytics in daily operations would help organizations produce more value. In a culture that embraces data, for example, everyone could easily access the data analytics they need to do their jobs, which would presumably reduce the need for training. Similarly, if leaders better understood how data analytics could help their strategy, they would devote more time and resources to improving the quality of data. The report includes best practices to help executives avoid common pitfalls and maximize their ability to benefit from data analytics.

## The Strategic Importance of Data

Despite widespread acknowledgment of the strategic importance of data analytics, organizations aren't making analytics widely accessible or easy to use.

"Most people are still banging their heads on spreadsheets every day," says Gauthier G. Vasseur, executive director of the Fisher Center for Business Analytics at the Haas School of Business at the University of California, Berkeley. Vasseur not only runs the center but also advises and trains executives on data and business analytics.

Previous Harvard Business Review Analytic Services surveys bear this out. In January 2020, 88% of respondents to one survey reported using spreadsheets to analyze data, and only 33% said they were highly satisfied with that tool's ability to provide the information they need.

Respondents to the current Harvard Business Review Analytic Services survey agree that effective use of analyzed data is vital—and its importance is only growing. Eighty-nine percent say analyzed data is essential to their organization's innovation strategy today, and some 94% say analyzed data will be essential to their innovation strategy in the next three years.

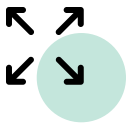
Yet respondents report only moderate success in using analyzed data effectively. Less than a quarter (24%) of total respondents rate their organization's effectiveness in using analyzed data above 7 on a 10-point scale, with 10 being most effective. Eighty percent rate their organization's effectiveness at 5 or higher.

When asked what benefits their organization most aims to achieve with data analytics investments, respondents say improving operational efficiency (56%), improving customer experience (50%), identifying new revenue streams or business opportunities (39%), and increasing innovation (30%). When asked which benefits they actually realize the most, improved operational efficiency and improved customer experience were again the top responses, at 49% and 40%, respectively, followed by increased employee productivity (28%). However, as noted earlier, fewer respondents report realizing the most success in identifying new revenue or business opportunities (23%) and increasing innovation (14%) compared to how many said each was a highly desired benefit. **FIGURE 1**

Some experts think that companies are paving the way for more strategic benefits by achieving easier, tactical benefits first. Vasseur recently saw those kinds of results with a human resources team of one global corporation. It used analytics to automate time-consuming manual processes, reducing process time from 12 hours to 2.5 hours. This reduction created more time for higher-level work and more innovative HR management.

But others think the trend is headed in the wrong direction. Executives find it difficult to effectively mandate the changes required to reach certain strategic goals, says NewVantage's Bean. NewVantage has polled chief data officers and other executives about data analytics for the past nine years. In its latest poll, published in early 2021, only 39% of respondents report they are managing data as an asset (down from 50% in 2020), less than 49% say they are driving innovation with data (down from 64% in 2020), and 24% say they have created a data-driven organization (down from 38% in 2020).<sup>1</sup>

The results "strongly suggest the need for change in the focus of data executives toward programs that address data culture, literacy, and decision making—even at the expense of technology initiatives," finds the NewVantage survey. In fact, this is the fifth year in a row that respondents to the survey said cultural challenges rather than technology challenges were the biggest obstacle to realizing business outcomes.



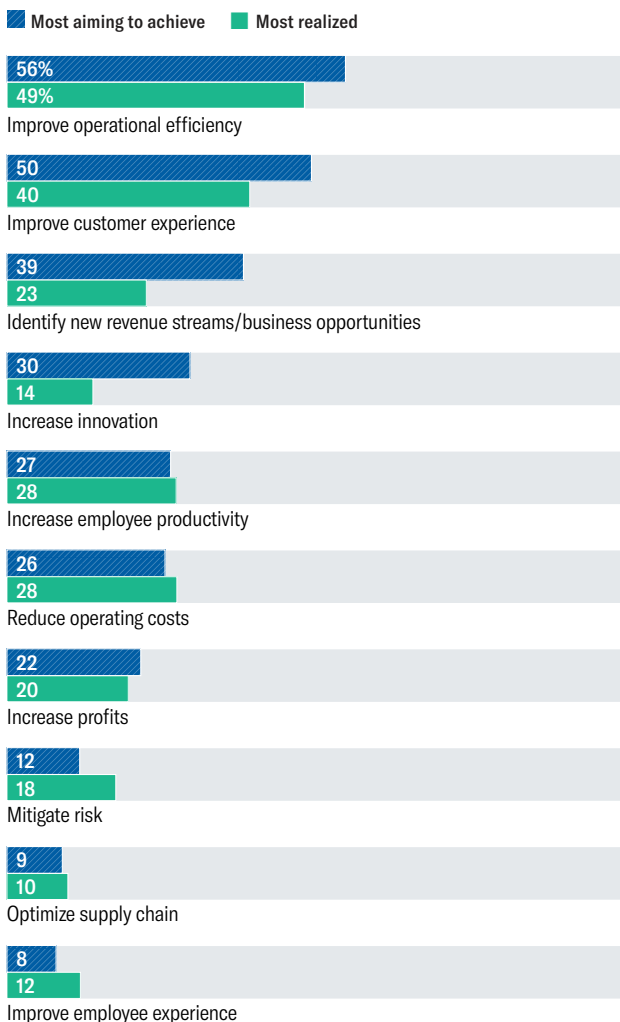
“Most people are still banging their heads on spreadsheets every day,” says Gauthier G. Vasseur, executive director of the Fisher Center for Business Analytics at the Haas School of Business at the University of California, Berkeley.

FIGURE 1

### You Can't Always Get What You Want

Organizations achieve some data analytics benefits but fall short on identifying new revenue streams and increasing innovation.

Benefits:



Source: Harvard Business Review Analytic Services Survey, December 2020

### Barriers to Producing Business Value

There are many interrelated obstacles to improving use of analyzed data. The top three barriers cited by survey respondents were lack of employees with necessary skills/training (61%), lack of high-quality data (43%), and a company culture that tends to limit access to information (24%). While the first two challenges are significant, the third one might be the most pressing. In fact, many of the barriers cited by respondents indicate lack of access, including lack of necessary technology (22%), an organizational structure that impedes access to or use of analyzed data (20%), lack of leadership prioritization (19%), and hard-to-access analyzed data (18%). **FIGURE 2**

Better training and data won't do much good for companies that don't make data widely accessible. Indeed, when the survey compares the benefits realized between employees with more access and those with less, the group with superior accessibility is much more likely to say the benefit they realized the most is new revenue streams/business opportunities.

Some of the barriers are remnants of history, making a particularly tough obstacle for legacy companies. Survey respondents pointed this out in their comments. “Our company's workflow was designed in an era without data and analytics. Consequently, the way jobs are designed does not require use of analyzed data,” writes one respondent. Another says, “Data isn't centralized—there are too many enterprise resource planning systems to obtain data and analytics.”

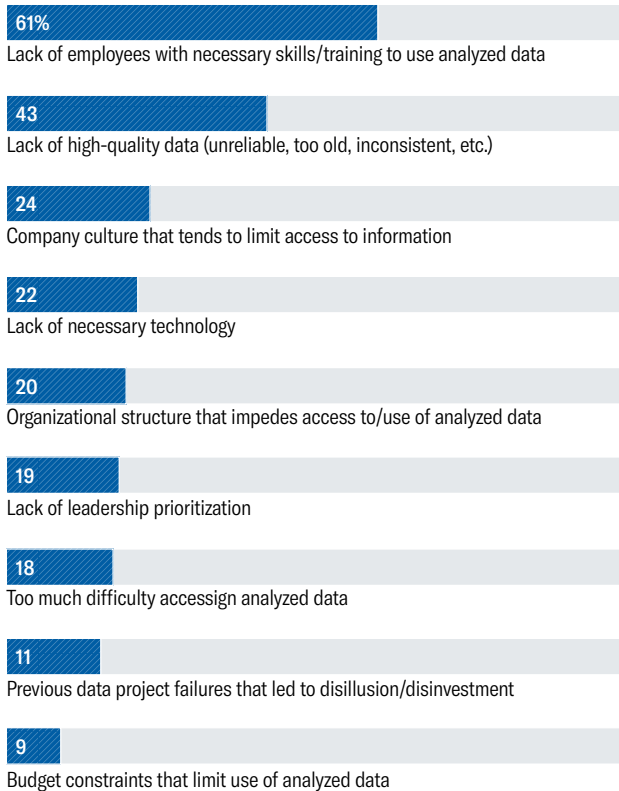
Vasseur of University of California, Berkeley, says the industry has moved through three phases with data analytics. First, it looked to technology to produce useful data analytics, but technology by itself was not the solution. Next, organizations thought they needed more data, which led to things like data lakes, which have proven problematic because they were hard to navigate. Lately, companies focused on hiring data scientists, but they were often disconnected from business needs.

But none of these phases address the heart of the problem, says Vasseur. Lack of skills and training is a significant barrier, as much for executives as for other employees. The chief

FIGURE 2

## Barriers to Improving Use of Analytics

Lack of skills/training and lack of high-quality data are biggest obstacles.



Source: Harvard Business Review Analytic Services Survey, December 2020

data officer may know data science, but other executives usually receive little to no education about data or analytics. “If leaders don’t understand data and analytics, they can’t lead a company and their employees in how to use it for business advantage,” he says. “They can’t build a data analytics culture at scale.”

Meanwhile, the talent of highly paid data scientists can be wasted if managers don’t have a basic understanding of data science. Thomas F. O’Toole, associate dean of executive education at Northwestern University’s Kellogg School of Management, typically starts his executive education class by asking why members are taking the course. “One executive approached me after the class and told me he was here because his CEO had hired a data scientist,” O’Toole explains. “He told me, ‘This person reports to me, and I don’t know what they do or what to do with them.’”

## The Search for the Right Data

The dearth of understanding impacts the quality of the data. Most companies are organized around things like products or business lines rather than data. This decision results in fragmented data, pieces of which various different constituencies control, especially in legacy companies, according to Bean. “Most organizations don’t really know what data they have to begin with,” he says. They should know not only what the data is but also where it is, who produces it, how it flows through the organization, who consumes it, and for what purpose, he says.

Technical progress is needed to bridge the divide between those information silos, says O’Toole. In many legacy companies, a marketing manager may have to draw information from three different systems: the revenue/accounting system, the customer relationship management/customer database, and the e-commerce/online transaction system, for example. “Those three systems were developed at different times and were probably not designed to talk to each other and may even record transactions differently,” he says. Those systems need to be knit together before analytics can be infused into operational practice. “We need to unify data from multiple systems and make it available so we can use it on a real-time predictive basis,” O’Toole says. “Then we can integrate analytics into our business processes rather than just appending them onto existing processes.”


But the most important thing for executives to know regarding data analytics is what question they want to answer, says Vasseur. “Data is the easy part. The hard part is to ask the right business question,” he says. “You can produce all these analytics, but they may be useless if you haven’t formed the question and made some decisions about how to answer it.” That question tells you what kind of data you need, at what quality level, and how to organize it so people can use it. “The data should be organized in a way that can answer the business question you’re asking. For example, if I go into a bookstore looking for a travel book, and everything’s organized by title alphabetically, I’ll never find it.”

## The Consequences of Less Access

But some companies don’t even let most of their employees enter the bookstore. That lack of access can directly impede progress in achieving the more strategic benefits organizations seek.

“A company is first and foremost made up of people and culture,” says Vasseur. “Innovation comes from collaboration and agility, not from machines, not from data, and not from data scientists,” he says.

In a Harvard Business Review Analytic Services survey published in July 2020, 77% of respondents said that democratizing data was important to their business success.



**“Most organizations  
don’t really know  
what data they have  
to begin with.”**

**Randy Bean, founder and CEO of  
NewVantage Partners**



## Data analytics can't produce benefits unless people use them. But some executives get nervous about democratizing the data.

FIGURE 3

### The Keepers of the Data

Access to analyzed data is mostly restricted to a few groups.



Source: Harvard Business Review Analytic Services Survey, December 2020

Yet respondents to the current survey point to many limits on data access. The four groups that respondents most often identified as having access to analyzed data, for example, are top executives, line-of-business managers, data analysts, and IT teams. **FIGURE 3** Only 16% of respondents say that rank-and-file employees have access, and only 15% say everyone in the organization has access. And even when employees have access, it's often too slow to be useful. A majority (57%) of respondents say non-IT/data analyst employees are occasionally, rarely, or never able to quickly access the data they need. Only 9% say employees are always able to access the data needed to accomplish a task quickly.

The survey results indicate that the broader the access, the more strategic the benefit. When looking separately at the group of respondents who said 40% or more of their workforce has data access, that group was 19 percentage points higher in reporting new revenue streams as a top benefit from data analytics investments compared to those who said under 40% of their workforce had data access.

Data analytics can't produce benefits unless people use them. But some executives get nervous about democratizing the data. "If you start exposing a lot of data to a lot of people, [mistakes] will be in plain sight," says Vasseur. "Executives say they want to be data driven, but then they realize that everything they do can now be monitored by those beneath them."

A healthy data culture inevitably leads to "inconvenient answers," Northwestern's O'Toole says. "In a true data culture, you are open to learning from what the data tells you, even if that calls into question the conventional wisdom. In large, established legacy companies, this can be a problem."

The lack of access also stems from the past, when data consolidation, management, and analysis were the exclusive purview of IT. But technology specialists sometimes continue to be the keeper of the keys or require employees to learn yet another tool to unlock the data. A majority (69%) of employees outside IT/data teams still must exit their existing workflows to access the data they need, the survey found, either by using a separate tool or dashboard (51%) or by requesting it from the IT/data team (18%). **FIGURE 4**

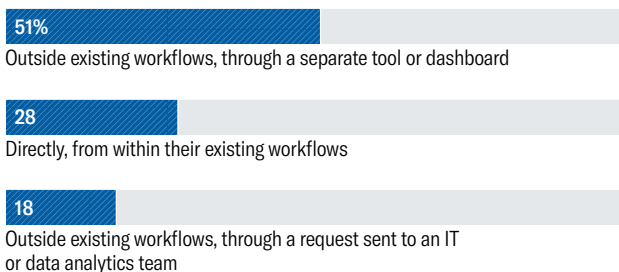
Only 14% report that data analytics are built into nearly all employee tools/workflows. While 17% say data analytics are built into few or no workflows, most responses fell

FIGURE 4

### The Keepers of the Data

Where Employees Go for Analyzed Data

Mostly elsewhere—outside existing workflows



Source: Harvard Business Review Analytic Services Survey, December 2020





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To improve the business value organizations derive from data analytics, executives should build, embrace, and promote a true data culture based on a solid understanding of data analytics from the C-suite level to frontline workers.

somewhere in the middle—35% say analytics are in more than half but not all workflows; another 35% say analytics are in less than half but not zero workflows. The group that reports analytics in over half of workflows was also more likely to report that one of the most realized benefits from their data analytics investments was the ability to identify new revenue streams/business opportunities (32%), compared to the group reporting analytics in less than half of workflows (13%), a 19-point difference.

O'Toole uses the example of how analytics is embedded in online marketing to emphasize the importance of infusing analytics into workflows. "If you go onto a retailer's site, they can recognize that it's you," he says. "They immediately know your transaction history and other characteristics about you, they can predict what you have a propensity for purchasing and display that to you." In that application, analytics is real-time and predictive. "That's a world of difference from looking up a report and doing retrospective segmentation."

To overcome the lack of data access and get the most value from data analytics, experts outline the following steps for business leaders.

**Make sure everyone on the leadership team has a working knowledge of data and analytics.** "They don't have to be data scientists any more than they need to be CPAs, but much like a working knowledge of finance and accounting is a prerequisite for executives, they need to understand data science and analytics if they are to create a data culture and produce business value," says O'Toole. "I definitely see this at the smartest legacy companies. They are investing in establishing a conversancy in data science among their business leaders, right up to the very top."

**Democratize the data.** Tackle the technical challenges to consolidate data from multiple systems, says O'Toole. This requirement can be a sticking point because it's so difficult to put an ROI on IT enablement. But this spending is imperative because only then can companies make that data easily available and infuse it into everyday operations. "We need to integrate analytics into our business processes, not just append them onto existing processes," he says.

**Set data priorities.** It's easy to be overwhelmed by too much data. "Decide what's most important," says Bean. "That can be very difficult because of the different constituencies and lines of business that you have to please. But try to come to a consensus: What are the key things about your data that you absolutely need to get right?"

**Start by focusing on a specific, tightly defined business problem** where analytics can produce quick, tangible business value. O'Toole illustrates this strategy with an example from a company that operates medical test equipment. "They used data analytics to predict and then reduce the number of patient no-shows," which saved time and increased profits.

**Be careful with metrics.** It's good to define a goal and to be able to measure whether you've met it, but people often try to use the same metrics for everything, says Vasseur. Managers often go immediately to measuring the impact on revenue, for example. Also, the tendency to want "measurable results" leads companies to measure things that aren't well defined. A goal of increasing business performance "might mean an increase in revenue/margins or EBITDA [earnings before interest, taxes, depreciation, and amortization] to the CFO," O'Toole says. "Someone else might think it means market share or customer retention. So, you need to be very explicit about metrics and over what time period."

## Conclusion

To improve the business value organizations derive from data analytics, executives should build, embrace, and promote a true data culture based on a solid understanding of data analytics from the C-suite level to frontline workers. Only then can analytics be infused into the business.

"This is not a technology problem," says O'Toole, "it's a culture problem. The more companies I work with, the more I realize that this is fundamentally about building a data culture."

## Endnote

- 1 Randy Bean and Thomas Davenport, "Big Data and AI Executive Survey, Executive Summary of Findings," January 2021. [https://c6abb8db-514c-4f5b-b5a1-fc710f1e464e.filesusr.com/ugd/e5361a\\_76709448ddc6490981f0cbea42d51508.pdf](https://c6abb8db-514c-4f5b-b5a1-fc710f1e464e.filesusr.com/ugd/e5361a_76709448ddc6490981f0cbea42d51508.pdf).

## METHODOLOGY AND PARTICIPANT PROFILE

A total of 191 respondents drawn from the HBR audience of readers (magazine/ newsletter readers, customers, HBR.org users) completed the survey.

### Size of Organization

**19%**  
10,000 or more  
employees

**25%**  
1,000–9,999  
employees

**31%**  
100–999  
employees

**25%**  
Fewer than 100  
employees

### Seniority

**40%**  
Executive  
management/  
board members

**34%**  
Senior  
management

**20%**  
Middle  
management

**5%**  
Other grades

### Key Industry Sectors

**13%**  
Government/  
not-for-profit

**12%**  
Financial  
services

**11%**  
Education

**10%**  
Business/  
professional  
services

**10%**  
Technology

**9%**  
Manufacturing

All other sectors  
less than 8% each

### Job Function

**29%**  
General/executive  
management

All other functions  
less than 8% each

### Regions

**44%**  
North America

**19%**  
Europe

**18%**  
Asia Pacific

**8%**  
Latin America

**9%**  
Middle East/  
Africa

Figures may not add up to 100% due to rounding.



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