

2022

Cloud Infrastructure Report

A survey of IT and business
cloud decision makers



Introduction

Today, there are many technological innovations available that can help companies save time and money and meet other business objectives that they may set. And a growing number of organizations — especially larger enterprises — rely on cloud infrastructures to store, manage, analyze, and secure their data. To ensure they get the most from their investment, more and more companies are implementing the practice of cloud financial operations (FinOps), which unites business strategy with enterprise-wide accountability to manage and optimize cloud spend.

Companies may also create a Cloud Center of Excellence (CCoE) that pools and focuses on their internal skills and resources to increase their cloud management expertise. When a CCoE is combined with a dedicated Managed Service Provider (MSP) in cloud operations, enterprises can go deeper into their cloud journey and often gain a more well-rounded approach to their cloud transformation projects.

This research examines the current experiences with public cloud infrastructure and the approaches used today to deliver the most significant value from these investments. How confident are companies in managing their public cloud costs? Do they have the appropriate cloud management capabilities to optimize their cloud operations? What's driving their cloud transformational goals? Is the use of CCoEs continuing to grow along with their scope of responsibilities? Are companies relying on MSPs for their cloud operations?

The following report, sponsored by Spot by NetApp and conducted by Dimensional Research, is based on an online survey of cloud infrastructure stakeholders working at companies with more than 500 employees. A total of 305 qualified individuals in IT or business completed the study. All had decision-making responsibility for significant public cloud infrastructure investments. Specific questions were repeated from similar 2017, 2019, and 2021 studies to investigate changing trends.

Key findings



Finding #1

Managing cloud operations in 2022 will grow in scope

- 2022 transformation goals include increasing the use of cloud technology (63%), migrating additional services to the cloud (52%), and optimizing cloud costs (50%)
- 90% report they have or plan to have a Cloud Center of Excellence (CCoE)
- 61% of those who currently have a CCoE say that their responsibilities will grow in 2022



Finding #2

Cloud cost management is still a work in progress

- The confidence in visibility into public cloud costs has dropped in the past year; 21% were “very” confident in 2022, down from 31% in 2021
- 62% will focus on cost management in 2022
- 91% use cloud purchase options, such as reserved instances or savings plans, but most (68%) report they aren’t using them effectively
- 96% say FinOps is important to cloud success, but only 10% have a mature FinOps practice



Finding #3

MSPs play a key role in cloud operations

- 71% rely on a Managed Service Provider (MSP) for their cloud operations
- 100% of companies that work with an MSP for cloud operations say that they have benefited from that relationship
- 83% of companies that work with an MSP for cloud operations rely on them for their FinOps practice

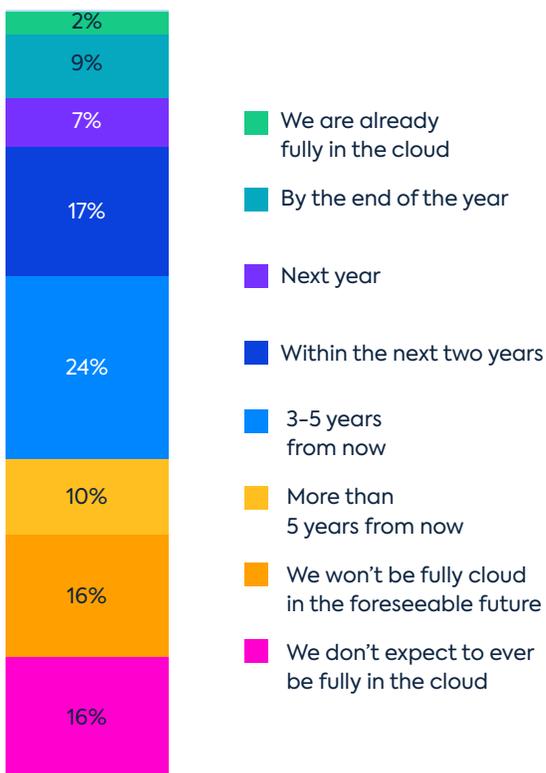
Detailed findings



Finding #1:

Managing cloud operations in 2022 will grow in scope

When does your company expect to be fully in the public cloud? Choose the one option that most closely applies.



Companies are reporting a wide range of 2022 cloud transformational goals

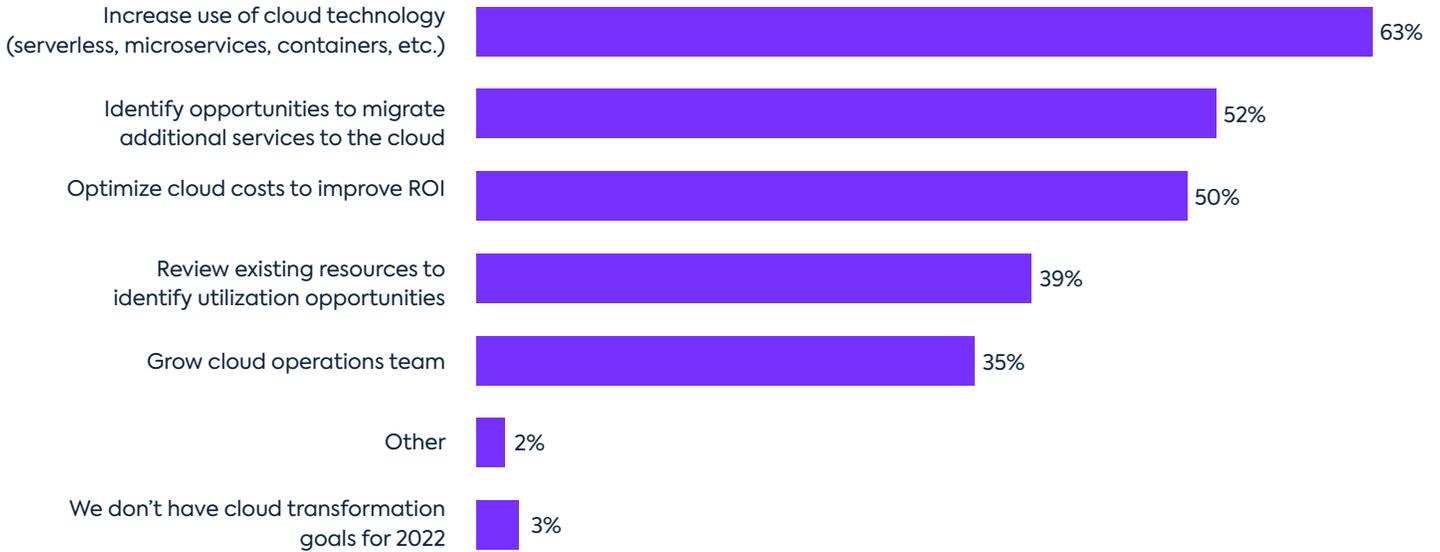
Cloud migration, whether full or partial, represents a major transformation of how an organization enables IT and digital initiatives. A typical cloud migration strategy involves multiple steps. First comes the discovery phase, learning what can be moved to the cloud and what requires refactoring. After some research, the planning initiates with a proof-of-concept built to test the viability of the cloud for given use cases. Once the proof-of-concept has been approved, the actual move to the cloud begins.

The move to the cloud has happened aggressively in the past few years. This research demonstrates that cloud migration efforts will continue at a strong pace. While only 2% are fully in the cloud today, most companies (84%) do expect get there at some point. This includes well over half (59%) who report they will be fully in the public cloud within five years.

But the work is just beginning once workloads are moved to the cloud. Enterprises must continue to take steps post-migration to get the most from their cloud investment.

When asked about their top cloud transformational goals for 2022, stakeholders report a wide range of initiatives. The top goal cited is increasing their use of cloud technology (63%) followed by identifying opportunities to migrate additional services to the cloud (52%), optimizing cloud costs to improve ROI (50%), reviewing existing resources to find utilization opportunities (39%), and growing their cloud operations teams (35%). A few individuals also wrote in a range of "other" goals, including increasing API integrations, migrating desktop applications to cloud applications, and increasing their cloud security posture management in containers.

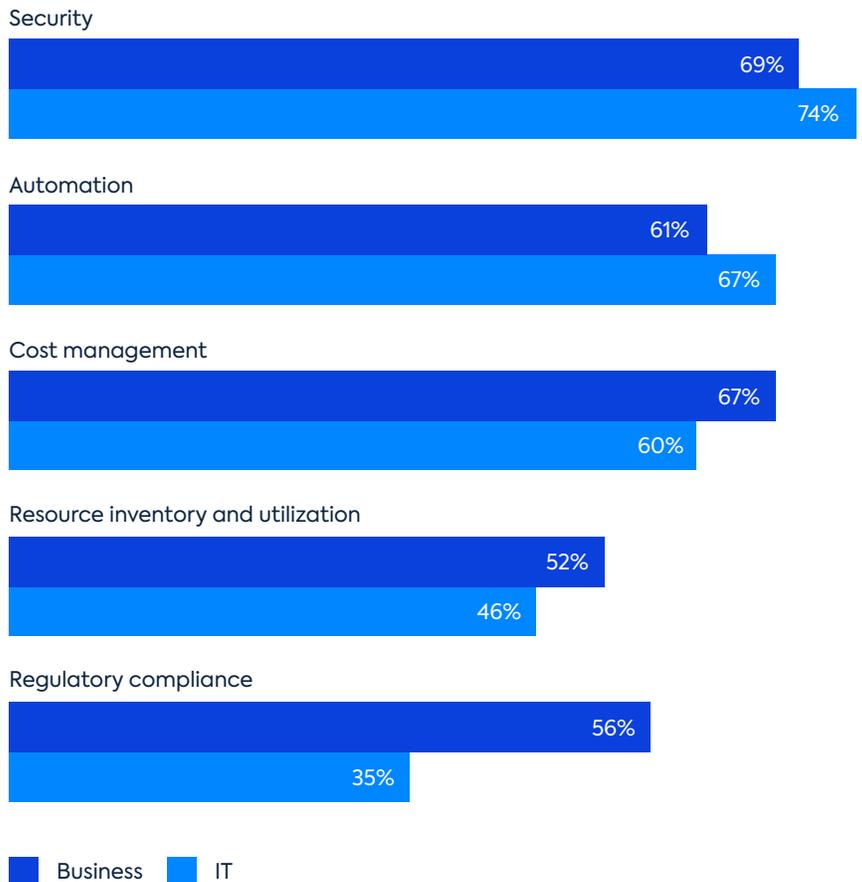
What are your company’s top goals for cloud transformation in 2022? Choose up to three of the following.



In addition to these broader goals, companies recognize the need to improve cloud operations and management. Overall, cloud decision makers are aligned that security (72%), automation (65%), cost management (62%) and resource inventory and utilization (48%) are top cloud areas for improvement in 2022. Some differences in responses arise between business and IT functions, with the former ranking cost management and resource utilization as relatively higher priorities than IT, and IT more frequently citing security and automation as improvement focus areas.

This data would suggest companies should seek to develop programs and utilize tooling that allow them to improve in security, automation, cost management, resource utilization and compliance concurrently, with each optimization creating multiple benefits whenever possible.

Which of the following areas of your company’s public cloud use would your company like to improve for 2022? Choose all that apply.





*For this survey, a **Cloud Center of Excellence (CCoE)** is a cross-functional team of people responsible for developing and managing the cloud strategy, governance, and best practices that the rest of the organization can leverage to transform your business using the cloud. The CCoE leads the organization as a whole in cloud adoption, migration, and operations. It may also be called a Cloud Competency Center, Cloud Capability Center, or Cloud Knowledge Center.*

Wide adoption of CCoE in 2022

How will enterprises organize their strategies and teams to achieve these objectives? As enterprises continue to increase public cloud infrastructure investments, they must also consider how to grow their cloud expertise, whether this means adding headcount, educating existing personnel, investing in additional tools, reorganizing responsibilities, and more. Cloud maturity includes centralization and coordinating decision making across teams. We gave participants a definition of a Cloud Center of Excellence (CCoE) and asked them questions about it to understand this element of cloud maturity.

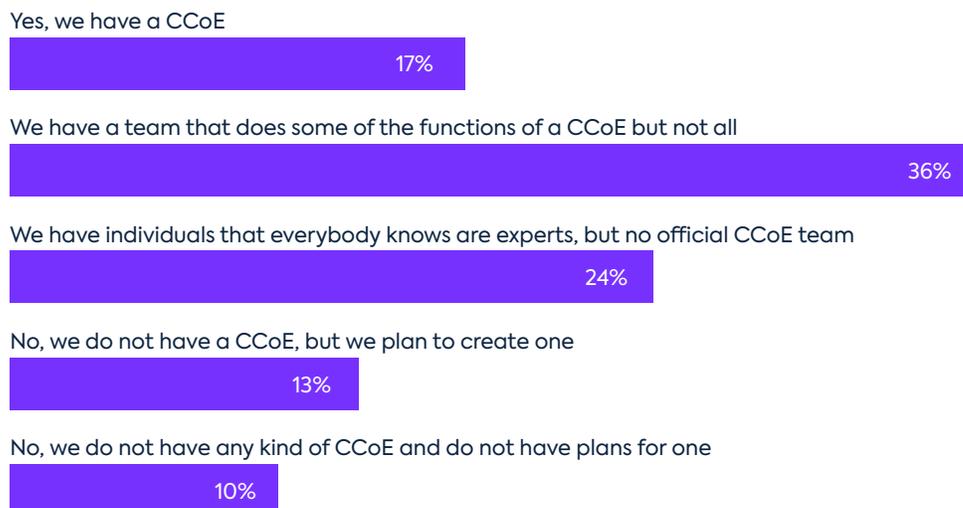
When we compare the corporate establishment of CCoEs year over year, this steady growth trend continues with 90% reporting that they have or plan to have a CCoE, up from 89% in 2021, 85% in 2019, and 75% in 2017, respectively.

Total that have or plan to have a formal or informal CCoE



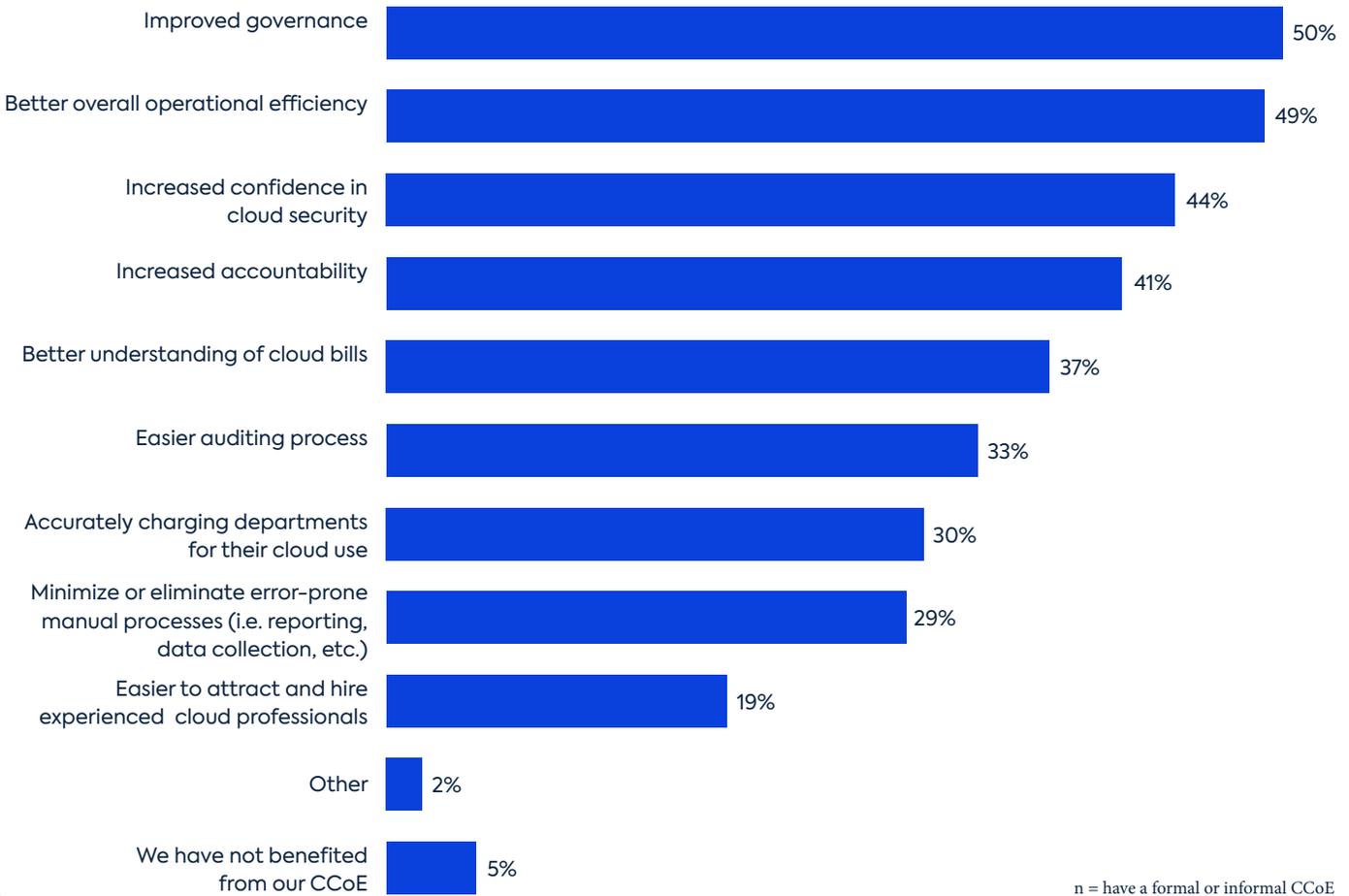
Without a doubt, the use of a CCoE is ubiquitous among companies. However, their maturity levels vary from those organizations having a formal CCoE (17%) to a team that does some of the CCoE functions (36%) to a few individuals with cloud expertise (24%) to only having plans to create a CCoE (13%).

Given this definition, do you consider your company to have a CCoE?



For organizations that have adopted a CCoE — either an informal or formal group of experts — 95% say they benefited from this leadership. The three most common values cited are improved governance (50%), better overall operational efficiency (49%), and increased confidence in cloud security (44%).

How has your organization benefited by having a CCoE (formal or informal group of experts)? Choose all the apply.

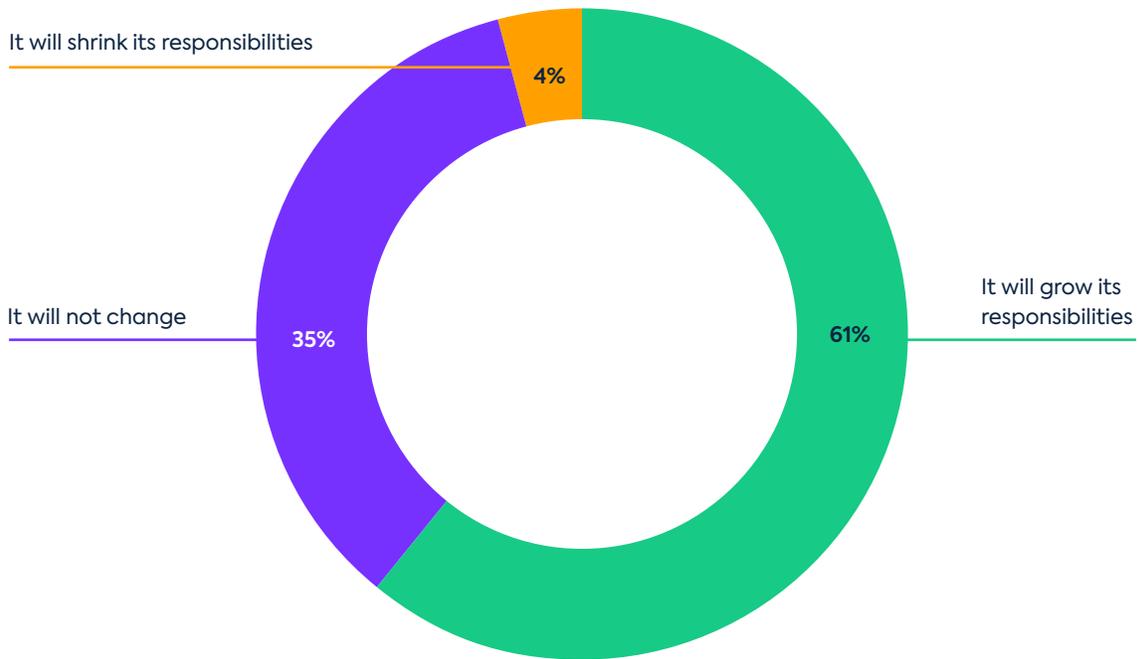


Organizations with a more mature CCoE reported higher levels of benefits compared to those with less established CCoEs. For example, among companies with a formal CCoE, 61% reported improved governance, 51% say they increased confidence in cloud security, and 43% cited more accurate levels of charging departments for their cloud use. These responses were much higher than those reported by cloud stakeholders with a CCoE comprised of informal teams (50%, 43%, and 27% respectively) or individual experts (41%, 40%, and 25% respectively).

Most CCoEs plan to increase their level of responsibilities this year

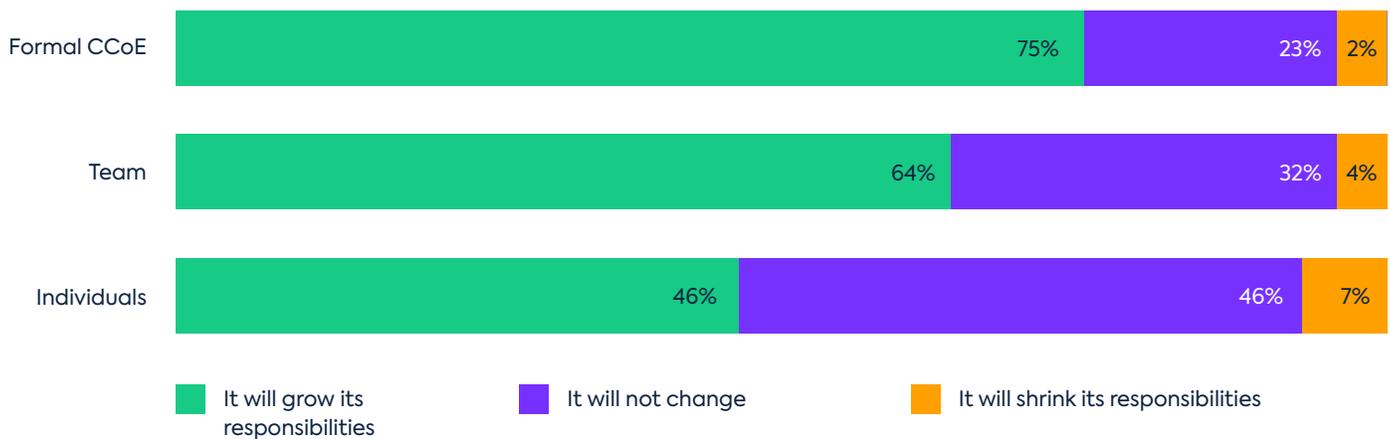
As cloud stakeholders formulate their plans for the year, 61% want to grow their CCoE's responsibilities in 2022. And in organizations with dedicated teams or formal CCoEs, this growth projection increases to 64% and 75%, respectively. This positive trend suggests that organizations with more mature CCoE practices see positive results and are willing to make more investments in their cloud expertise.

What are your company's plans for your CCoE (formal or informal) in 2022?
Choose the one answer that most closely applies.



By CCoE Adoption

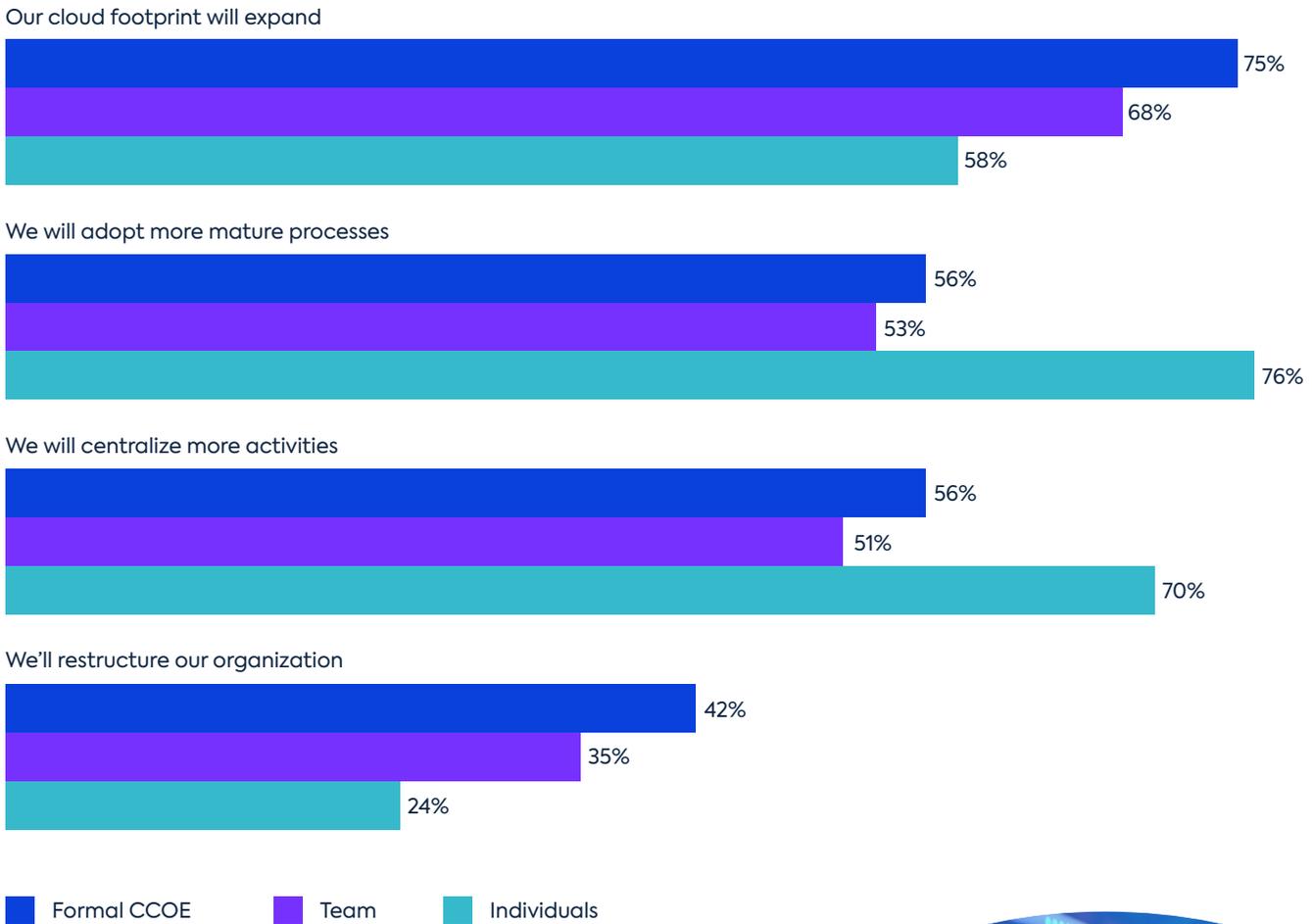
n = have a formal or informal CCoE



When asked about what is driving the growth in their responsibilities regardless of the formality of the CCoE, 67% of cloud decision makers say it is the expansion of their cloud footprint followed by the adoption of more mature processes (59%), and the centralization of more activities (57%). The primary factors driving

growth in CCoEs differ depending on the informal or formal nature of the practice. Organizations with a few individuals or smaller CCoE teams want to grow in 2022 by adding more processes and structure (76% for individuals, 53% for teams). In contrast, more mature CCoEs will focus on expanding their footprints (75%).

What will drive the growth of your company’s formal or informal CCoE? (By CCoE adoption)



n = CCoE will grow in 2022



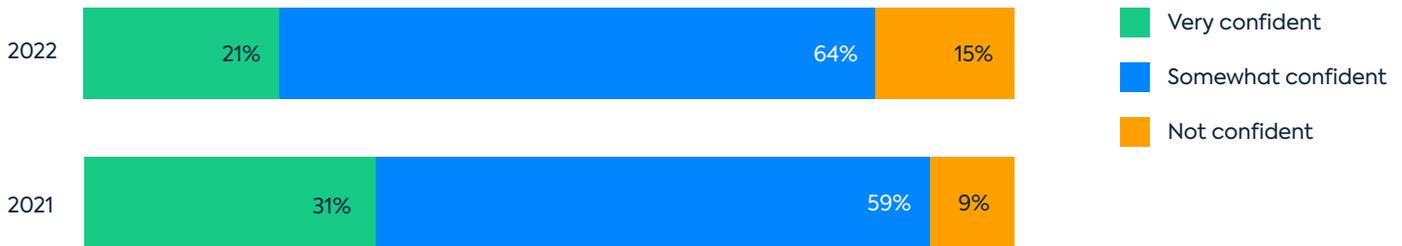
Finding #2:

Cloud cost management is still a work in progress

Confidence in managing public cloud cost centers dropped notably this past year

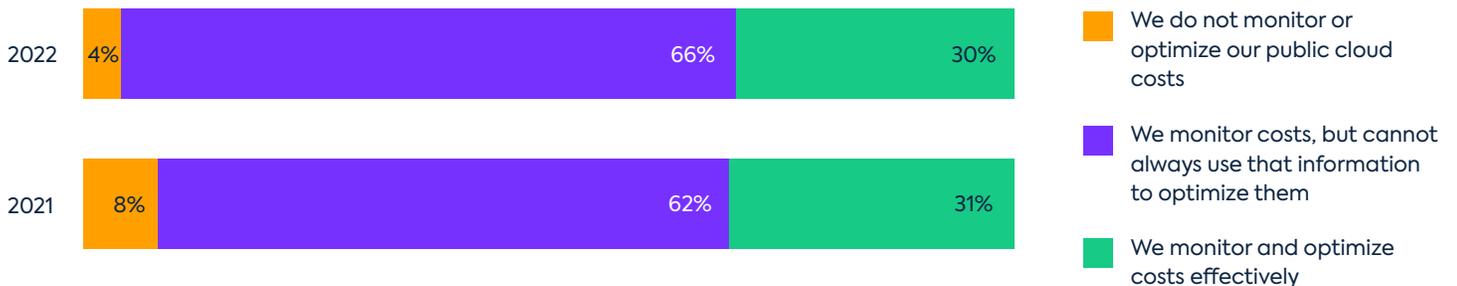
As more companies invest deeper in public cloud infrastructure and the number of cloud users matures, they must consider the business value gained from these resources. Are they paying for resources used or wasting cloud spend on resources provisioned inefficiently? When cloud stakeholders were asked about the visibility into their company’s public cloud costs during the past year, just 21% were “very” confident, down from 31% in 2021.

How confident are you that your company has visibility into all aspects of your company’s public cloud costs?



To better understand this lack of visibility, we asked stakeholders about their ability to monitor and optimize public cloud costs and how this has changed in the past year. The research shows that cost management capabilities are not getting better with time. Only 30% of cloud decision makers said they are able to monitor and optimize costs effectively, down from 31% in 2021. Given the investments made in public cloud infrastructure, it is particularly concerning that 70% report that they cannot effectively monitor and optimize cloud costs.

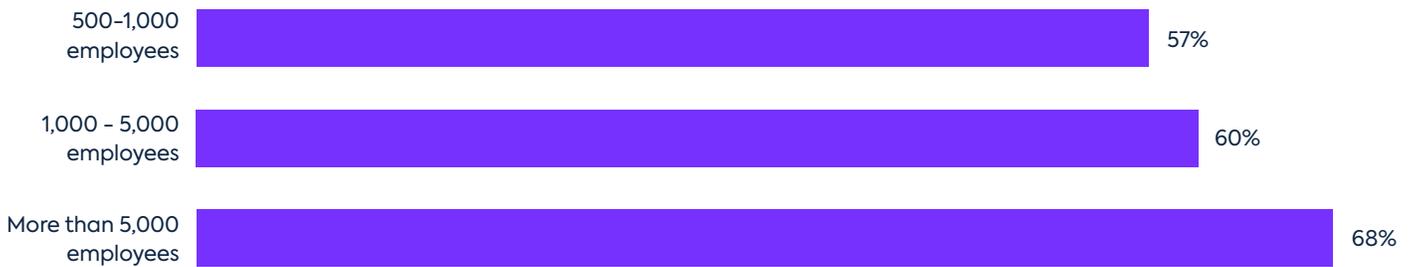
How would you describe your company’s ability to monitor and optimize public cloud costs? Choose the one answer that most closely applies.



Companies will focus on cost management in 2022, especially larger companies

Not surprisingly, one of the key takeaways for 2022 is an increased spotlight on cost management for cloud infrastructures. Overall, 62% of companies report they will focus on improving cost management this year. And this trend is even more critical for larger enterprises, with 68% aiming to improve cost management in 2022.

Will focus on improving cost management in 2022 (By Company Size)



62%
will focus on
improving cost
management
in 2022



Nearly all companies use some kind of cloud purchase option, but not always effectively

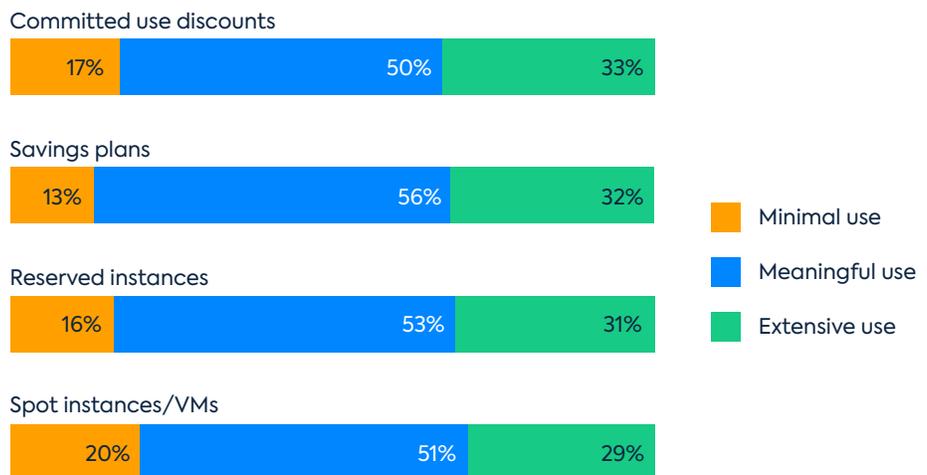
There are many procurement options for cloud computing. One of the primary ways enterprises can get the most return on their investment is by taking advantage of multiple cloud purchase options that offer various commitments or usage discounts based on their specific needs. A full 91% of cloud decision makers report that they take advantage of cloud purchase options to minimize costs. The top cloud purchase option cited was reserved instances (52%), followed by committed use discounts (47%), savings plans (42%), and spot instances (39%). Furthermore, 61% of companies use more than one of these options for minimizing cloud costs.

Does your organization take advantage of any cloud purchase options to minimize cloud infrastructure costs? Choose all that apply.



Notably, all types of cloud purchase options are used at fairly similar levels, with cloud stakeholders reporting a wide range of adoption for each type.

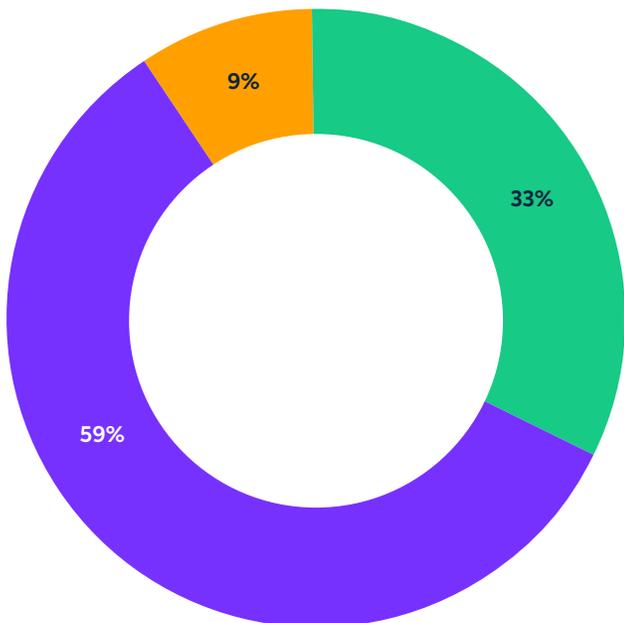
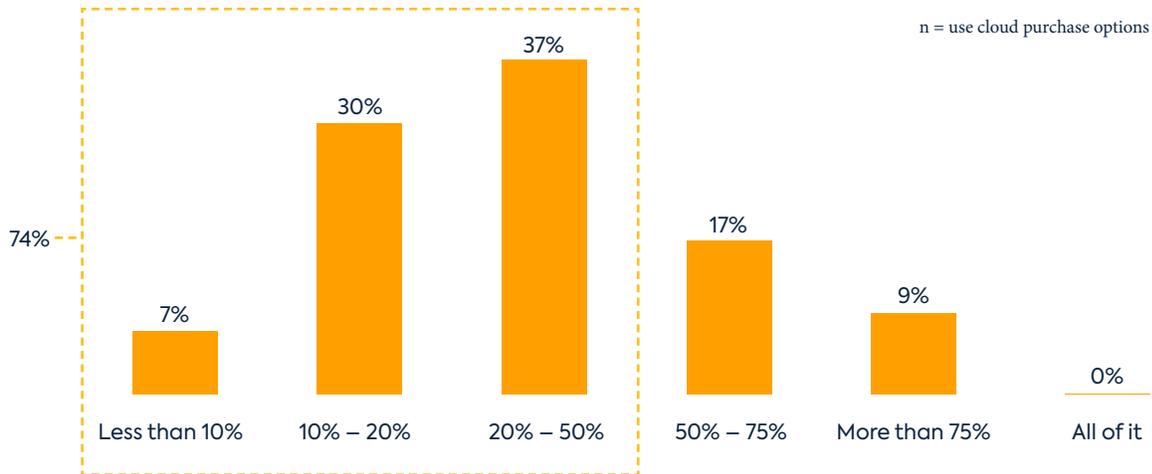
How extensively does your organization use each of the following types of cloud purchase options?



n = use cloud purchase options

While cost management in a complex, multi-cloud environment is no easy challenge, the discounts and purchase options offered by many cloud providers can go largely underutilized — thus leading to higher infrastructure spend than necessary. These costs can add up significantly over time and considerably lower an enterprise’s return on investment. While many companies are leveraging cloud purchase options to manage cloud costs, this is still not the norm for most. Nearly three out of four companies (74%) use purchase options for less than half of their infrastructure spend.

Think of your organization’s overall use of cloud purchase options. To the best of your knowledge, approximately how much of your public cloud infrastructure spend leverages cloud purchase option like Reserved Instances, Savings Plans, Spot Instances/VMs or Committed Use Discounts?



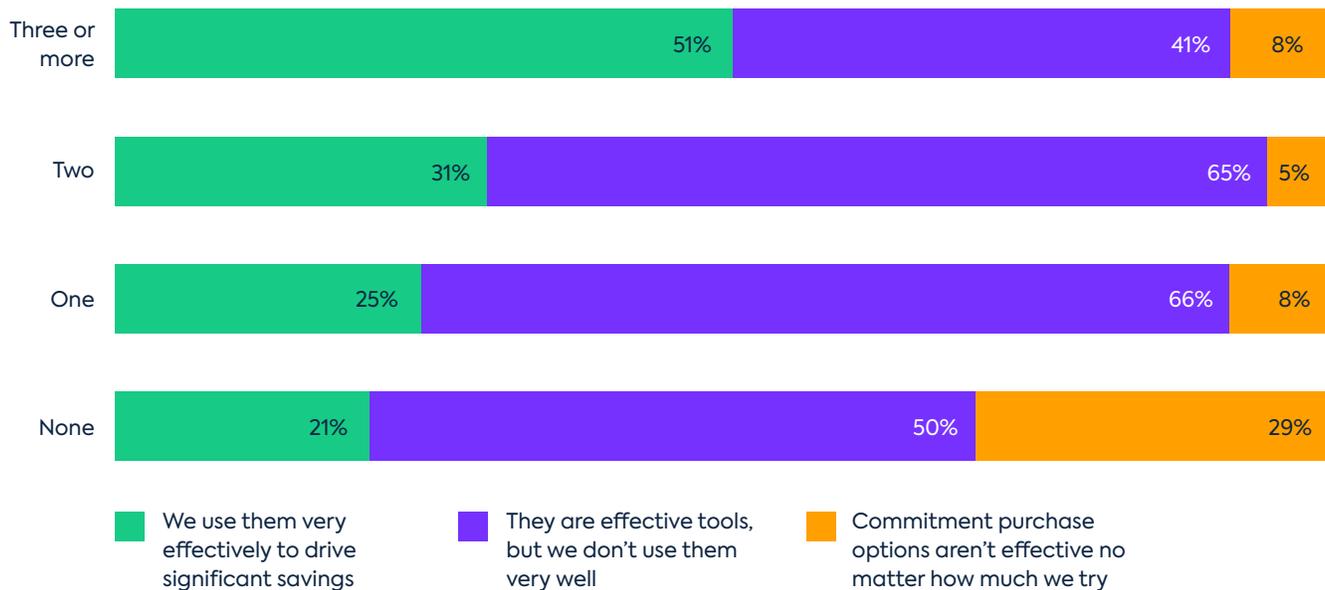
Stakeholders do feel they have room to improve. Only a third (33%) of companies report they are using cloud purchase options effectively. This confidence level increases slightly at larger companies having 5,000 employees or more, with 37% reporting they use cloud purchase effectively to drive significant savings.

Which of the following statements best represents your opinion of cloud purchase options such as Reserved Instances, Savings Plans, Spot instances/VMs or Committed Use Discounts?

- We use them very effectively to drive significant savings
- They are effective tools, but we don't use them very well
- Commitment purchase options aren't effective no matter how much we try

Interestingly, companies that mix different types of cloud purchase options report that they are more effective. When we drill down by the number of different types of cloud purchase plans used, 51% of those using three or more purchase plans feel they are more effective in driving significant savings compared to 31% using two plans, 25% using one plan, and 21% not using any plan.

Which of the following statements best represents your opinion of cloud purchase options such as Reserved Instances, Savings Plans, Spot instances/VMs or Committed Use Discounts? (By number of different types of plans used.)



Most companies believe FinOps is important to cloud success, yet few have mature practices

One way cloud decision makers can take a proactive approach to manage their cloud costs is by implementing a Financial Operations (FinOps) practice. More than simply managing and monitoring costs, FinOps takes a holistic view of the cloud's business value along with an organization's objectives. To understand this evolving aspect of cloud cost management, we gave participants a definition of FinOps and asked them questions about it.



For this survey, **Financial Operations (FinOps)** is designed to help organizations align cloud adoption and investment with business strategy and promote enterprise-wide accountability for cloud financial operations.

Without a doubt, FinOps adoption is an evolving trend among companies, although there is still much work yet to do. According to cloud stakeholders, 20% have started developing a FinOps practice, one-third (33%) have made progress but are still working on it, and only 10% have a mature practice.

Given this definition, how would you describe your company's adoption of FinOps?

We have a mature FinOps practice

10%

We have made progress with FinOps, but are still working on it

33%

We've started developing a FinOps practice, but have a long way to go

20%

We're planning to adopt FinOps, but haven't started yet

12%

We try to manage costs, but not in a process-oriented way

15%

We don't do FinOps at all

9%

The bright spot in the research is that companies are optimistic in championing FinOps, and almost all (96%) believe it is important to overall cloud success.

Companies use various methods to manage financial operations today, including outsourcing to managed service providers. This will be revisited in a later section of this report.

In your opinion, how important is FinOps to the success of your organization's cloud strategy?

Extremely important

33%

Somewhat important

42%

Slightly important

21%

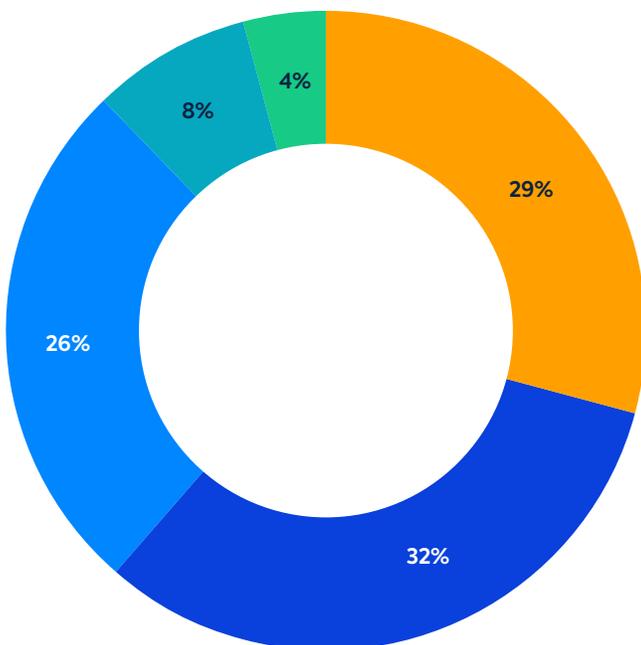
Not important

4%

Finding #3:

MSPs play a key role in cloud operations

How would you describe your company's approach to using an MSP to manage your cloud operations?



- We don't use a MSP
- We have an MSP, but they are a small part of our overall approach
- We share efforts evenly between internal resources and an MSP
- Our MSP takes the lead, along with minimal internal resources
- Our MSP has full ownership of cloud operations

Many organizations use Managed Service Providers (MSPs) for cloud operations

Companies can take increased control and optimize their IT resources more effectively by using an MSP to deliver critical services, such as network, application, infrastructure, and security. Managed cloud operations are core services offered by many MSPs. These providers can help companies by offering a holistic approach to their cloud financial management — using their clients' cloud budgets efficiently, continually optimizing cloud spending, and driving the cloud's business value over time. We gave participants a definition of a Managed Service Provider (MSP) and asked them questions about it to learn how they rely on MSPs to manage their cloud infrastructures.

According to cloud decision makers, 71% use an MSP for cloud operations. When we delve in to examine the types of approaches used, 32% are using an MSP for a small part of their overall approach, 26% are sharing efforts evenly between internal resources and an MSP, 8% let the MSP take the lead along with minimal internal resources, and 4% enable the MSP to take full ownership of cloud operations. This response suggests that at this point in time, only a small number (12%) of companies are relying on their MSP for leadership.

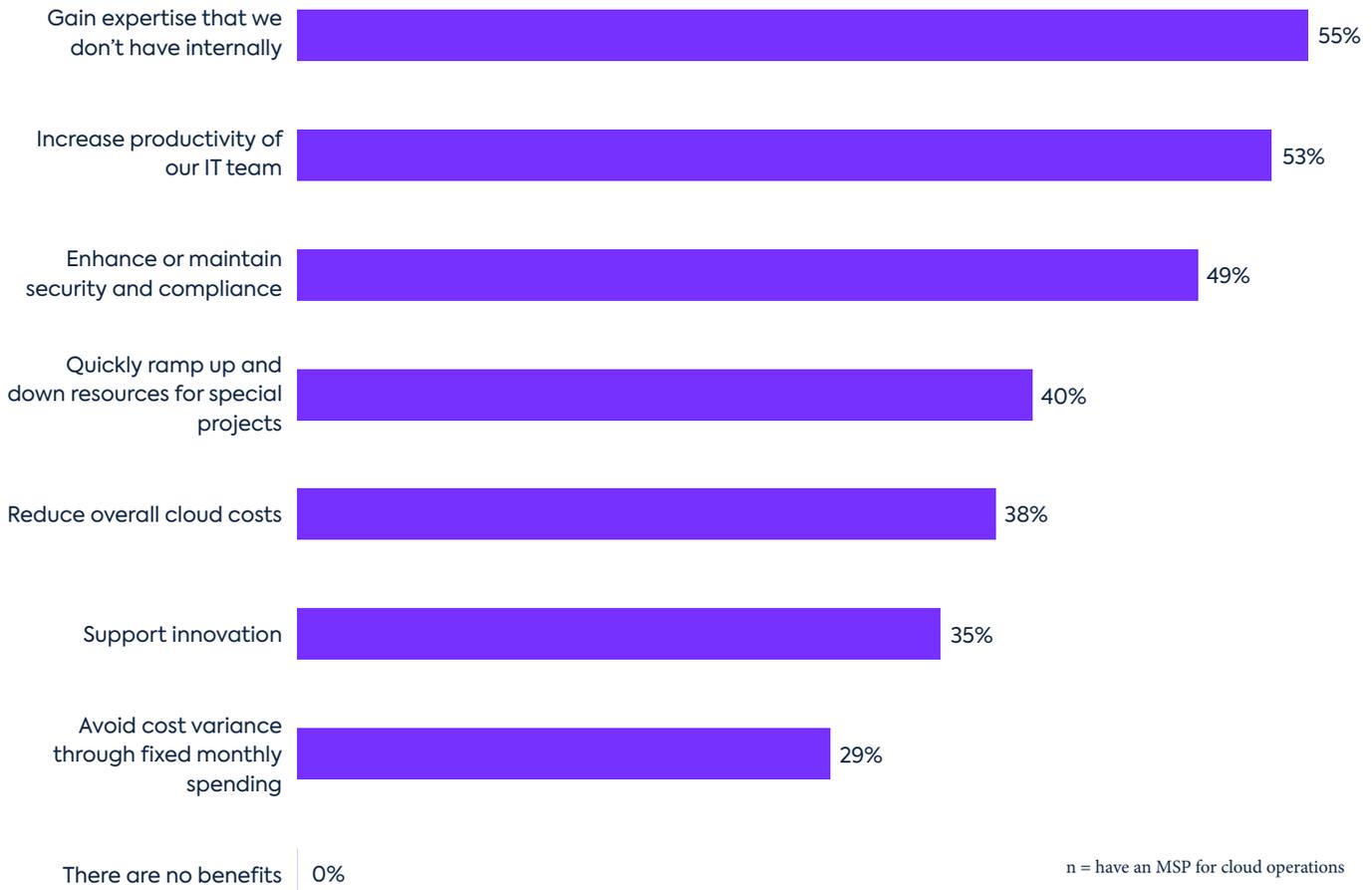


*For this survey, a **Managed Service Provider (MSP)** is an external vendor that delivers continuous, SLA-backed, active management, maintenance, and support of cloud infrastructure, networking, security, and/or application environments.*

All companies working with an MSP benefit from that relationship

Regardless of the type of approach taken, all companies (100%) working with an MSP say they benefit from that relationship. When we asked stakeholders about the types of benefits reaped by working with MSPs to operate their cloud operations, 55% say they gained expertise that they don't have internally, followed by increased productivity (53%), enhanced or maintained security and compliance (49%), the ability to ramp up or down resources for special projects (40%), reduced overall cloud costs (38%), and supported innovation (35%).

What benefits does your organization gain by working with an MSP to operate your cloud environment? Choose all that apply.



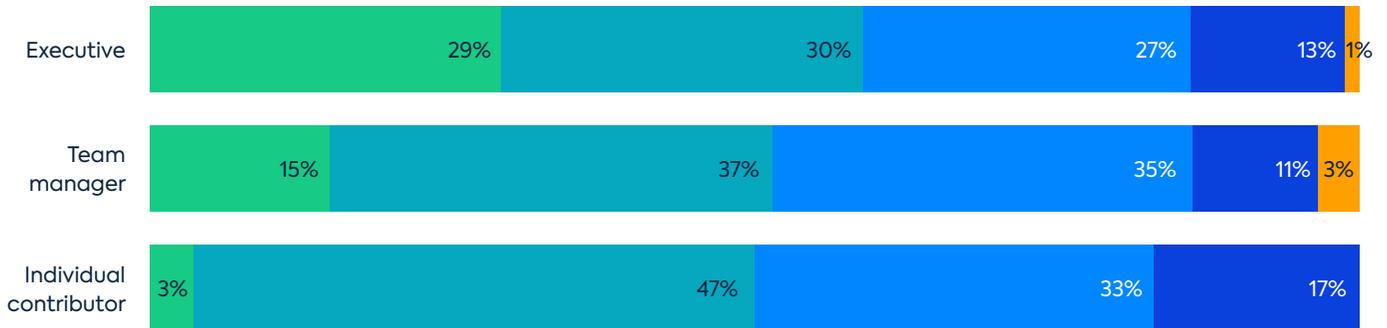
An important takeaway from this study is that when MSPs take a greater leadership role in operating their clients' cloud environments, higher levels of benefits are received. Most notably, when the MSP takes the lead, these percentages jump to 72% of companies gaining enhanced security and compliance, 53% reducing overall cloud costs, and 50% finding support innovation.

In general, cloud stakeholders that have an MSP for cloud operations give them high marks for their contribution. However, opinions on how well their MSPs did their jobs vary depending on roles and company size. The data shows that executives tend to view MSPs as delivering higher levels of value, with 29% reporting their MSPs are "very valuable" compared to only 15% of team managers and 3% of individual contributors awarding this top ranking. The smaller companies included in our study are more likely (25%) to give the highest "very valuable" rank than mid-size (20%) or large (8%) companies.

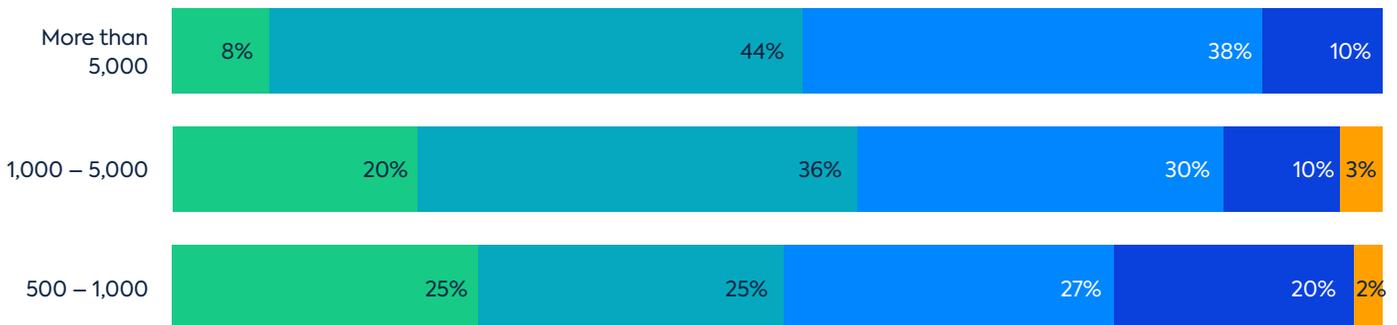
How would you rank your MSP's overall contribution to your organization's cloud operations effort?



Job Level



Company Size



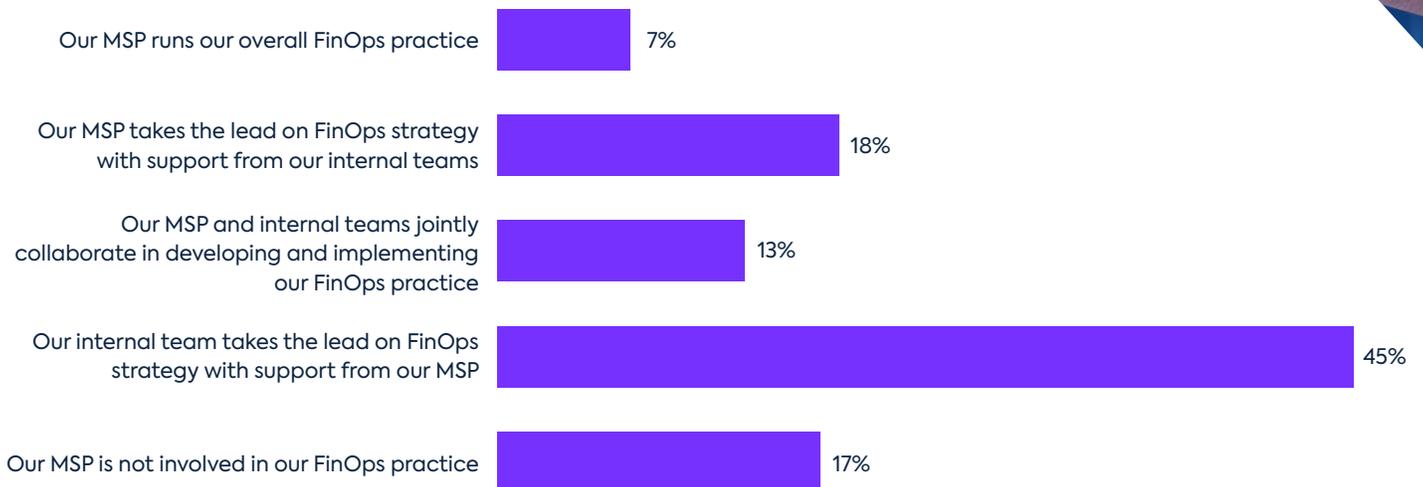
n = have an MSP for cloud operations

MSPs used for cloud operations are usually involved in FinOps

The evolution of cloud infrastructures is one of the most dramatic innovations in enterprise technology experienced in the last 15 years. But it has only been a few years since MSPs have offered dedicated cloud operational capabilities like cost optimization, security, compliance, and asset management to their enterprise clients. One of the primary research goals was to examine the MSP’s level of involvement in a company’s cloud operations. In particular, we wanted to understand what role MSPs played in FinOps.

Among companies that have adopted FinOps and have an MSP, 83% say their approach includes the involvement of the MSP. This level of involvement varies, with nearly half (45%) reporting that their internal team takes the lead in FinOps strategy while getting support from their MSP, 18% relying on their MSP to take the lead, 13% collaborating in a joint effort with their ISP, and 7% outsourcing their overall FinOps practice to their MSP.

What role does your MSP have in your organization’s approach to FinOps?



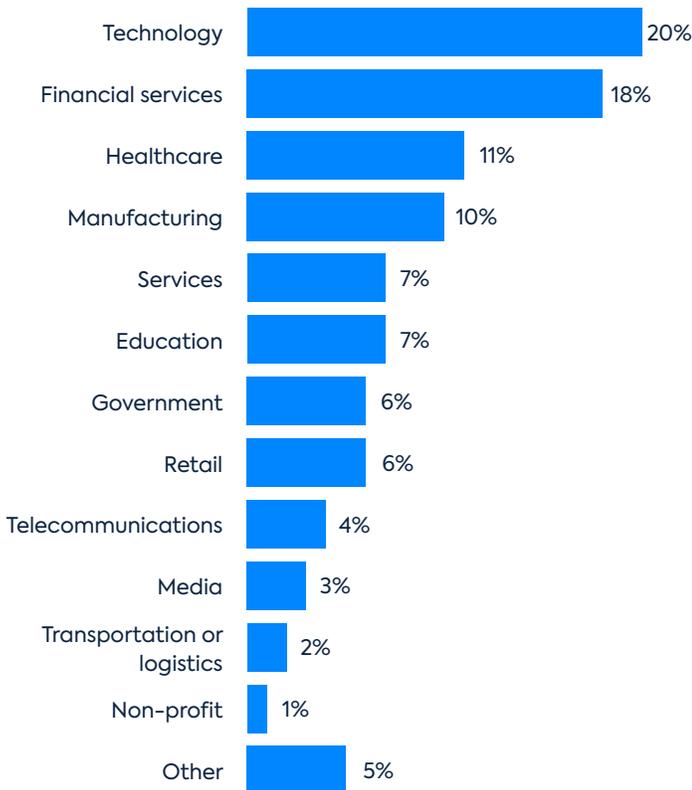
n = have an MSP and do FinOps cloud



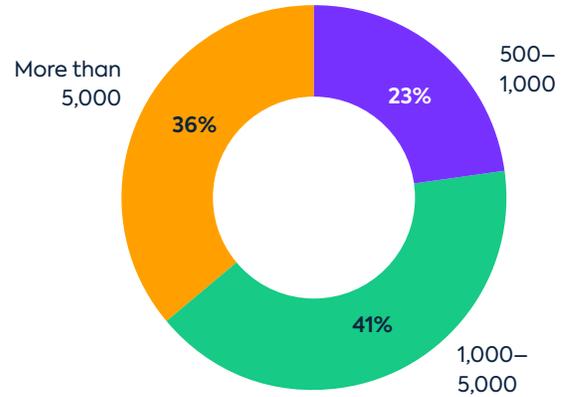
Survey methodology and participant demographics

In February 2022, an online survey was sent to independent sources of IT and business stakeholders responsible for public cloud infrastructures such as Amazon Web Services, Microsoft Azure, and Google Cloud. A total of 305 qualified individuals completed the survey. Participants represented a wide range of roles, company sizes, industries, and job levels. Certain questions were repeated from similar 2017, 2019, and 2021 studies to enable trend analysis. Question options may add up to more than 100% because of rounding.

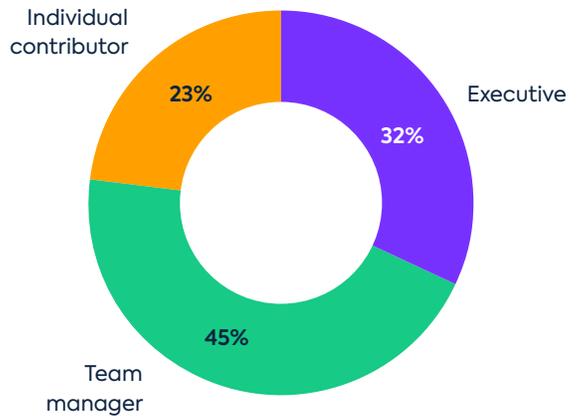
Industry



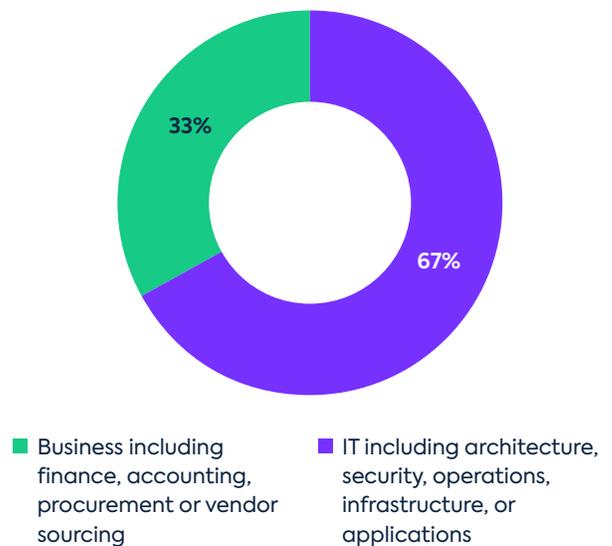
Company Size (Number of employees)



Job Level



Role



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