

OPENING DOORS WITH OPEN SOURCE

The Case for Modernizing Federal Agencies
with Enterprise Open Source Software

January 2023

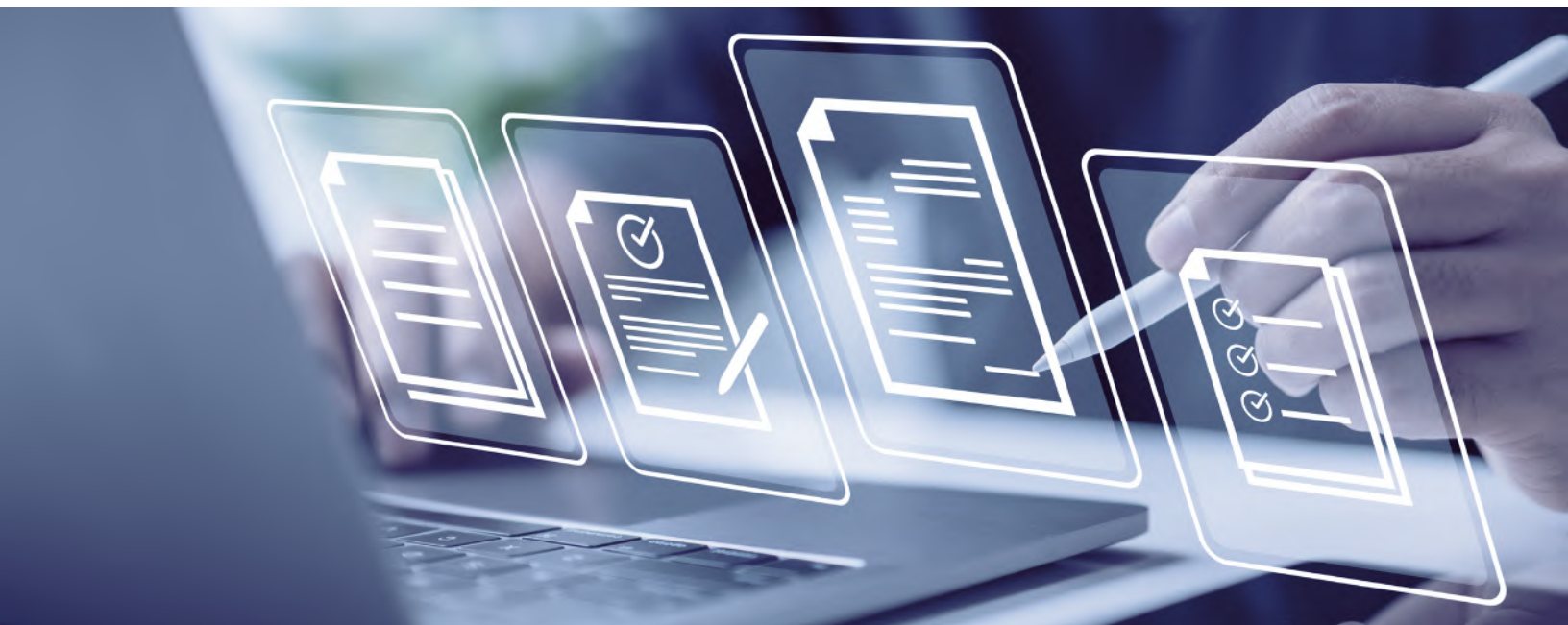
In Partnership with **carahsoft** and **CEOSSG**

INTRODUCTION

Technology modernization has long been a top priority for the U.S. federal government. To achieve this modernization, the public sector must adopt cloud-native technologies along with software components that enable improved, optimized mission capabilities. The open source development model is one approach that is already widely adopted and still gaining momentum across the public sector. With presidential mandates and a recognized need spurring open source adoption, federal IT leaders must determine how free open source software and its enterprise-ready alternatives fit into their purchasing strategies. Government Business Council (GBC) partnered with Carahsoft to uncover current perceptions of open source software, illustrate how enterprise open source software is being used in federal agencies today, and identify trends to watch for.

METHODOLOGY

GBC, the research division of GovExec, fielded this survey to its database of Government Executive, Defense One, Nextgov, and Route Fifty subscribers in September 2022. The pool of 200 respondents represent various leadership roles from federal civilian agencies, independent government agencies, intelligence agencies, and the Department of Defense. For more information on respondents, visit the Respondent Profile section of this report.



BACKGROUND

Congress defines open source software as software for which the human-readable source code is available for use, study, re-use, modification, enhancement, and re-distribution by the users of such software.¹ This open source approach to software development ensures constant innovation and iteration through a decentralized community of thousands of contributors to projects' codebases. Enterprise open source software providers leverage the innovation of community-driven open source projects, while embedding the built-in security, scalability, and support required in enterprise environments, like those of the U.S. government. As the public sector continues to modernize, federal agencies are increasingly relying on enterprise open source for a variety of operations, especially as cloud-native technologies become central to the future of public sector operations. This has led to many government-backed open source initiatives, such as the Obama Administrations' Federal Source Code Policy and the General Service Administration's launch of Code.gov.²

Open source software (OSS) offers several benefits to the public sector:

- ✓ The greater flexibility of OSS allows decision-makers to keep pace with evolving circumstances and technical demands.
- ✓ The open codebases of OSS allow software adaptations and improvements to be made much quicker and subsequently allow departments to better serve their constituents.
- ✓ The open nature of OSS allows it to be shared and reused across agencies, resulting in more cross-agency collaboration and cost savings.
- ✓ Previous extensive use of OSS in the private sector allowed maintainers to develop valuable features and tools that the public sector can leverage.
- ✓ OSS allows full visibility into the code base.
- ✓ By using OSS, federal agencies can avoid vendor lock-in.

PLAYBOOK OVERVIEW

We recommend that all federal agencies, including those in defense or intelligence, get the most out of open source software by taking the following steps:

PLAY 01

Recognize Demand | *Open source software is already widely used*

Over half of respondents say their use of open source software has increased, 78% say they're currently using open source, and 91% say they expect usage to increase over the next two years. Federal agencies should recognize this demand and act accordingly.

PLAY 02

Gauge Impressions | *Most have favorable opinions of open source software*

Only 13% of respondents say their impression of open source software has become less favorable over the last 12 months. In contrast, 39% have a more favorable opinion.

PLAY 03

Evaluate Vendors | *Select a vendor that contributes to the open source community*

Over half of respondents say it would make them more likely to choose a vendor if that vendor contributes to the open source community.

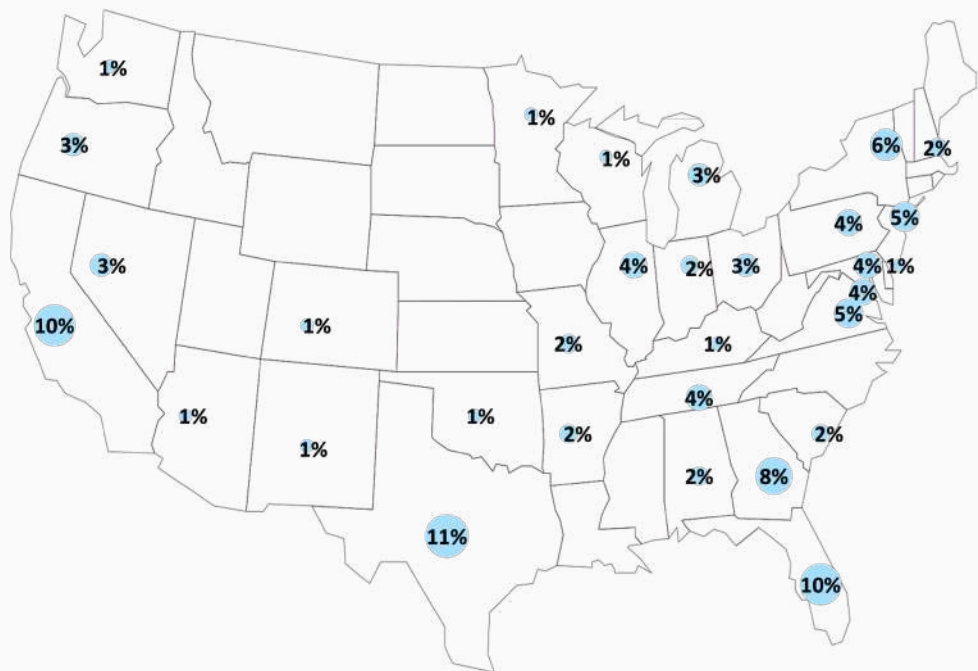
PLAY 04

Embrace Benefits | *Leverage the many benefits of open source software*

Respondents say that the three most important benefits are cost-effectiveness, flexibility and agility, and technology that is cloud-native.

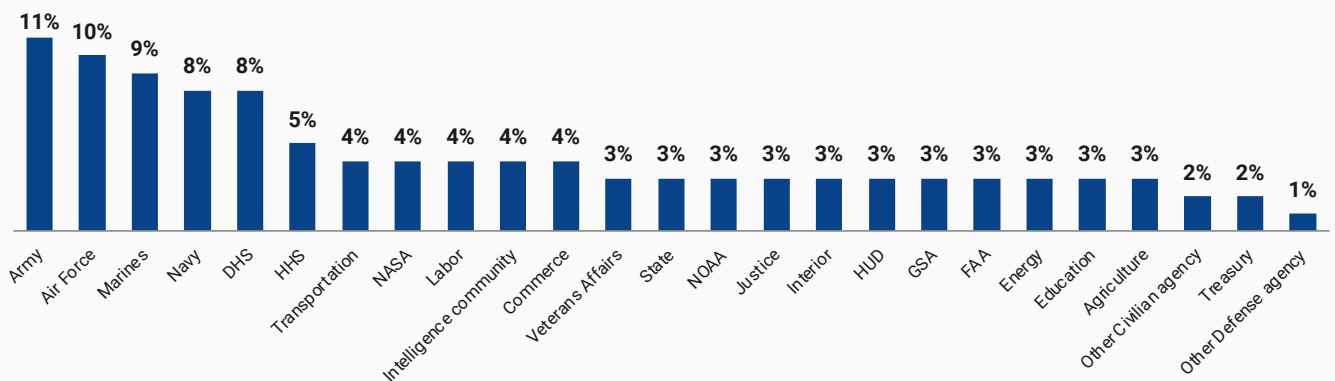
RESPONDENT PROFILE

Map of US based Respondents



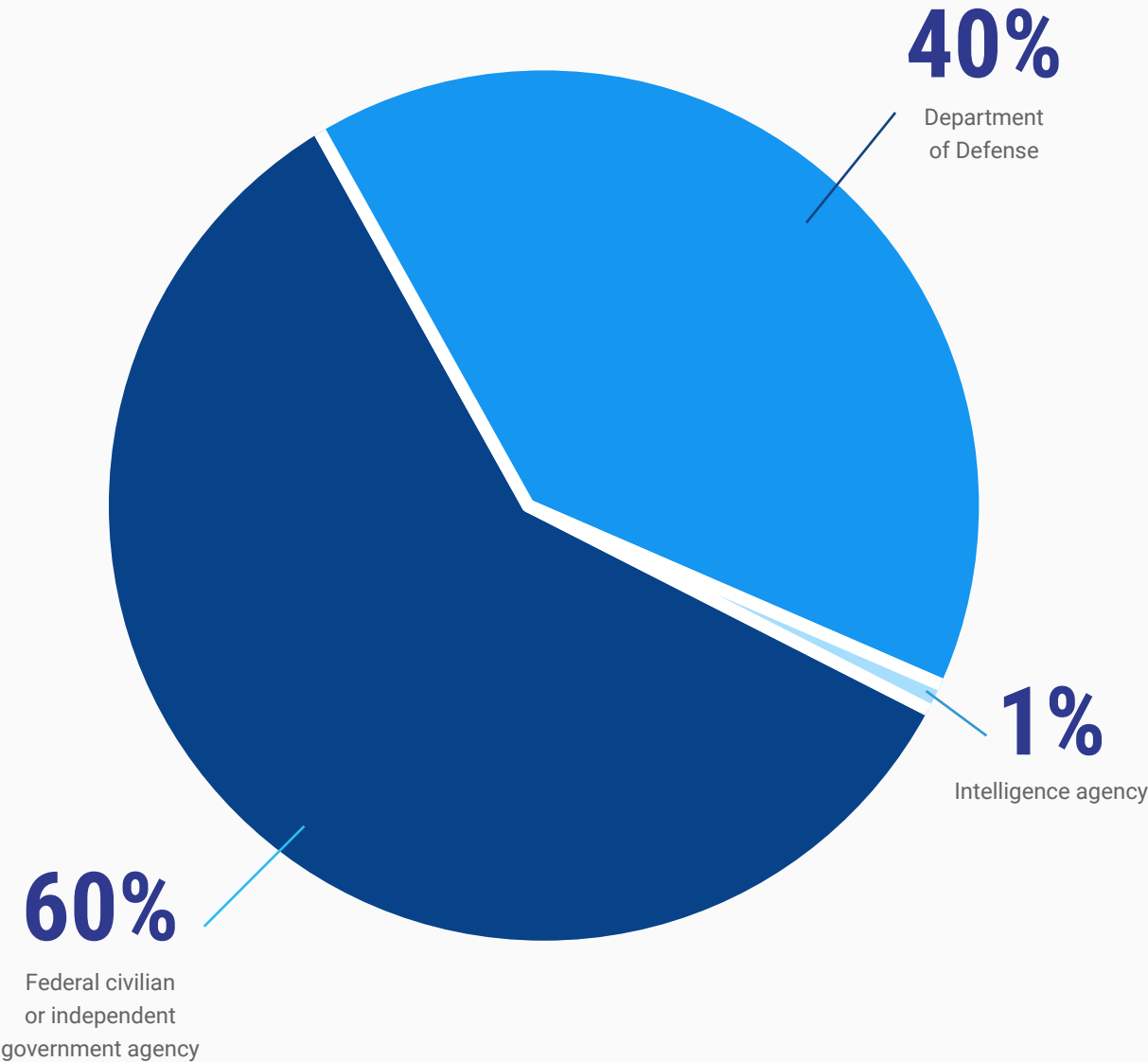
Please verify the federal government agency or military branch you work for:

Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding



RESPONDENT PROFILE

Which of the following best describes the organization you work for?

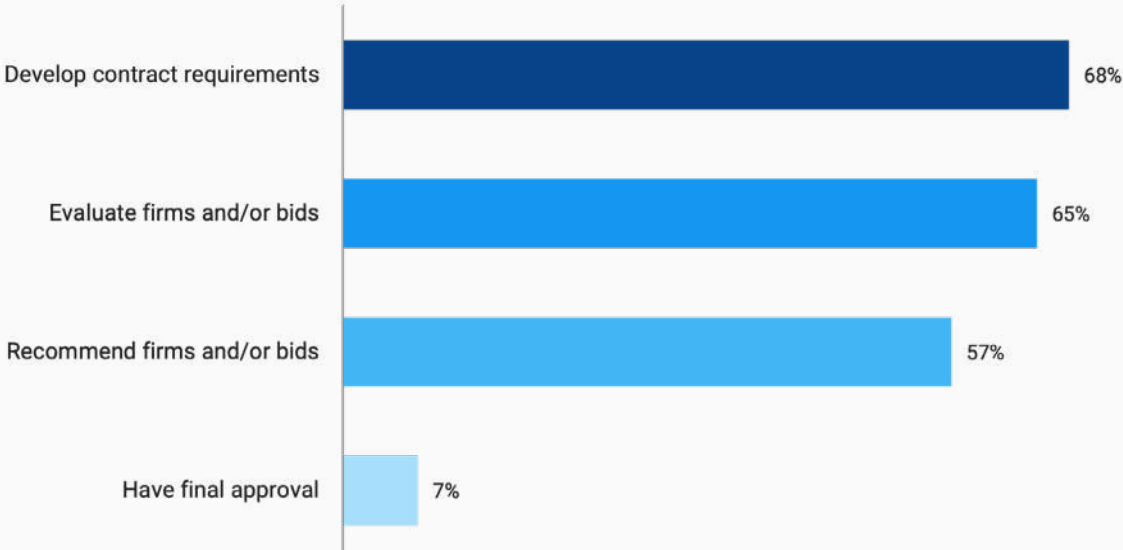


Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding

RESPONDENT PROFILE

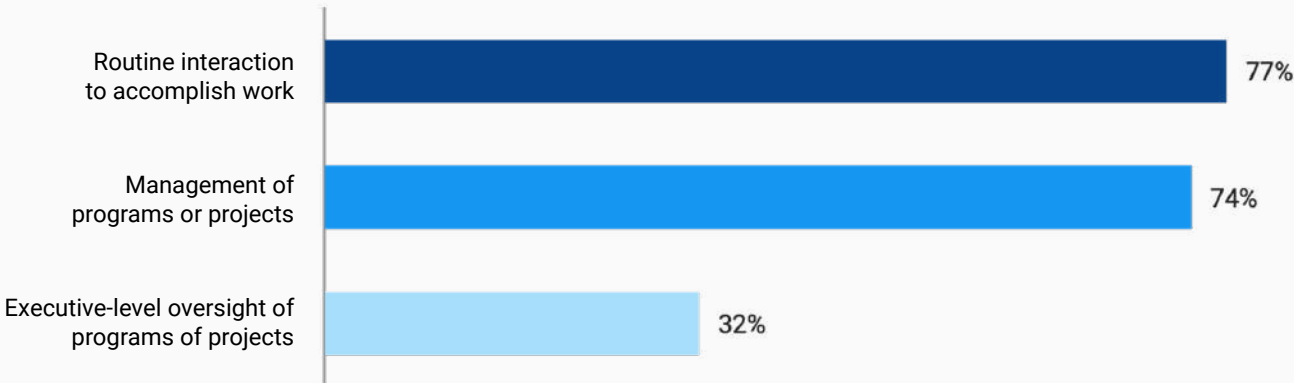
In which of the following ways are you involved in your organization's selection of firms that provide IT products and solutions?

Percentage of respondents, n=200
Respondents asked to select all that apply
Not shown are 9% that selected "none of the above"



In which of the following ways are you involved in your organization's management of these firms once they have been hired or selected?

Percentage of respondents, n=200
Respondents asked to select all that apply
Not shown are 5% that selected "none of the above"

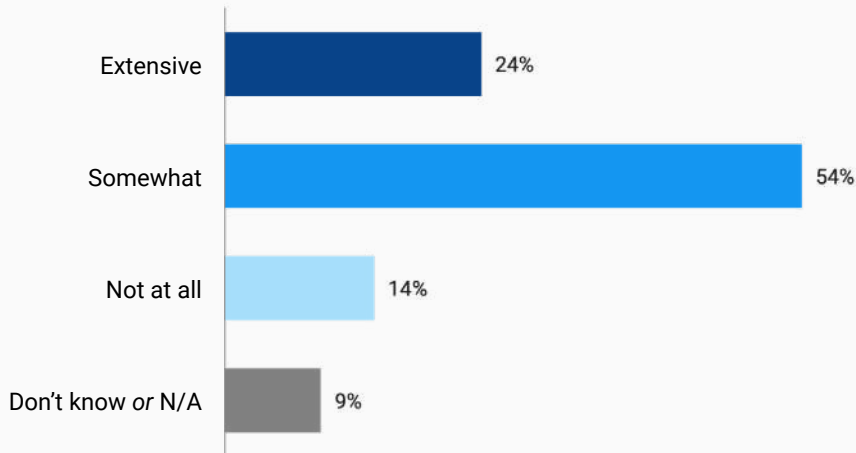


PLAY 01 RECOGNIZE DEMAND

This survey asked respondents several questions to assess the demand for open source software within federal agencies. The majority of respondents indicated that their organization is already using open source. Responses also show that respondents expect their organizations to increase the use of open source two years from now, with 9 out of 10 respondents saying their organization will use open source in the future.

How would you classify your organization's current usage of open source software?

Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding

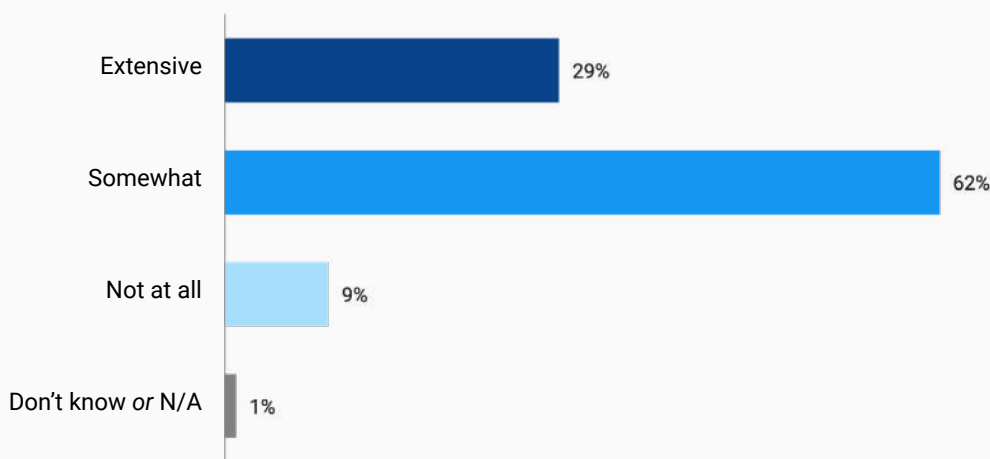


78%

Most respondents (78%) say they currently use open source software at least somewhat.

Thinking of 2 years from now, how would you classify your organization's usage of open source software?

Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding



91%

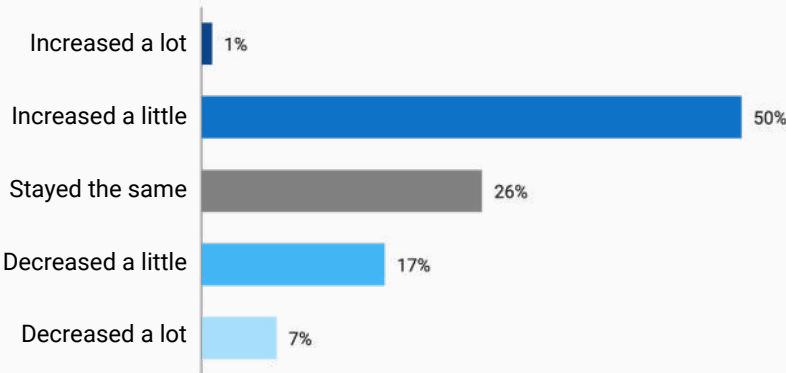
The majority of respondents (91%) think they'll use open source software at least somewhat 2 years from now.

RECOGNIZE DEMAND

Half of all respondents say that use of open source software has increased over the past two years and roughly a quarter say that usage has stayed the same. Overall, responses show that use of open source will continue to increase. In addition, most respondents say their organization uses open source for application development, and nearly half of respondents say it's used for IT infrastructure modernization.

In the past 2 years, has your organization's use of open source ____?

Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding

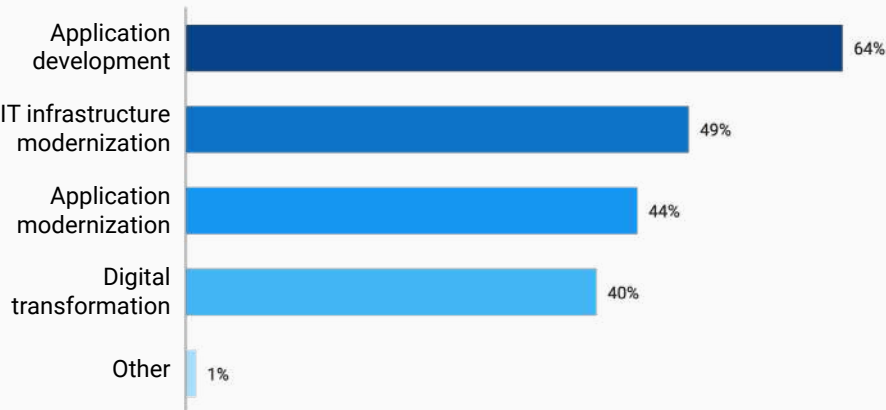


77%

77% of respondents say their organization's use of open source has increased or at least stayed the same in the past 2 years. In contrast, only 24% of respondents say their organization's use has decreased.

How, if at all, is your organization using enterprise open source solutions or technologies?

Percentage of respondents, n=200
Respondents asked to select all that apply



64%

Most respondents (64%) say their organization is using open source for application development.

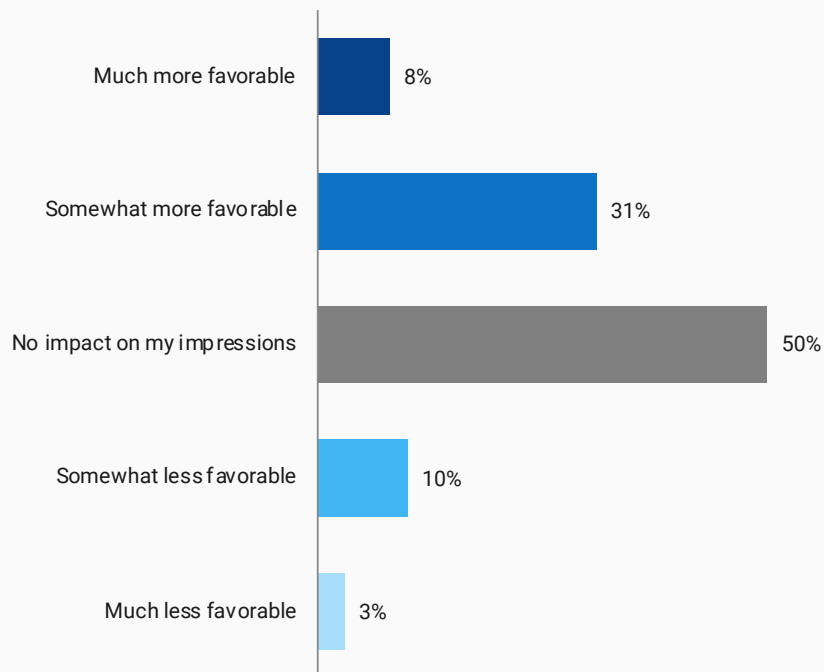
PLAY 02 GAUGE IMPRESSIONS

Many respondents say that their impression of open source has grown more favorable over the past 12 months. Only 13% of respondents had a less favorable impression of open source.

How have your impressions of open source solutions changed over the past 12 months?

Percentage of respondents, n=200

Note: Percentages may not add up to 100% due to rounding



39%

39% of respondents say they have a more favorable impression of open source solutions over the past 12 months. In contrast, just 13% have a less favorable impression.

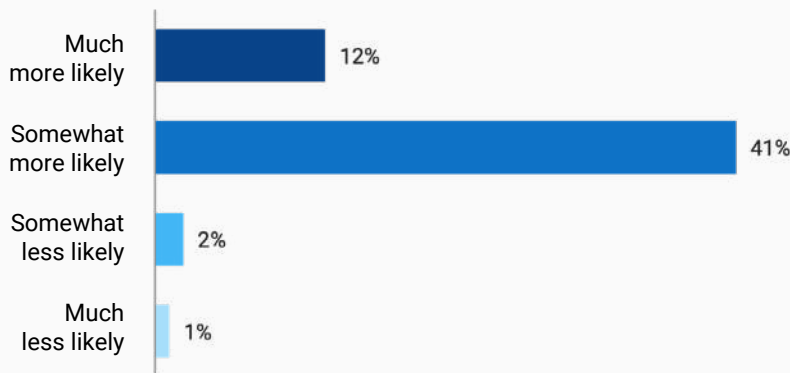


PLAY 03 EVALUATE VENDORS

Not all open source software is created equal. Selecting the right vendor for your needs is critical. Over half of respondents say that knowing a vendor contributes to the open source community makes them more likely to select that vendor. Of those who have this opinion, half say it's because the vendor can influence the development of features their organization needs, and 47% say it's because the vendor is familiar with open source processes.

When deciding on a software vendor, what impact does knowing that they contribute to the open source community have on your decision?

Percentage of respondents, n=200
Not shown are 45% that selected "No impact"
Note: Percentages may not add up to 100% due to rounding

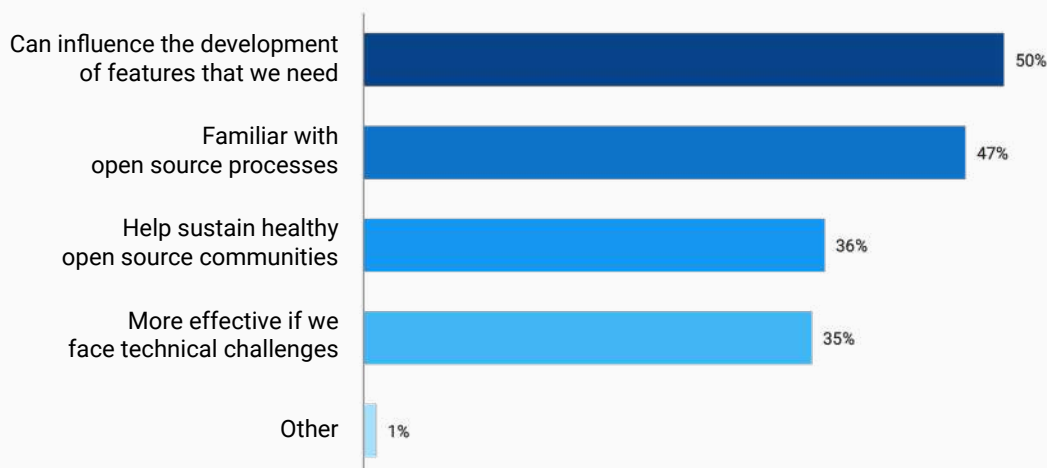


53%

More than half of respondents (53%) say it would make them more likely to decide on a vendor knowing they contribute to the open source community, mainly because they can then influence the development of features needed.

Why are you more likely to select vendors that contribute to the open source community?

Percentage of respondents, n=105
Respondents asked to select all that apply

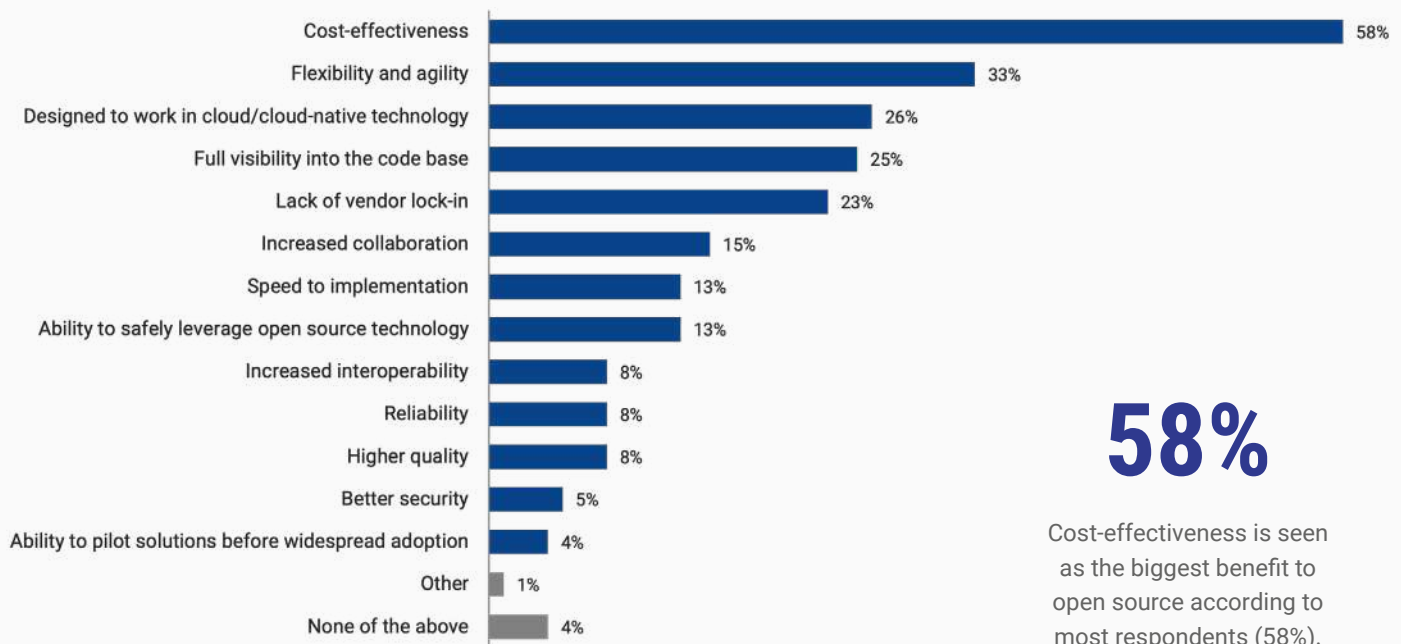


PLAY 04 EMBRACE BENEFITS

There are a variety of benefits to open source software. To understand which benefits are the most important, we asked respondents to select the top three. The majority of respondents indicated that cost-effectiveness is the biggest benefit to using open source in their organization, followed by flexibility and agility.

What do you see as the biggest benefits to using open source solutions in your organization?

Percentage of respondents, n=200
Respondents asked to select up to three



58%

Cost-effectiveness is seen as the biggest benefit to open source according to most respondents (58%).

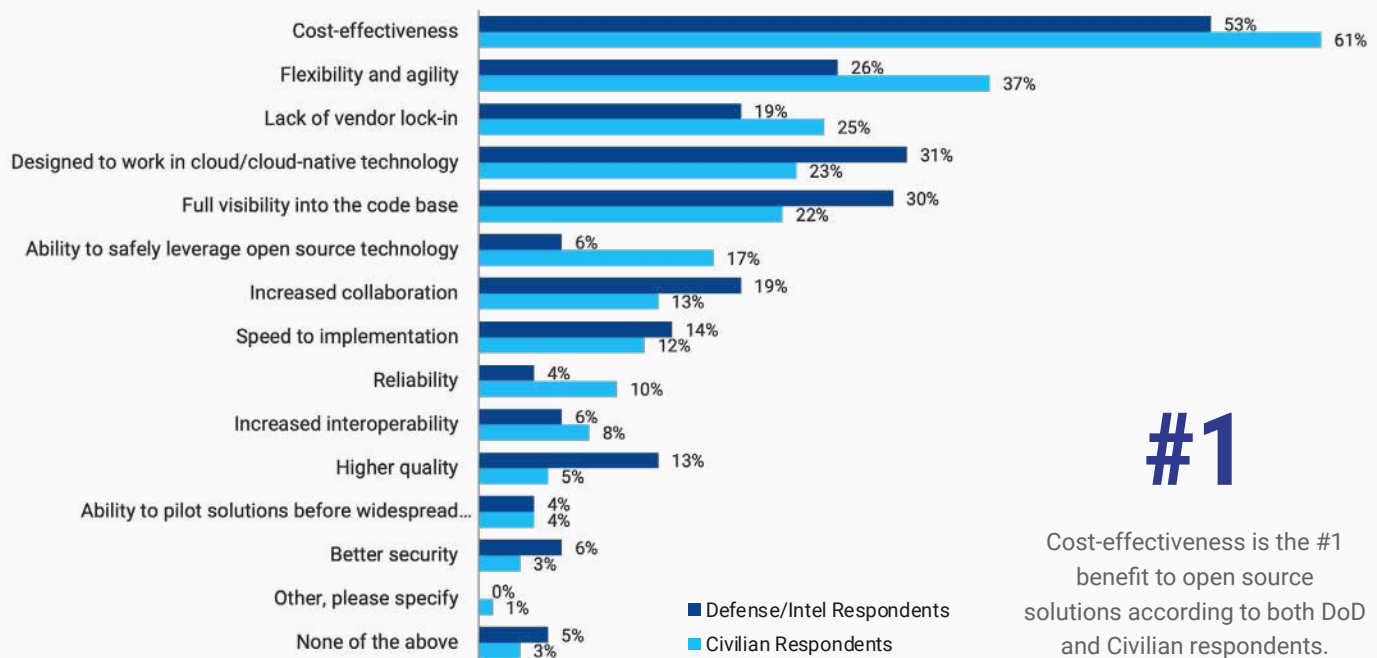


EMBRACE BENEFITS

Throughout the survey, respondents from civilian agencies and respondents from defense and intelligence agencies had virtually the same answers. The chart below shows that Civilian and DoD agencies are both driven by cost-effectiveness, yet the DoD is inclined towards cloud-native technologies and civilians are oriented around flexibility, agility, and lack of vendor lock-in.

What do you see as the biggest benefits to using open source solutions in your organization?

Percentage of respondents, n=200
Respondents asked to select up to three



#1

Cost-effectiveness is the #1 benefit to open source solutions according to both DoD and Civilian respondents.

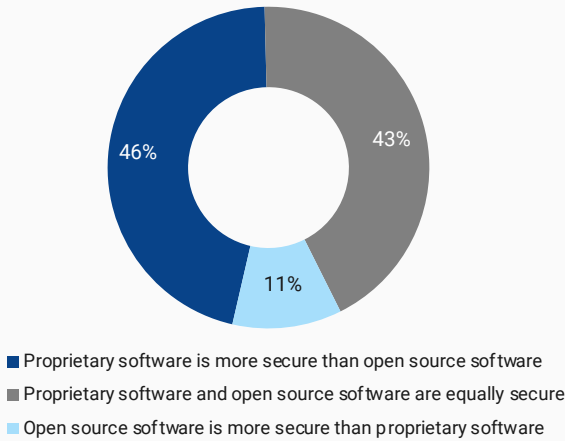


EMBRACE BENEFITS

Respondent opinions were divided when considering the security of open source software. However, of those who view open source as secure, over half say that's due to the fast availability of vulnerability patches. Another 41% say that their organization can use well-tested open source code for in-house applications.

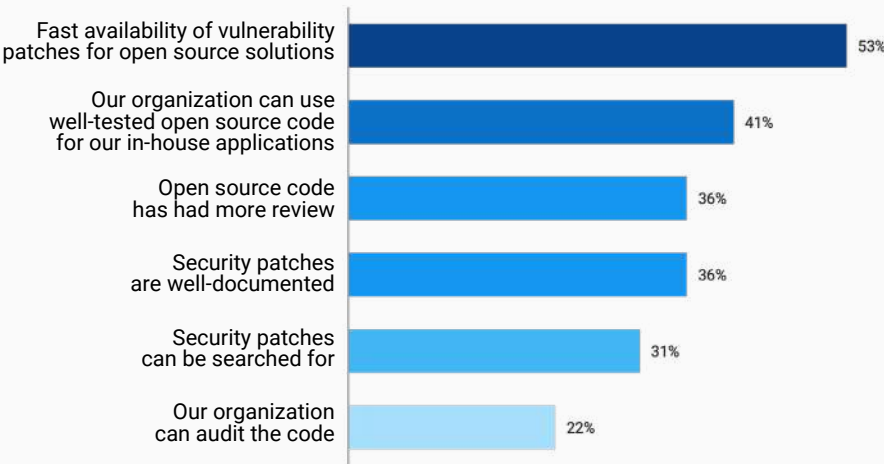
Which of the following best describes your impressions of open source software as compared to proprietary software?

Percentage of respondents, n=200
Note: Percentages may not add up to 100% due to rounding



In what ways is security a benefit of using enterprise open source solutions?

Percentage of respondents, n=107
Respondents asked to select all that apply



53%

Most respondents (53%) selected “Fast availability of vulnerability patches” as a security benefit of using enterprise open source solutions.

CONCLUSION

As displayed in this report, open source software is already widely used by federal agencies and will continue to be a vital investment for the public sector. This survey shows that perceptions of open source software have only grown more favorable. The majority of respondents say their organization's use of open source has increased and that this trend will continue in the years to come. Moreover, respondents say they want to work with vendors that contribute to the open source community. This survey also reveals that the top use cases for open source, according to respondents, are application development and IT infrastructure modernization. Lastly, this survey illustrates that open source software offers many appealing benefits, and that increased flexibility and reduced costs in particular make open source an appealing choice for federal agencies.



A MESSAGE FROM OUR SPONSOR

The Coalition for Enterprise Open Source Software for Government (CEOSSG) was established in 2014, serving as a leading industry advocate on Capitol Hill and within the Administration for supported Open Source Software (OSS) technology.

Virtually all CEOSSG member companies have their roots in the OSS community and recognize the fundamental differences between OSS products and OSS projects. As Red Hat's Gunnar Hellekson once wrote, "It's especially important to distinguish between open source products, which are maintained and supported by a company, and open source projects, which are maintained by a community. They are both valuable, but they each demand different workflows, talent, and policies... The wonderful thing about open source is that it offers this choice, a continuum between more conservative, stable, and risk-averse products, and faster, more agile software projects – and everything in between. In our experience, agencies often find that adopting a paid, enterprise open source platform better aligns with the scale and scope of their project, providing centralized, vendor-backed support, regular patches and updates, tools and features necessary for deployment at scale, as well as key security certifications that accelerate agency adoption."

OSS continues to be a critical component of technology modernization within federal agencies, providing a lower total cost of operation while leveraging the innovation and velocity of the open source development model. The findings in this report reinforce the value proposition of the open source development model, and federal agencies' increasing embrace of the flexibility open source provides. CEOSSG encourages federal acquisition professionals to follow the applicable Federal Acquisition Regulations and perform a life cycle cost analysis to determine if agency needs are best met by community supported free OSS or by its EOSS counterparts.

To learn more about how the combined power of community-driven innovation and industry-leading technical support is expanding the government's capacity for transformation, read FCW and Carahsoft's report, [The Open Source Revolution in Government](#).



Rob Efrus

*Founder and CEO of Efrus Federal Advisors LLC
A founding member of CEOSSG*





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CITATIONS

1. <https://www.congress.gov/115/plaws/publ232/PLAW-115publ232.pdf>
2. <https://federalnewsnetwork.com/commentary/2022/02/dispelling-myths-in-the-federal-use-of-open-source-software/>

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