

# Time to Seriously Reconsider the Role Open Source Can Play in Data and Analytics

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## Introduction

Only 11 percent of business intelligence (BI) and analytics users consider open source critical. Despite sitting squarely in a minority, those people outperform the other 89 percent on many key measurements. They report significantly more instances of:

- BI and analytics budget increases
- The highest level of success with BI initiatives
- Data leaders in place
- The two highest levels of data literacy
- Making data-driven decisions all the time

These positive data indicate there likely is something very “right” in perceiving open source as critical. Those who do not currently share this perspective should reconsider their positions, or risk falling behind.

Some seemingly are starting to reassess their perspectives. In 2022, open-source software as a technology priority shows the largest year-over-year increase of all the technologies and initiatives strategic to BI that we track. Why the new interest?

Recent years saw open-source technology play an even larger role in IT infrastructure and application development. The rise of Kubernetes and containers on the cloud infrastructure front is real and spreading. When IT departments use an ever-increasing number of open-source tools and environments, they also will creep into analytics platforms and tools. Do not ignore open source at the risk of losing control of your data or falling behind competitors that leverage open-source software to help enable competitive advantages.

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Open source started to enter the analytics space when big data emerged. Open-source data repositories were the best tools to ingest unknown quantities of unstructured big data. The structured data typically came from transactional systems throughout the organization and rested in a central repository, where everyone in the organization could benefit from integrating the data. When users started requesting unstructured big data, most of the preferred tools were open source. Open source also plays an increasingly important role in data science and machine learning, with technologies such as Tensorflow, R, and Spark experiencing wide adoption.

Open source also made major inroads into cloud IT infrastructure, which impacts analytics. Kubernetes is an open-source system designed to automate deployment, scaling, and management of containerized applications that can leverage on-premises, hybrid, or public-cloud infrastructure. Kubernetes typically allows an organization to scale the infrastructure without increasing the size of the IT operations teams. The rising popularity of cloud and Kubernetes in turn increases open source in other areas of IT that interact with these—including analytics platforms.

Just as data literacy plays a pivotal role in achieving success with BI and analytics, our data show that organizations should look to be more open-source literate. Organizations that see open source as critical to their analytics initiatives differ significantly—and positively—from all other organizations. They are more data literate, they are more likely to have identified data leaders, their BI initiatives are more likely to be a success, and they more likely will see increased budgets for BI and analytics. Given all that—and the inroads open-source software has made and likely will make in the future in your organization—you should read on and aim to become more open-source literate.

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## Executive Summary

1. Only 11 percent of the surveyed organizations deem open source as critical to their analytics and BI initiatives going forward. However, that minority outperforms the other 89 percent in many important measures.
2. Organizations that view open source as critical report more instances of increasing BI and analytics budgets, and fewer instances of flat and decreasing budgets.
3. Those who consider open source critical most frequently come from both the smallest and the largest organizations.
4. Organizations that view open source as critical are 39 percent more likely to have a data leader and 26 percent less likely *not* to have a data leader (compared to all other organizations).
5. Organizations that view open source as critical report having the two highest levels of data literacy almost twice as often as all other organizations.
6. Organizations that view open source as critical express a slight preference for best-of-breed / build-your-own environments, compared to single-vendor integrated BI platforms.
7. Organizations that see open source as critical are more likely to have everyone using spreadsheets.

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## Recommendations

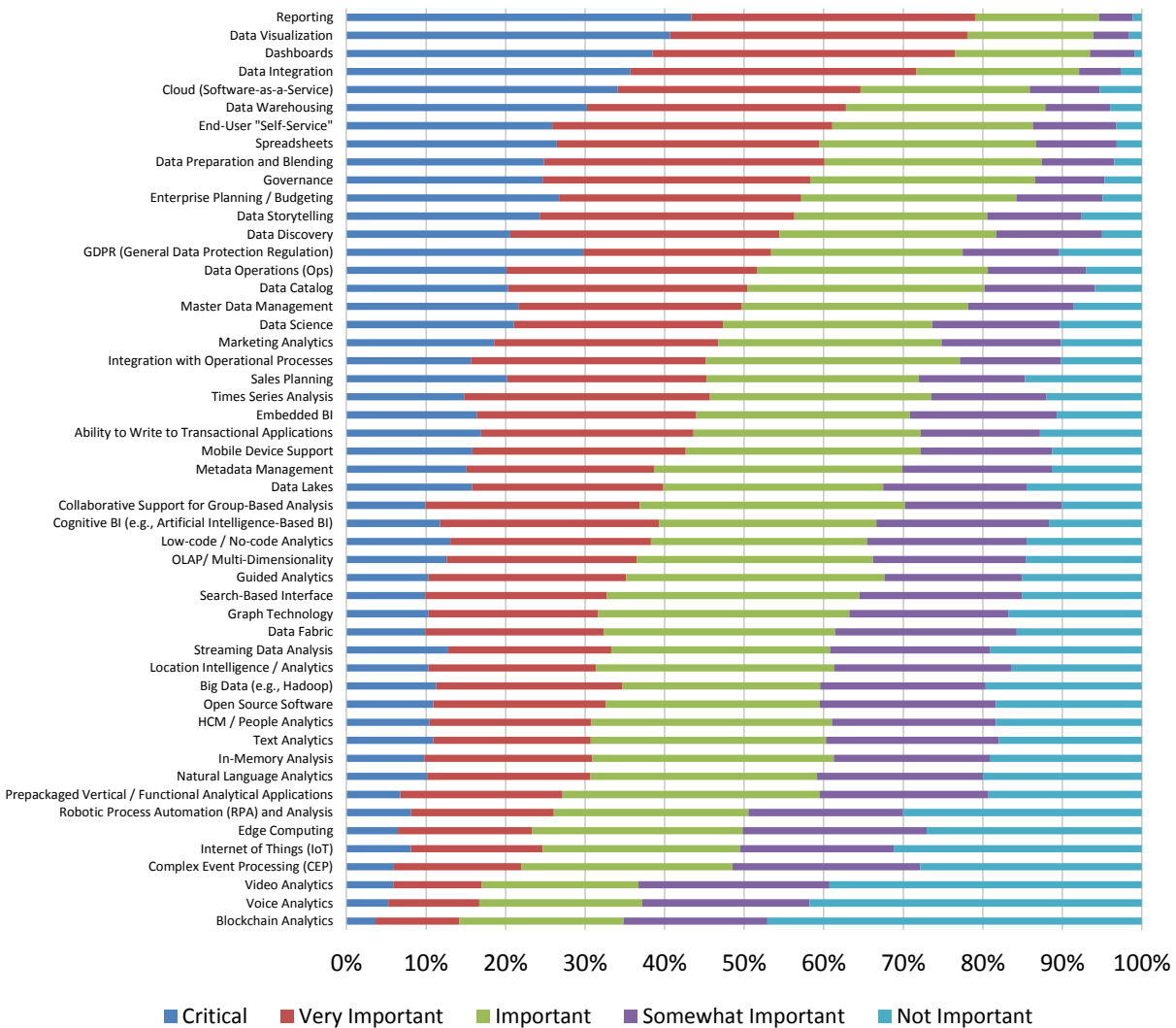
1. Become open-source literate. Many data and analytics professionals know little about open-source vs. proprietary software. They usually use one or the other, based on availability. But in the future, they will use some open-source tools or be left behind. The risks from complacency on open source are too large.
2. Continue to add tools to your BI and analytics environment as appropriate, based on business need and expected return. Most vendors consolidate and make their environments more of a one-stop shop. Many analysts need more than one tool to answer the questions posed to them.
3. Do not ignore how much open-source software is used in your analytics data infrastructure. Work with IT colleagues to understand business and IT issues. Use this understanding to then determine the best combination of on-premises, hybrid-cloud, and pure-cloud environments to use.
4. Organizations that have not already done so need to define a path forward for their use of big data, as it becomes more mature and shifts from fad to necessity. Big data precipitates a need to shift data platforms, which in turn drives a need for new tools to interact with the growing amount of data. Open-source software can provide many of these tools and even platforms.
5. Aim to have users make an increasing percentage of their decisions based on data. Organizations that most frequently make data-driven decisions all or most of the time report BI initiatives with higher levels of success, which in turn increases the likelihood for increasing BI and analytics budgets.

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## A Lower Percentage of Organizations Consider Open Source Critical

In the 2022 Dresner Advisory Services Wisdom of Crowds<sup>®</sup> Business Intelligence Market Study, respondents rate open-source software in the bottom third of the 50 technologies and initiatives strategic to BI (11 percent). For context, reporting has the most critical ratings (43 percent) and blockchain analytics the fewest (4 percent). Despite open source having a lower ordinal rating as critical, respondents that view it that way have interesting correlations with other key aspects of BI that we measure.

### Technologies and Initiatives Strategic to BI



Source: Dresner Advisory Services Wisdom of Crowds Business Intelligence Market Study 2022

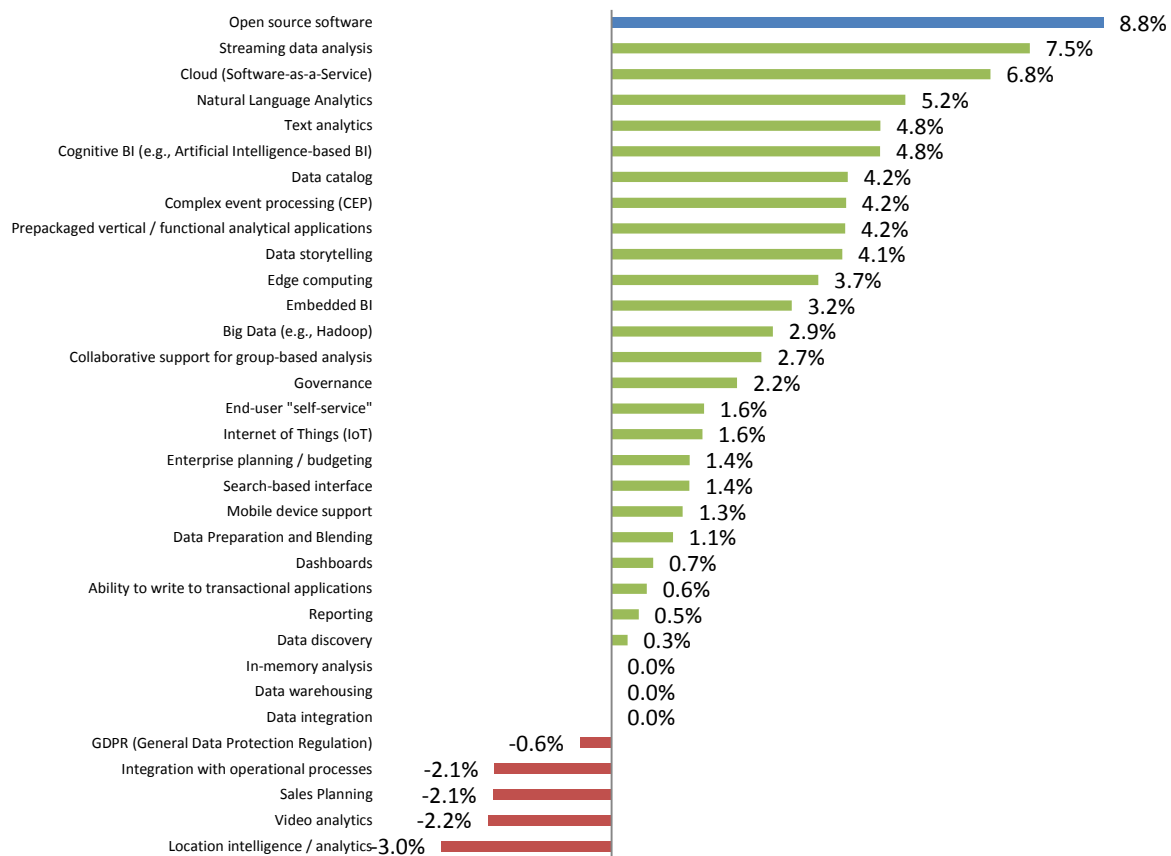
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## But Open Source Shows the Biggest Change as a Priority

Despite being perceived as critical by only 11 percent of respondents, open-source software displays the largest year-over-year change as a technology priority, increasing by 8.8 percent in 2022.

The next two-highest technology-priority changes in 2022—streaming data analysis and cloud—also have a strong synergies and relationships with open-source software.

### Change in Technology Priorities 2021-2022



Source: Dresner Advisory Services Wisdom of Crowds Business Intelligence Market Study 2022

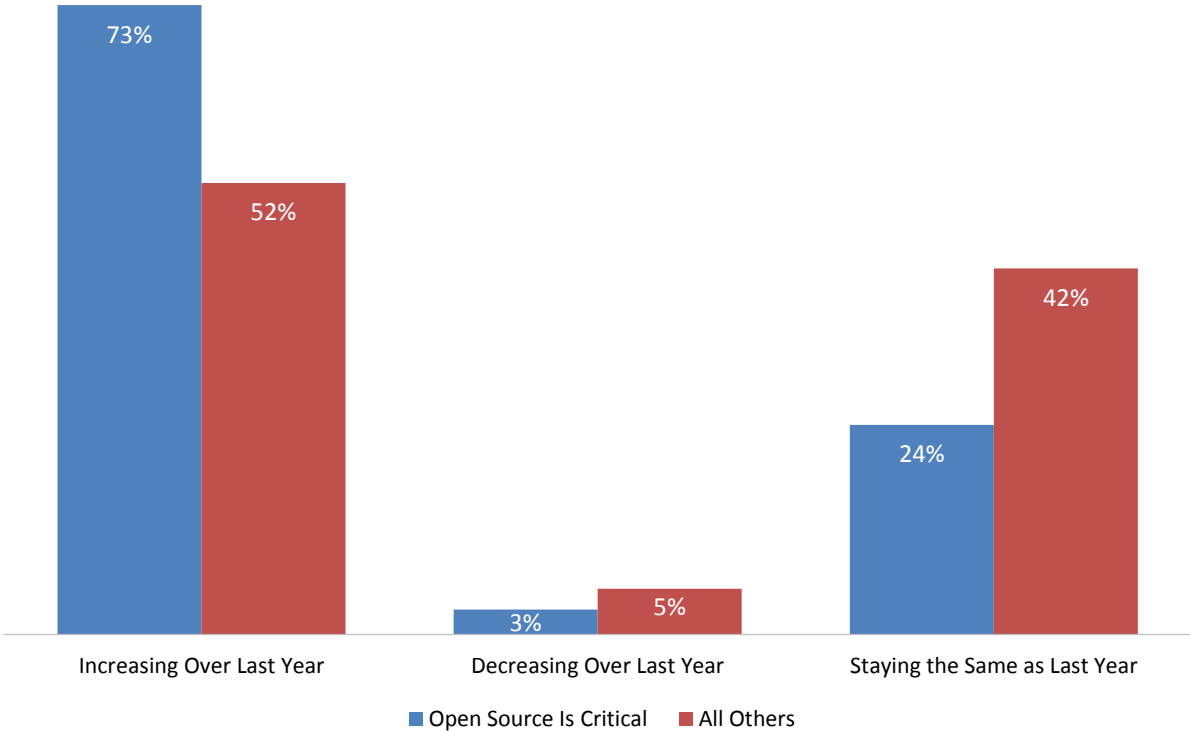
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## BI and Analytics Budget Trends Tend to Align With Perceptions

BI and analytics budgets serve as a proxy of how organizations view BI initiatives and programs, as well as how they provide value to an organization.

Organizations that consider open-source software critical and that it will play an increasing role in analytics in the future much more frequently report more positive BI and analytics budget activity. Despite challenging economic conditions in 2022, 73 percent of organizations that view open source as critical report increasing BI and analytics budgets—21 percentage points (40 percent) higher than respondents in all other organizations. In addition, organizations that view open source as critical report slightly fewer decreasing budgets and significantly less instances of unchanged budgets (compared to all others).

### BI and Analytics Budgets by Critical Perception of Open Source



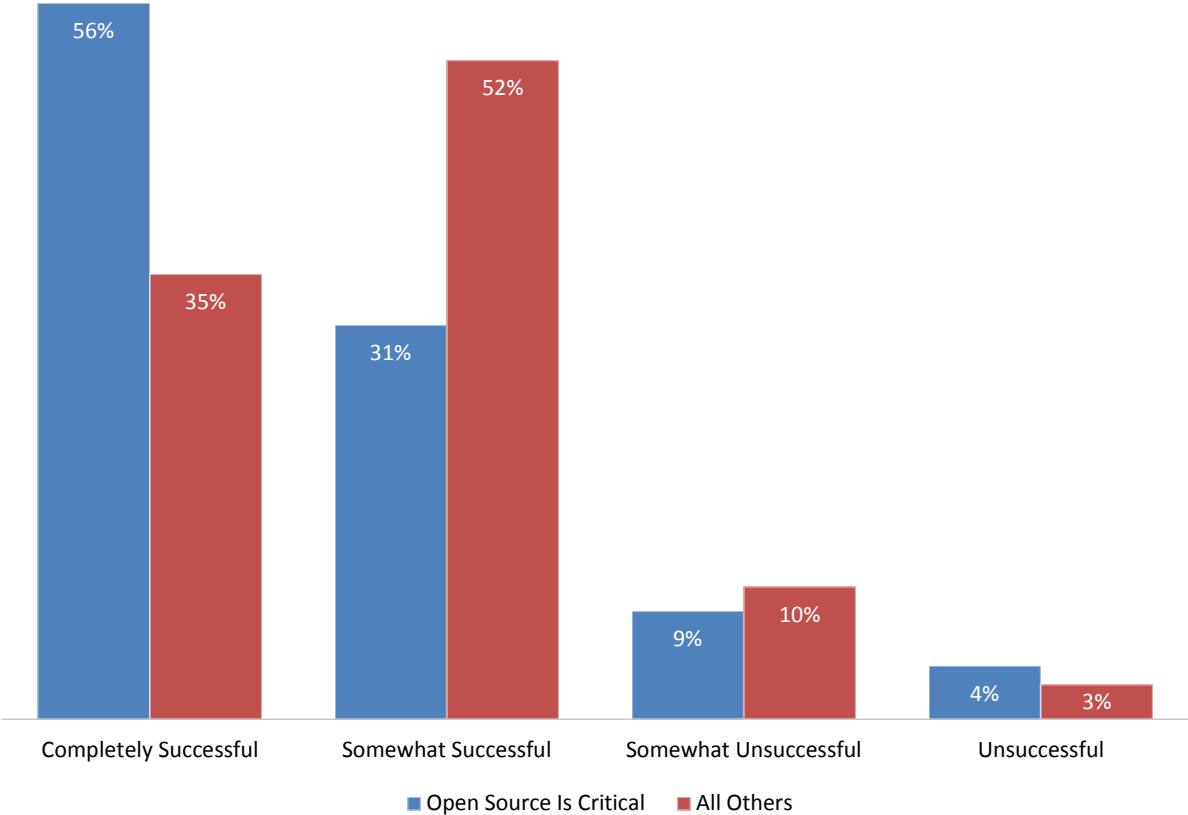
Source: Dresner Advisory Services

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## Open Source as Critical and its Relationship to BI Success

Although budgets can be a proxy, self-reporting of BI initiatives directly indicates levels of success with BI initiatives. In 2022, 87 percent of organizations that view open source as critical consider their BI initiatives either completely successful or somewhat successful. In all other organizations, the same percentage also consider their BI initiatives completely successful or somewhat successful. However, a notable difference exists in degree of perceived success. Organizations that view open source as critical much more frequently (56 percent) indicate they consider their BI initiatives completely successful (the highest level of achievement), compared to 35 percent of all others.

### BI Success by Critical Perception of Open Source



Source: Dresner Advisory Services

Having identified data leaders and higher levels of data literacy also correlates with more successful BI initiatives.



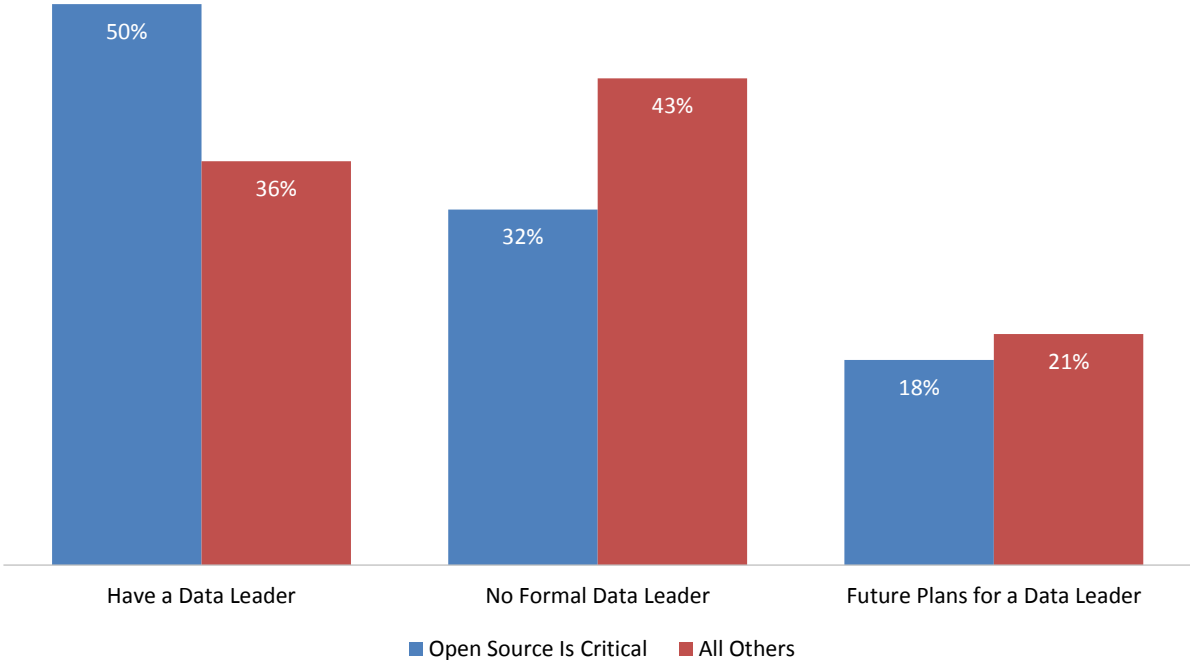
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## Open Source as Critical and its Relationship to Data Leadership

Our research shows the presence of formal data leadership correlates with higher levels of BI success (see the Research Insight “Make Data Leadership a Top Priority”). Given that organizations that view open source as critical report the most instances of the highest level of BI success, it is not surprising to also see that these organizations are 39 percent more likely to have a data leader and 26 percent less likely *not* to have a data leader (compared to all other organizations).

### Data Leadership by Critical Perception of Open Source



Source: Dresner Advisory Services

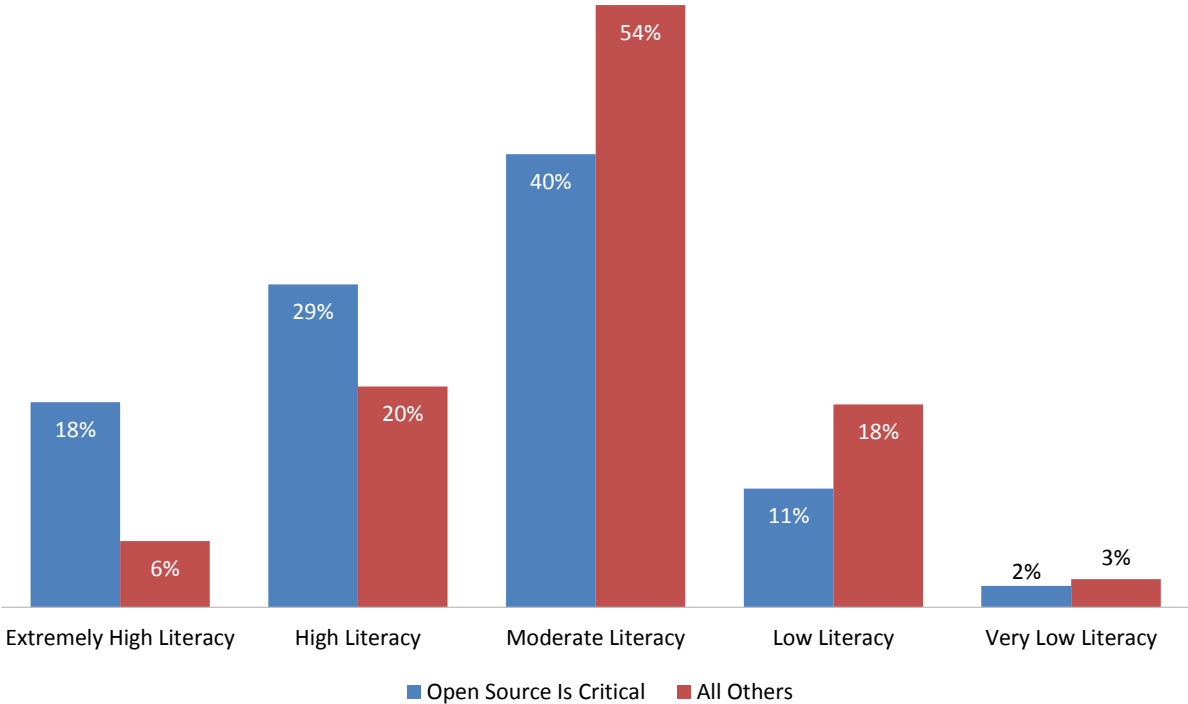
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## Open Source as Critical and its Relationship to Data Literacy

Our research also shows that organizations with higher data-literacy rates report greater success with their BI initiatives.

Given that organizations that view open source as critical report the most instances of the highest level of BI success, it is not surprising to also see that these organizations report having the two highest levels of data literacy (*extremely high* and *high*) almost twice as often as all other organizations—47 percent for organizations that consider open source critical, compared to 26 percent for all other organizations.

### Data-Literacy Levels by Critical Perception of Open Source



Source: Dresner Advisory Services

Data literacy exists in many forms. More successful organizations tend to have high data “fluency” among their IT teams and business users (see the Research Insight “Make Data Literacy the Foundation of Your Data Culture”). They also report greater frequency of data-driven decision-making.

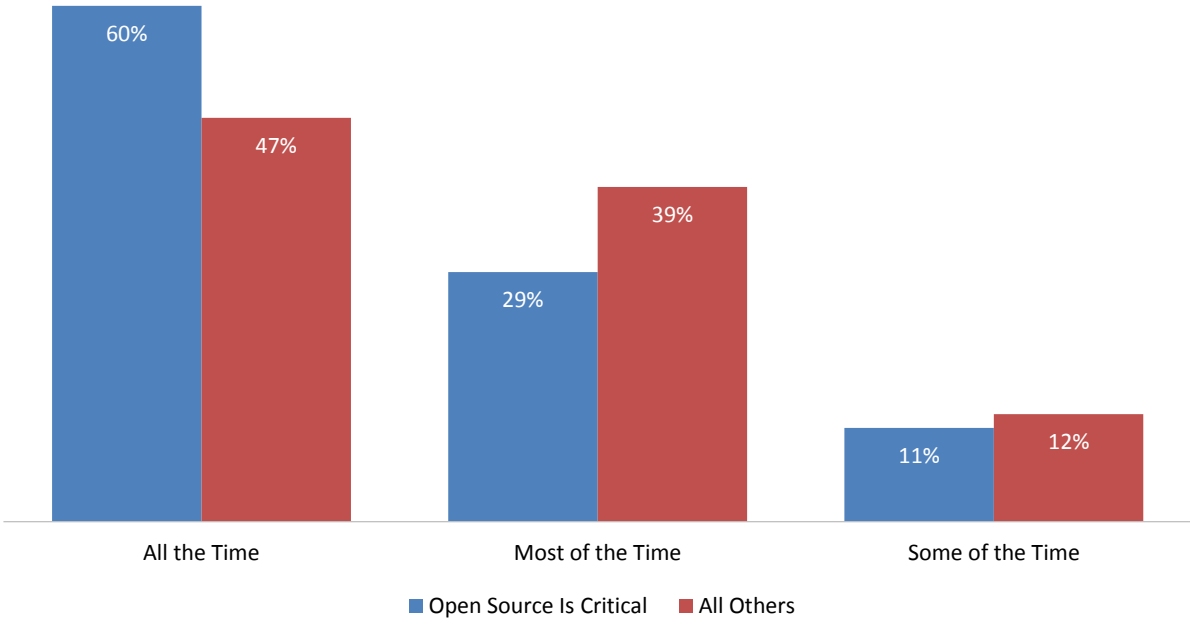
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## Open Source Viewed as Critical, and Data-Driven Decision-Making

Our research also shows that organizations making data-driven decisions all the time or most of the time more often report the highest level of achievement in the goal of better decision-making, and more frequently have the highest level of success with their BI initiatives (see the Research Insight “The Need for Data-Driven Decision-Making Ratchets up in 2021”).

Similar to BI success, organizations that view open source as critical (89 percent) and all others (86 percent) report almost the same total for the two highest levels of making data-driven decisions (all the time or most of the time). However, a majority of organizations that view open source as critical (60 percent) make data-driven decisions all the time 28 percent more often than do those in all other organizations (47 percent).

### Levels of Data-Driven Decision-Making by Critical Perception of Open Source



Source: Dresner Advisory Services

More instances of making data-driven decisions all the time is another indication that those viewing open source as critical might be positively aligned.

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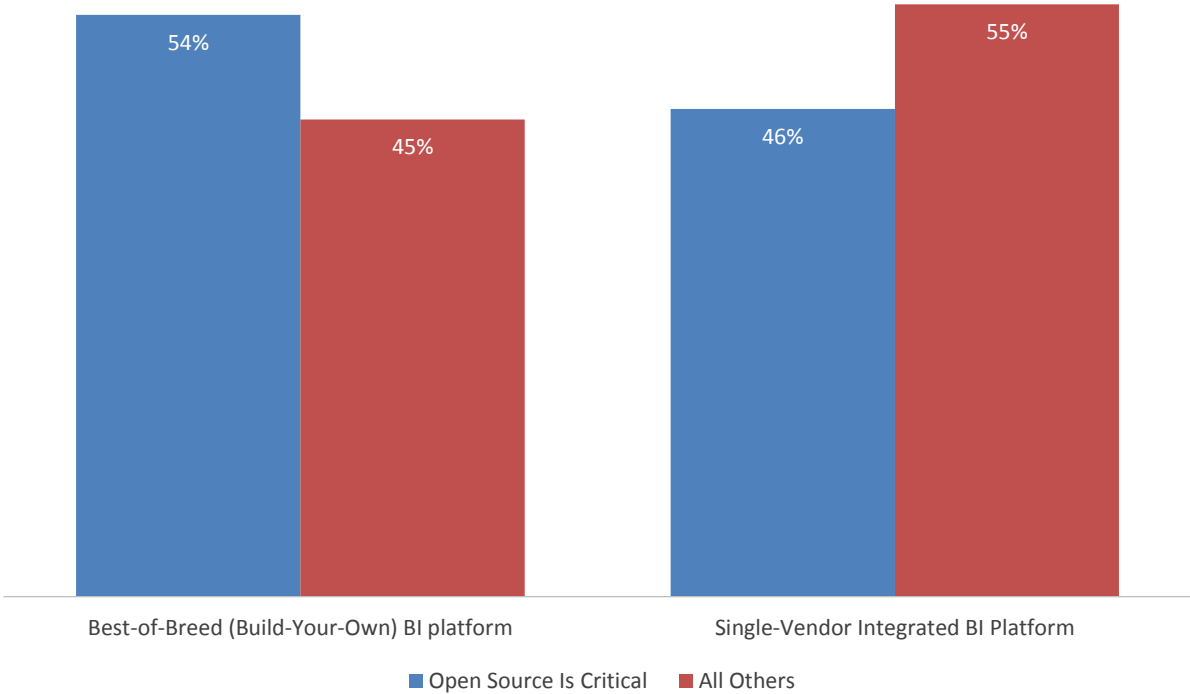
## Open Source as Critical and BI Platform Preference

Unsurprisingly, when it comes to their BI platform choices, respondents in organizations that view open source as critical express a slight preference for best-of-breed / build-your-own environments, compared to a single-vendor integrated BI platform.

All other organizations prefer a single-vendor integrated BI platform at nearly the same rate as organizations that view open source as critical prefer best-of-breed platforms.

However, across both groups, the difference in preference is somewhat small (only 9 percentage points), which highlights further that when it comes to BI platform preference, the market must continue to enable buyers with this choice.

### BI Platform Preference by Critical Perception of Open Source



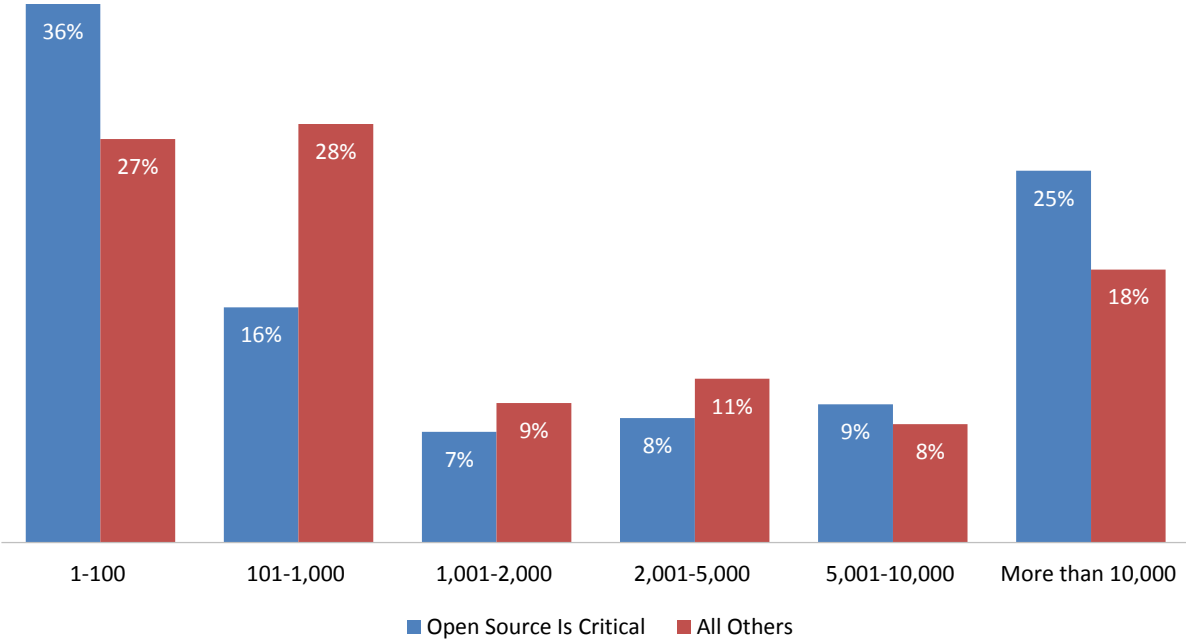
Source: Dresner Advisory Services

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## Largest and Smallest Orgs See Open Source as Critical More Often

Organizations that view open source as critical to their analytics teams in the future most often come from the smallest organizations (36 percent) and the largest organizations (25 percent). Many in the former look to open source for flexibility, low cost, and to enable innovation. Many in the latter have researched and tested open-source software for years, determining it to be enterprise viable. Most other sizes of organizations—especially those with between 1,001-10,000 employees—unsurprisingly cluster around the average (11 percent). Organizations purposely choosing not to keep a close eye on open source may soon find themselves in untenable competitive positions.

### Organization Size by Critical Perception of Open Source



Source: Dresner Advisory Services

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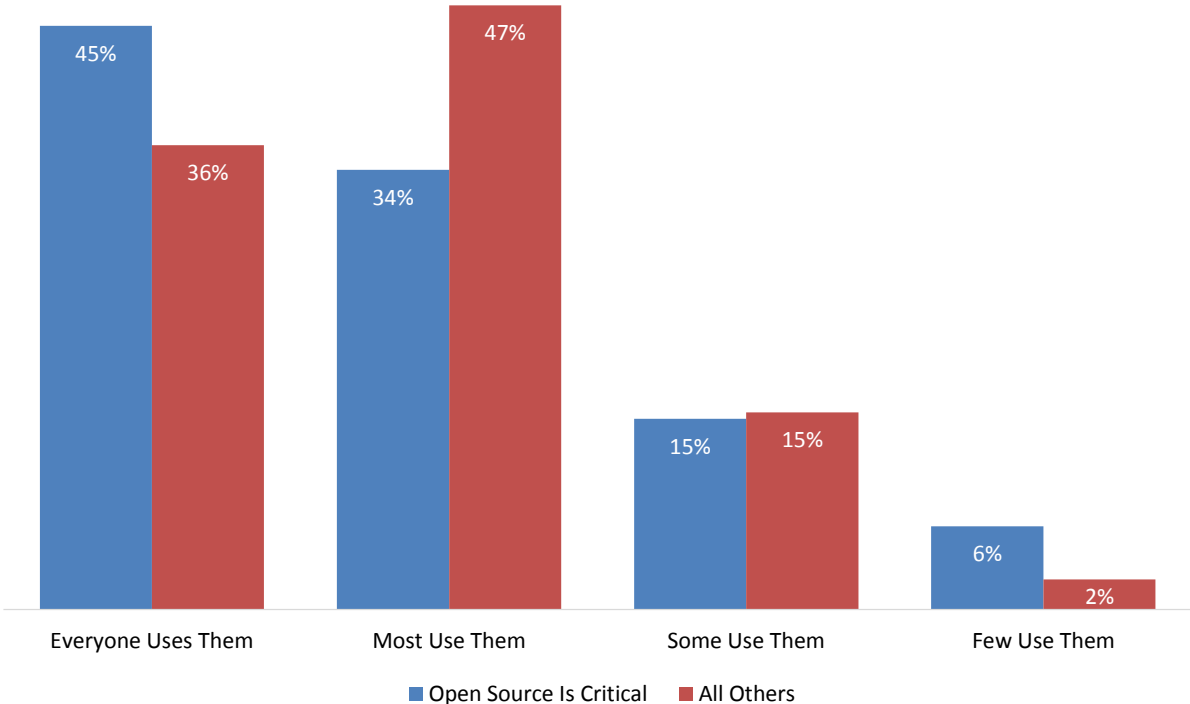
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## Spreadsheets, Tools, and the Future

The most frequently asked-for feature in analytics dashboards and applications is the ability to download the data to a spreadsheet. Our research shows spreadsheets have extremely high use levels, plans for that use likely will stay at similar levels, and that a majority of organizations consider them a strategic tool. (Future published research will explore the topic of spreadsheets in detail.)

Organizations that see open source as critical are more likely to have everyone using spreadsheets. This makes sense: Many open-source software applications can use the spreadsheet CSV-format to either import or export data. In these organizations, other analytic tools augment the spreadsheets by getting users the data they need in their spreadsheets faster. Also, once data is in a spreadsheet, users will not need to do many more data manipulations, which shortens the time to analytical insights.

### Spreadsheet Use by Critical Perception of Open Source



Source: Dresner Advisory Services