

September 2021



Survey Report

The State of Hybrid Cloud and FinOps





Executive Summary

Based on the growth of FinOps and its role in driving efficiency and savings for enterprises worldwide, Virtana commissioned a survey to answer the following questions:

- How well do organizations understand and manage cloud spend today?
- Which groups are involved as active cloud stakeholders?

FinOps stands for “Cloud Financial Operations,” “Cloud Financial Management” or “Cloud Cost Management.” The FinOps philosophy breaks down siloed procurement in favor of cross-functional best practices, enabling distributed teams to make business trade-offs between speed, cost, and quality. It is more than just about saving money. Because cloud spend can drive business outcomes such as revenue, grow the customer base, and accelerate the velocity of product and feature releases, FinOps is ultimately about *making* money.

The survey findings reveal the challenges enterprises are facing across the hybrid cloud environment; which is plagued with disjointed point tools, silos, lack of visibility, unexpected costs, lack of programmatic optimization, and the inherent risks of cloud cost management.

KEY FINDINGS

82% of organizations with workloads running in the public cloud have incurred “unnecessary” cloud costs

72% of Cloud Decision Makers (or IT organizations) are fed up with piecing together data from multiple IT operations tools

70% of Cloud Decision Makers say IT’s ability to maximize business value is hindered by silos across teams



These findings underscore the need for IT leaders to find new ways to collaborate with the wider business if they want to keep up and deliver expected business outcomes. IT teams also need to address the following areas in order to execute a successful digital transformation:

- **Disjointed tools:** 62% report having to cobble together multiple tools, systems, and custom scripts to get a global view of cloud costs, and 72% of respondents said they are fed up with a piecemeal approach to management tools to monitor and manage everything from infrastructure performance to cloud cost and migration readiness.
- **Silos:** 68% of all respondents stated that their teams operate in silos, and 70% said that limited collaboration hinders their ability to adapt quickly and improve business outcomes.
- **Unexpected costs:** 82% of respondents have incurred unnecessary cloud costs, which can eat into budgets needed for other areas of transformation.
- **Lack of programmatic optimization:** 56% lack programmatic cloud cost management capabilities, which can mean either that teams are spending too much time managing cloud costs or that cloud waste is allowed to fester.

- **Lack of visibility across the hybrid cloud:** 86% of respondents said they cannot get a global view of cloud costs within minutes, and 40% cannot get it within hours, creating delays and potentially reducing agility. 71% of respondents agreed that limited visibility across the hybrid cloud environment hinders their ability to maximize value and creates inefficiencies and wastes time.
- **Risk:** 66% of respondents stated it is hard to understand if they are delivering the service levels the business needs, 65% agreed that when there is an issue, they are hard-pressed to identify the business impact, and 77% cited increased performance issues as one of the reasons that cloud teams are under a lot of pressure.

We are operating in a hybrid, multi-cloud world.

The survey found that most companies are deploying hybrid, multi-cloud infrastructures with 84% of respondents running workloads in multiple public clouds, while at the same time 92% are vowing to keep at least some portion of their workloads on premises. These are complex environments to manage, making the promise of FinOps an attractive proposition.



When it comes to global cloud cost visibility and management, confidence exceeds results.

One of the biggest takeaways from this survey is that there is a big disconnect between respondents' confidence in their ability to see and manage global cloud costs, which is high, and how they characterize their tools and results in this area, which is a decidedly mixed bag.

Across the board, the vast majority of respondents give themselves high marks when it comes to their ability to analyze public cloud bills, customize reporting tools, dynamically adjust spending as needs change, predict long-term spending, forecast usage patterns, understand cost allocations at a granular level, get real-time cost alerting, and identify unused/underutilized or abandoned resources. Yet a much smaller number report having the tools that are needed to enable these abilities, such as multi-dimensional analysis, capacity/usage planning, usage dashboards, billing visibility tools, and recommendation engines. Furthermore, the majority say they have to cobble together multiple tools/systems/programs to get a global view of cloud costs. This requires effort, which takes time away from other things, and it leads to delays.

So, where is the disconnect? Why are participants more confident in what they are doing while subsequent responses betray that their capabilities and results don't live up to that assurance?

Similarly, the vast majority of respondents report they can currently enable real-time decision making, optimize cloud rates and cloud usage,

benchmark cloud performance, understand fully loaded cloud costs, and align cloud plans to the business. Again, results don't seem to justify that confidence, with a good number of respondents stating they have incurred unnecessary cloud costs due to workloads bursting above agreed capacity, overprovisioning of compute or storage resources, over-buying or having unused reserved instances, storage blocks that are no longer attached to a compute instance, or poor job scheduling. In fact, almost half say they only have one way to find out about cost-impacting changes in their public cloud environment, and of those, more than one-quarter rely *exclusively* on periodic audits and another one-quarter on their end-of-month bill.

The repercussions go beyond just cost containment. In fact, most agree that:

- **Limited visibility across the hybrid cloud environment creates inefficiencies and hinders their ability to maximize value;**
- **When there is an issue, they are hard-pressed to identify the business impact;**
- **It is hard to understand if they are delivering the service levels the business needs; and**
- **They are unable to make data-driven IT investment decisions.**



The business is not an active stakeholder, and it shows.

Given the strategic importance of the cloud and the size of budgets it consumes, you might think companies would be all-in on FinOps. Yet survey respondents report that less than one-third of groups beyond the executive IT team are active stakeholders, and more than three-quarters of respondents say that executive IT is the only active stakeholder group related to the cloud. This is critical because the lack of cross-functional, multi-group stakeholder participation correlates directly with key challenges that can have a negative impact on the business.

When the business is not an active stakeholder, our survey results indicate that fewer workloads are slated to migrate to public cloud. Furthermore, when it comes to tools and capabilities, organizations where the executive IT team is the only active cloud stakeholder are far less likely than the overall respondent pool to have what they need across the board. Plus, that same group also sees far more of these five challenges:

1. Limited visibility
2. Teams working in silos
3. Multiple tools
4. Understanding delivery of service levels
5. Difficulty identifying business impacts and an inability to make data-driven IT investment decisions

SURVEY PARTICIPANTS AND METHODOLOGY

Virtana commissioned Arlington Research to conduct an online survey in April 2021. The 350 IT professionals who participated were in USA- or UK-based organizations with 250+ employees and had cloud infrastructure decision influence or purchase authority.





FINDINGS:

Current state of cloud deployment

There is no doubt that the public cloud has become a mainstream option. (Figure 1)

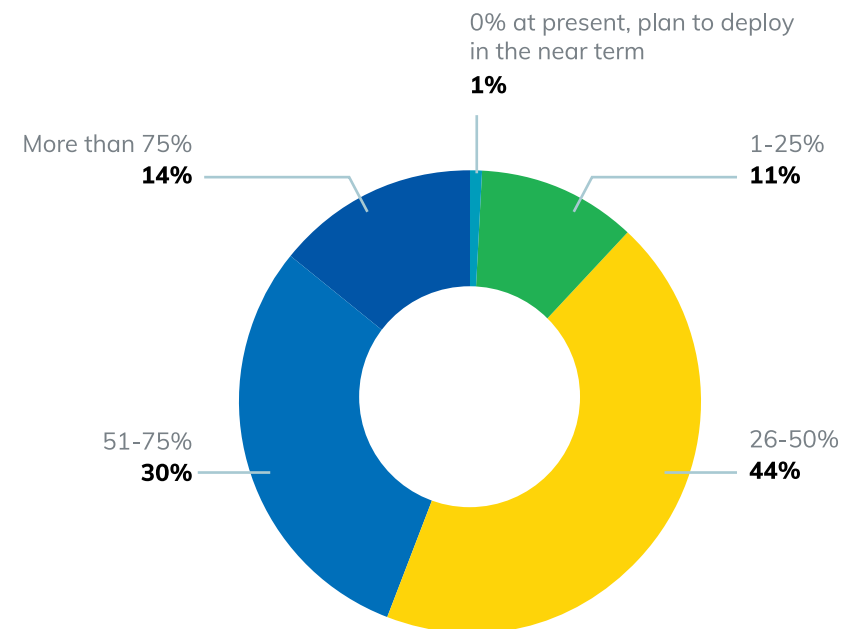
88% have placed more than one-quarter of their workloads in the public cloud.

44% indicated that they are running more than half of their workloads in the public cloud.

Organizations are not limiting themselves to just one public cloud provider. A full 84% have deployed workloads in more than one public cloud, which means multi-cloud has also hit the mainstream. (Figure 2)

FIGURE 1

Percentage of your organization's workloads that are currently deployed in the public cloud (n=350)





While 96% of respondents are willing to operate some number of their workloads in one or more public clouds, most are eyeing a hybrid approach, keeping some workloads in the data center. In fact, just over one-fifth (21%) state they will keep three-quarters or more of their workloads on premises. (Figure 3)

FIGURE 2

Does your organization have workloads deployed in more than one public cloud? (n=350)

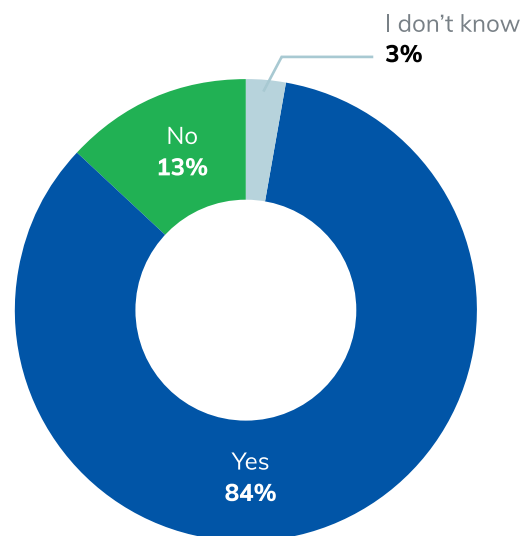


FIGURE 3

Percentage of your workloads that you would never move to a public cloud (n=350)

All our workloads could move to public clouds

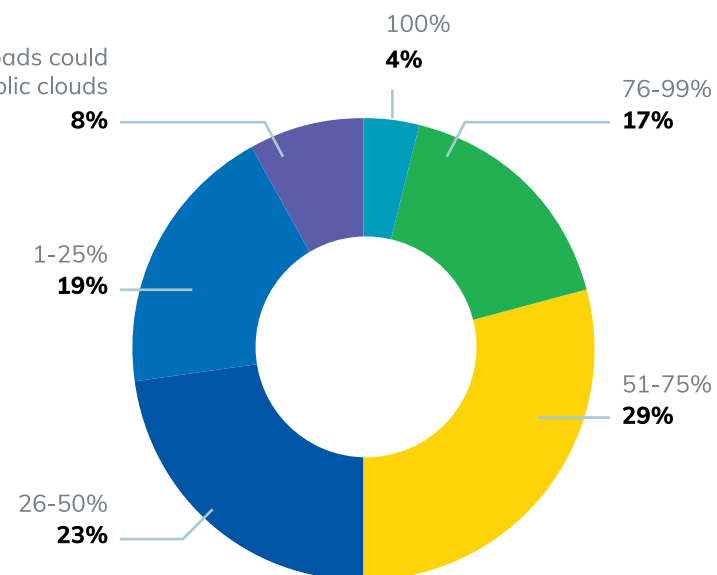
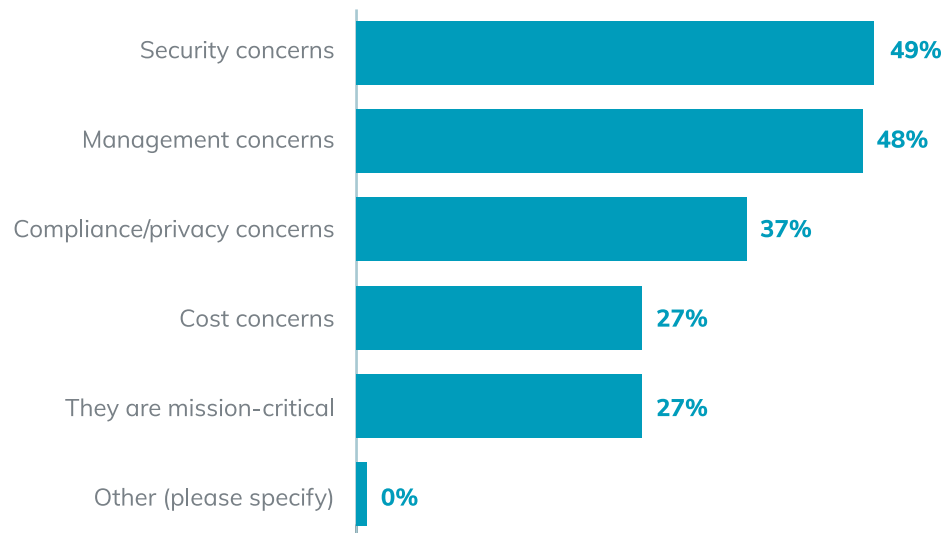




FIGURE 4

Reason(s) you would never move those workloads to a public cloud (n=255)

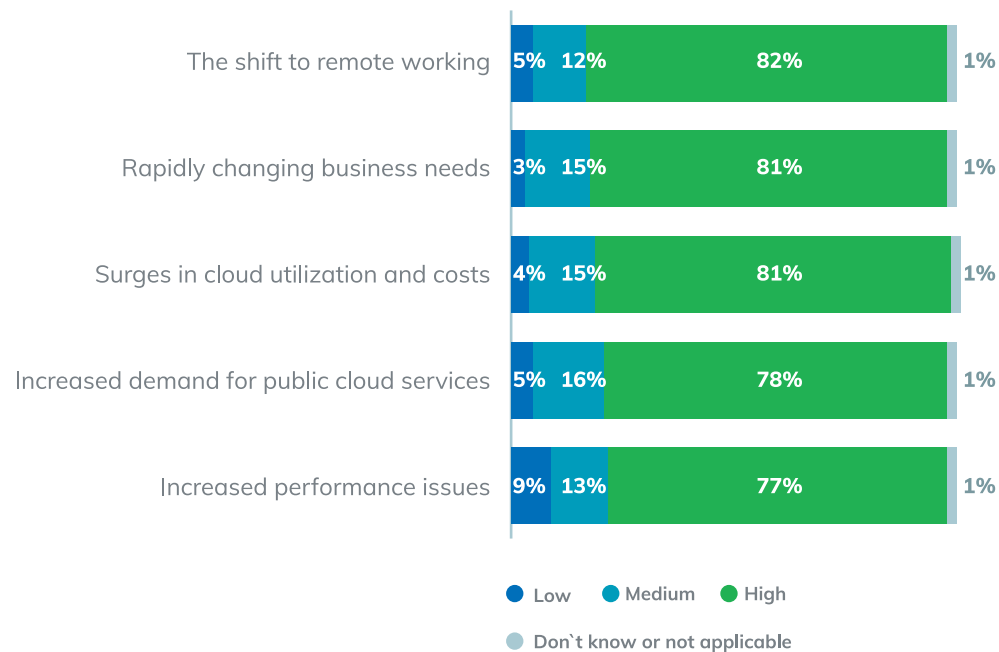


Participants responded with varying reasons for their desire to keep some portion of their workloads on premises. The biggest concerns cited are security (49%) and management (48%). (Figure 4) Nearly half of the respondents (47%) cited just a single reason and of those, security and management are also the primary issues, at 31% and 33% respectively.



FIGURE 5

Impact of issues on the cloud team (n=350)



Cloud teams are under a lot of pressure, and it is not just a single concern. Changes in costs, performance, requirements, and more are all having an impact on the teams. The vast majority (77-82%) reported they are feeling the impact of all these issues, giving them a high rating. The shift to remote working is most cited at 82%, with rapidly changing business needs and surges in cloud utilization and costs coming in a close second, both at 81%. (Figure 5)

While the shift to remote working and rapidly changing business needs are easily perceived as out of IT's control, the cloud team is more likely to be held responsible for surges in cloud utilization and associated costs. **So, how are they positioned to address this challenge?**



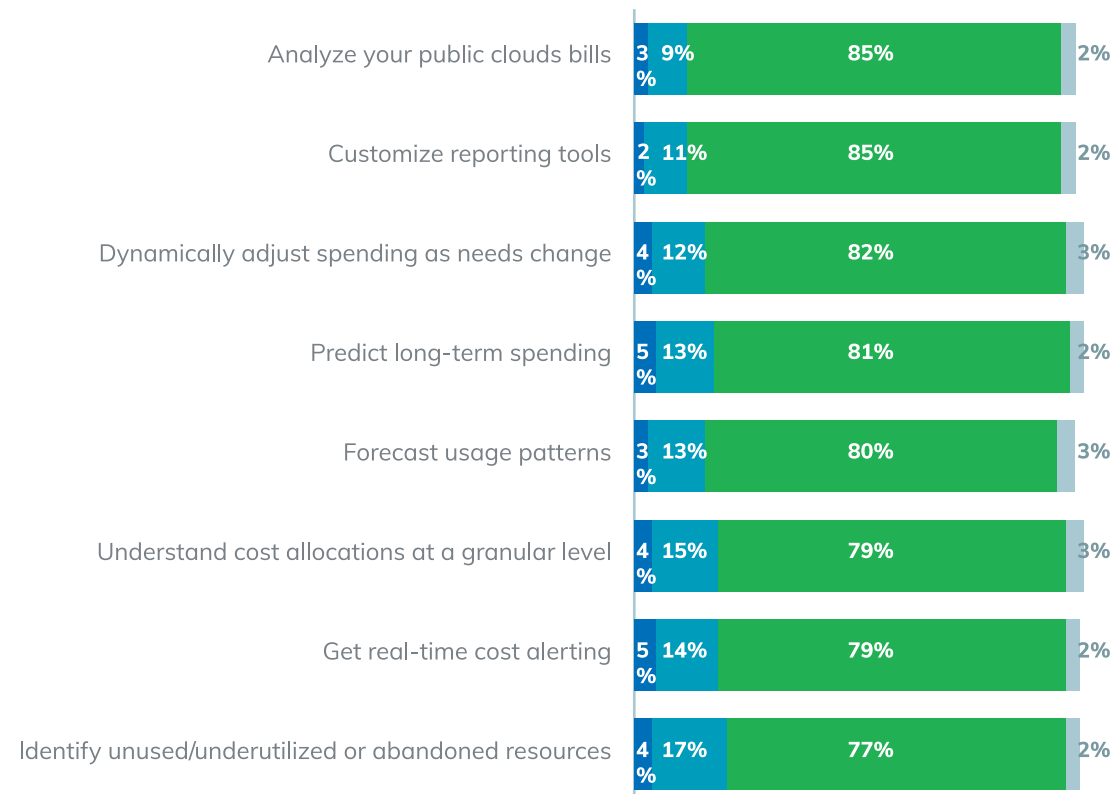
Global cloud cost visibility and management

When asked about their ability to perform a range of cost-related activities, respondents are confident in their current tools and capabilities, with the vast majority (77-85%) reporting that they can currently do all of these things well. (Figure 6)

FIGURE 6

Rate your ability to do the following with current tools and capabilities (n=350)

● Low ● Medium ● High
● Don't know or not applicable





Where is that confidence coming from?

When we break it down by the number of workloads the respondents are currently running in the public cloud, it looks like confidence comes from experience—for the most part, the more workloads a company has in the cloud, the more likely they are to feel confident in their ability to do all those things.

In some cases, however, respondents who have not yet migrated workloads to the cloud cite unusually high confidence levels—particularly around forecasting usage patterns, understanding cost allocations at a granular level, and dynamically adjusting spending as needs change—higher than their peers who have already started the migration and have some cloud experience under their belt. This signals that organizations that have yet to start migration may be overconfident in their abilities—and may be naively unaware of what they’ve yet to experience. (Figure 7)



FIGURE 7

Percentage of organization's workloads that are currently deployed in the public cloud for respondents who rate their ability to do the following with current tools and capabilities as "High"

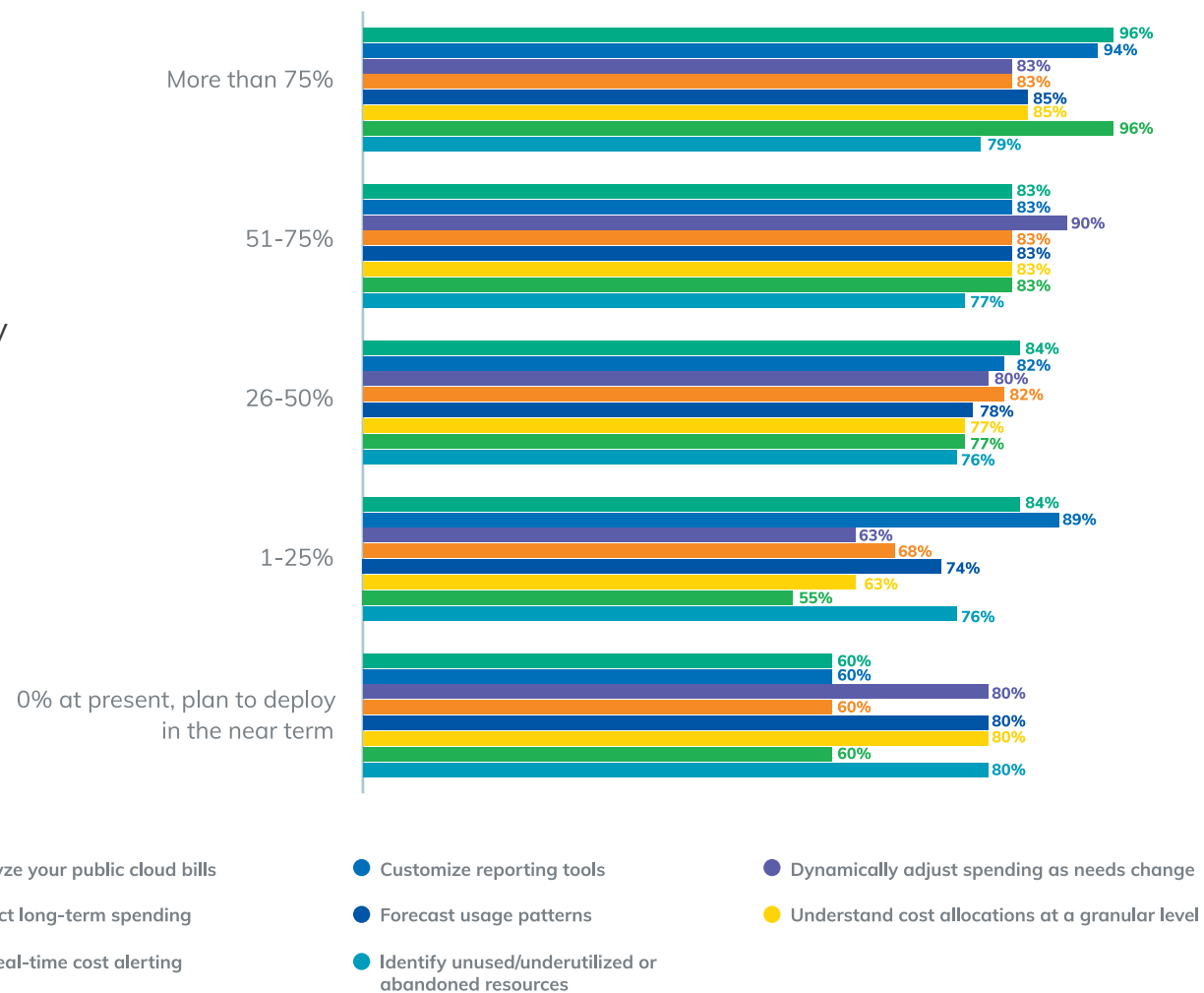
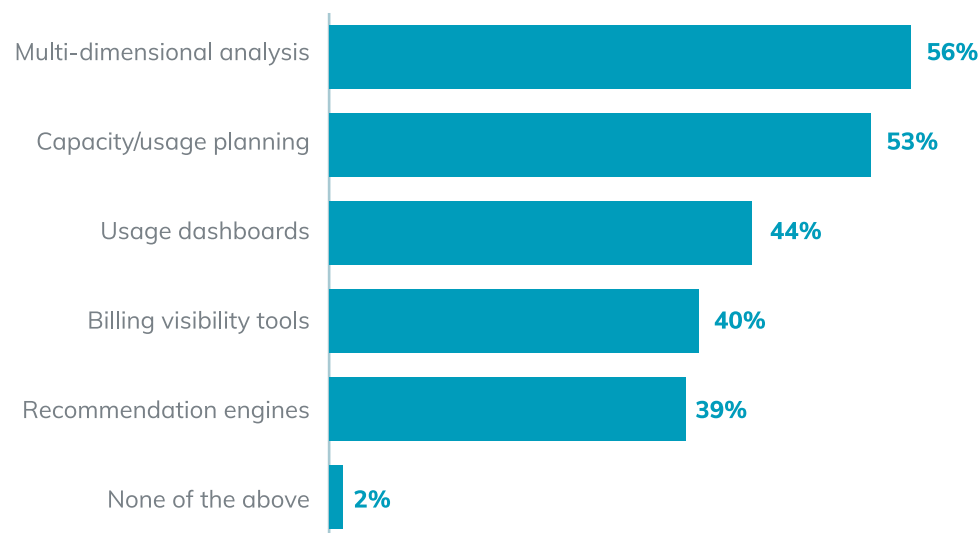




FIGURE 8

Types of cloud cost capabilities your organization currently has (n=350)



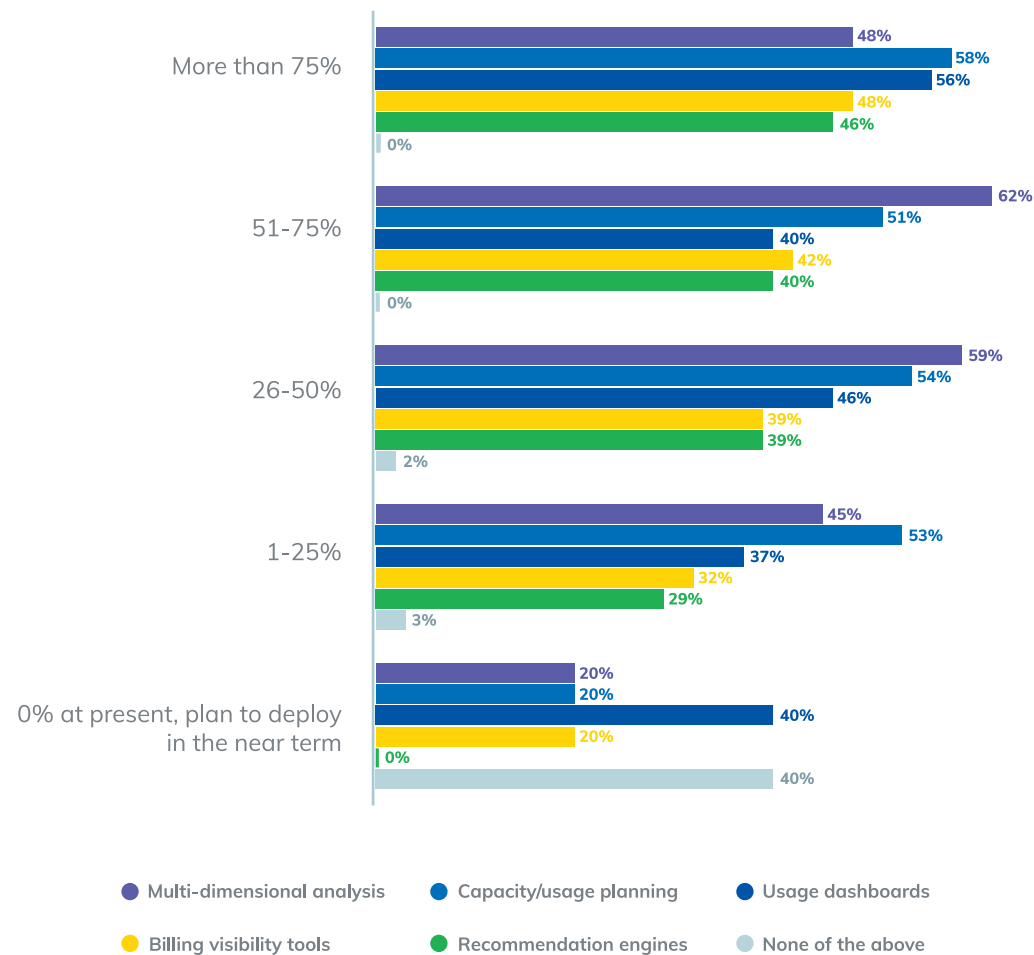
Given the soaring levels of confidence respondents have in their ability to *accomplish* all these tasks, you would think they would have the individual capabilities needed to do so at corresponding rates; but this is not the case. In fact, they seem to be missing many of the key tools needed to understand and manage cloud costs. Most have some level of cloud cost capabilities, but more than half are missing recommendation engines (61%), billing visibility tools (60%), and usage dashboards (56%). (Figure 8) In fact, only 19% report having at least four of the listed capabilities, and over half (55%) have two or fewer. What is driving the high confidence levels? Respondents are either not doing quite as well as they might believe, or they are missing a substantial part of the visibility that would reveal otherwise.

When we break these capabilities down by the number of workloads the respondents are currently running in the public cloud, we again see some progress based on adoption levels. In general, about half (51-58%) of all respondents with any non-zero number of workloads in the cloud have capacity/usage planning capabilities. The more workloads they have in the public cloud, the more likely they are to have other capabilities: multi-dimensional analysis, billing visibility tools, recommendation engines, and usage dashboards. (Figure 9)



FIGURE 9

Types of cloud cost capabilities your organization currently has by percentage of organization's workloads that are currently deployed in the public cloud

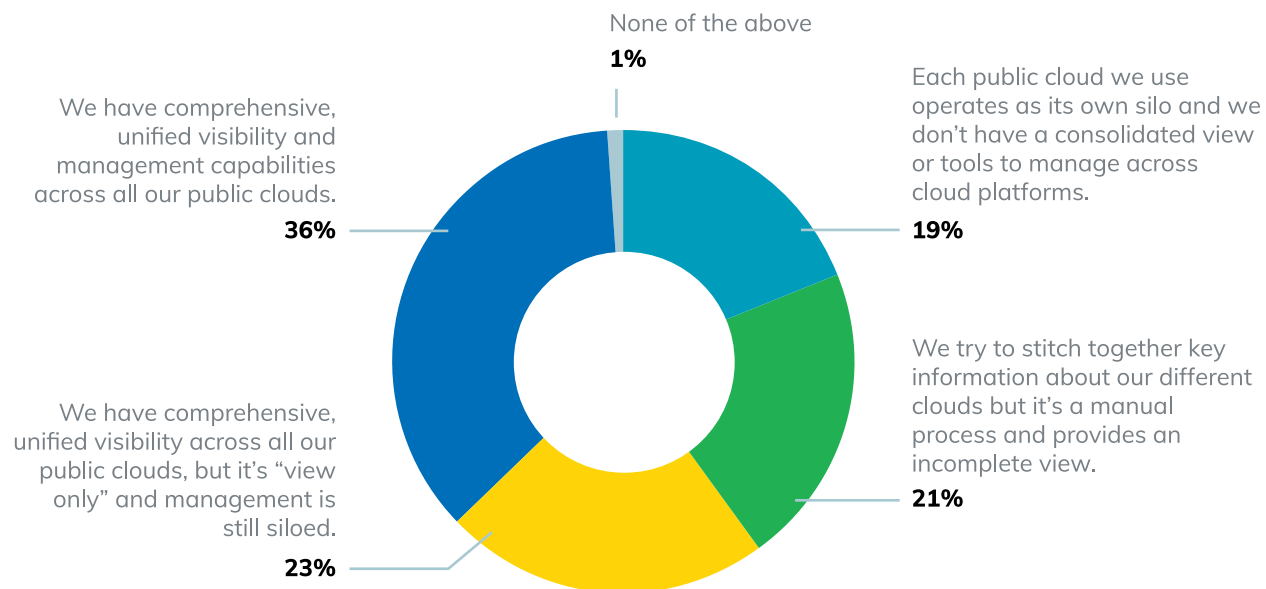




Visibility becomes harder when there are workloads in multiple public clouds. Almost two-thirds (63%) of respondents who have multi-cloud deployments indicated they have something less than comprehensive, unified visibility and management capabilities across all their public clouds, and 40% cannot get a complete view across public clouds at all. (Figure 10)

FIGURE 10

Visibility and management across multiple public clouds (n=296)

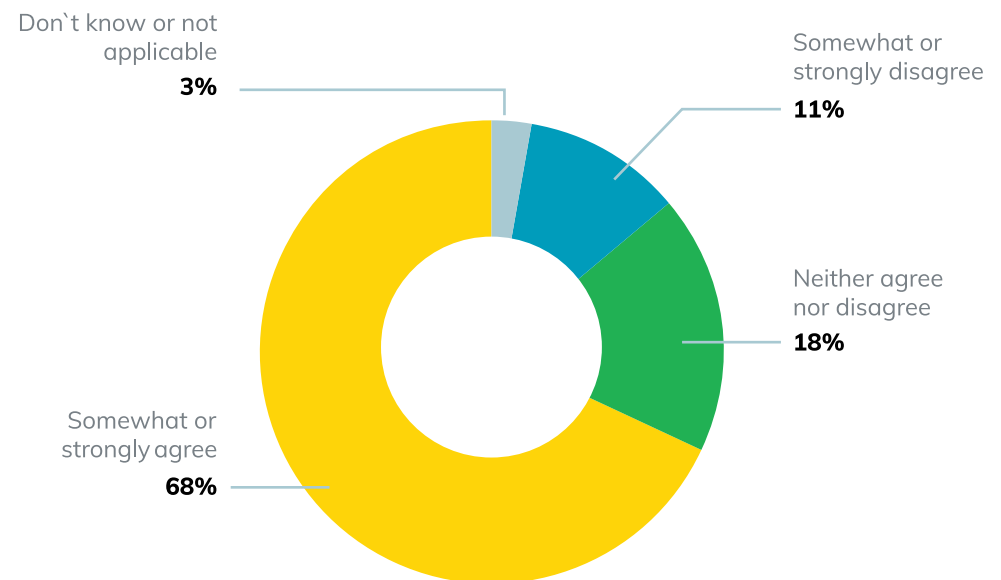




While only 19% of respondents indicate that each of their multiple public clouds operates independently, silos are a challenge beyond the multi-cloud realm. In fact, 68% of all respondents stated that their teams operate in silos. While this has historically been the case for IT, not to mention other parts of the enterprise, it is interesting to note that the cloud, which for many is meant to be an organizational change agent, is not changing this reality for many businesses. (Figure 11)

FIGURE 11

Teams work in silos (n=350)





Silos impede collaboration, which in turn affects an organization's overall agility. That is an intuitive conclusion, but the data also bears it out, with 70% of respondents saying that limited collaboration hinders their ability to adapt quickly. (Figure 12) This is a big problem—especially considering that increasing organizational agility is often one of the top reasons why companies move to the cloud in the first place.

FIGURE 12

Limited collaboration
disrupts ability to adapt
quickly (n=350)

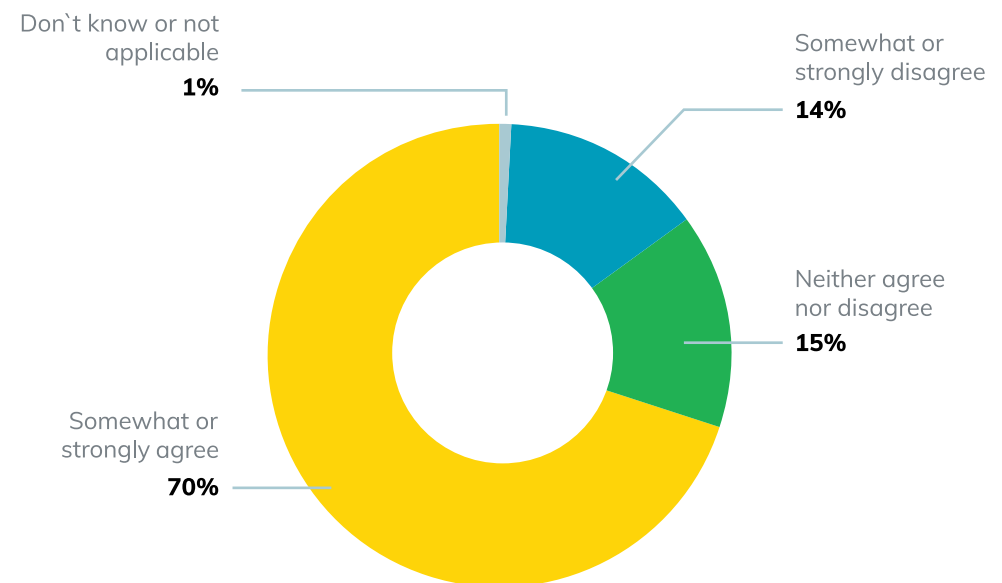
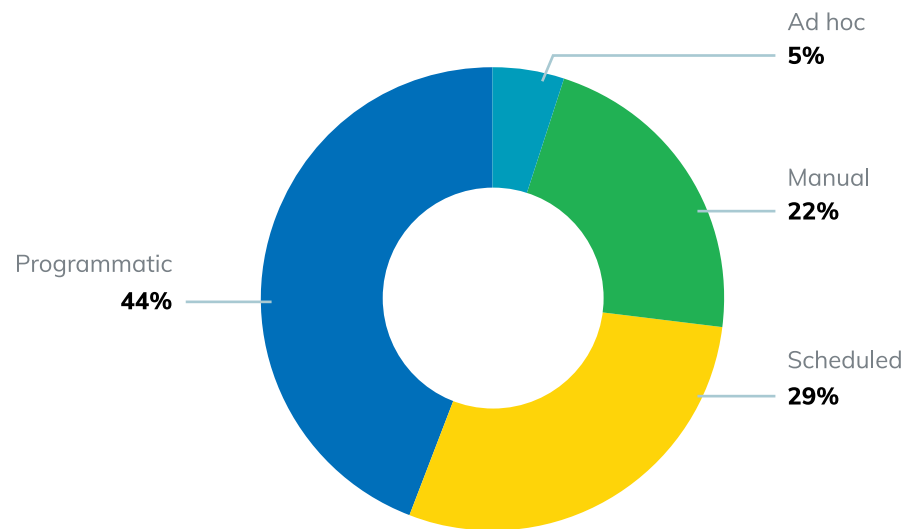




FIGURE 13

Characterization of current cloud-management strategies (n=350)



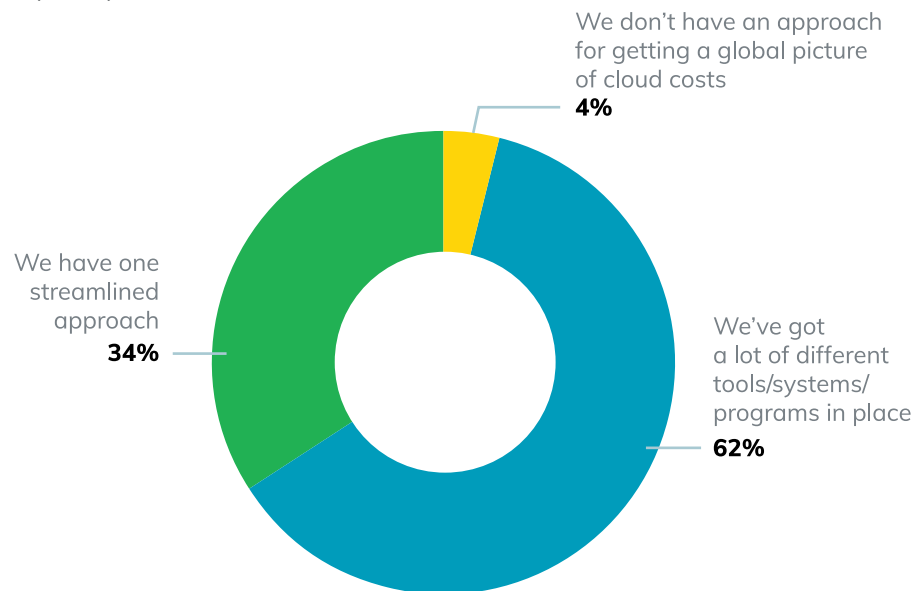
Of course, tools alone are not sufficient—how they are deployed is important. If cloud costs are not being managed programmatically, then extra cycles are being expended on this and are probably not resulting in real-time visibility. Over half of respondents (56%) stated that they are in this situation. (Figure 13)



FIGURE 14

Characterization of current cloud-management strategies

(n=350)



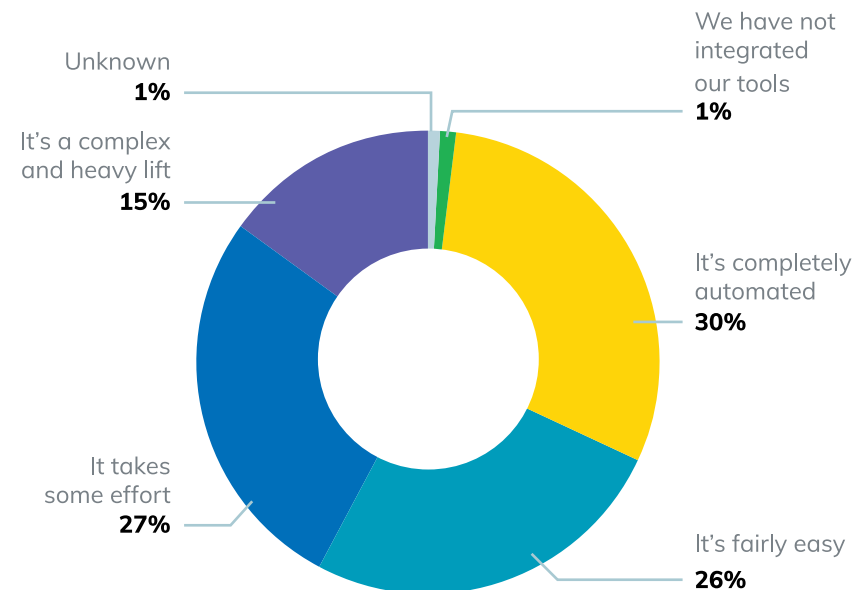
So, even if they have confidence that they can manage costs with current tools and capabilities (Figure 6), they may not be able to do it in real time and may have to expend a good bit of time and effort, which turns out to be the case for most respondents. Almost two-thirds (62%) report having to cobble together multiple tools/systems/programs to get a global view of cloud costs. (Figure 14) This creates challenges.



It is no surprise that having lots of different tools and systems makes it hard to get a global view into cloud costs. In fact, more than two-thirds (68%) of organizations indicate they have to expend some effort to integrate and leverage various tools/systems/programs to get a global view of costs, and 42% have to put in a good bit of effort. (Figure 15)

FIGURE 15

Characterization of the effort it takes to integrate and leverage point/domain tools to get a global view of cloud costs (n=219)

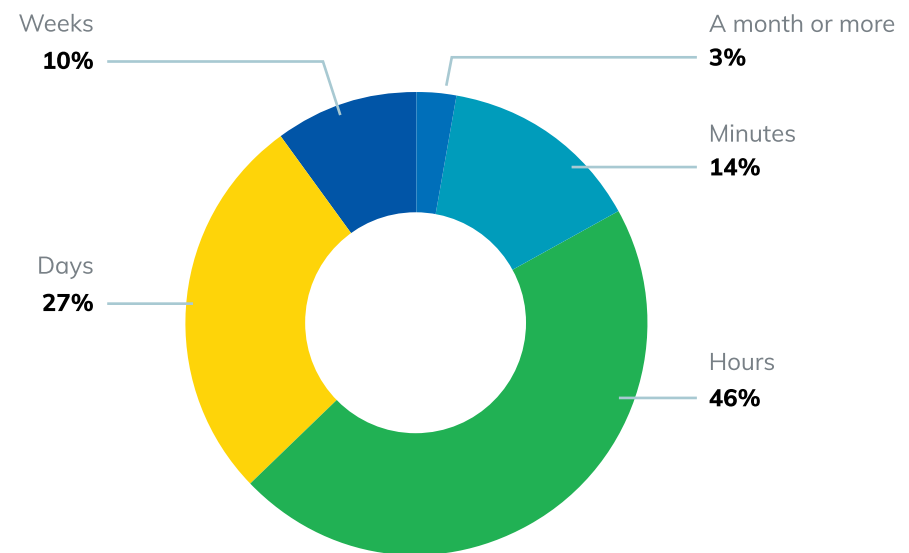




Nor is it surprising that it ends up taking a long time to get an up-to-date global view of cloud costs. A full 86% of respondents stated they cannot get it within minutes, and 40% cannot get it within hours. (Figure 16)

FIGURE 16

How long it takes to get an up-to-date global view of cloud costs (n=219)

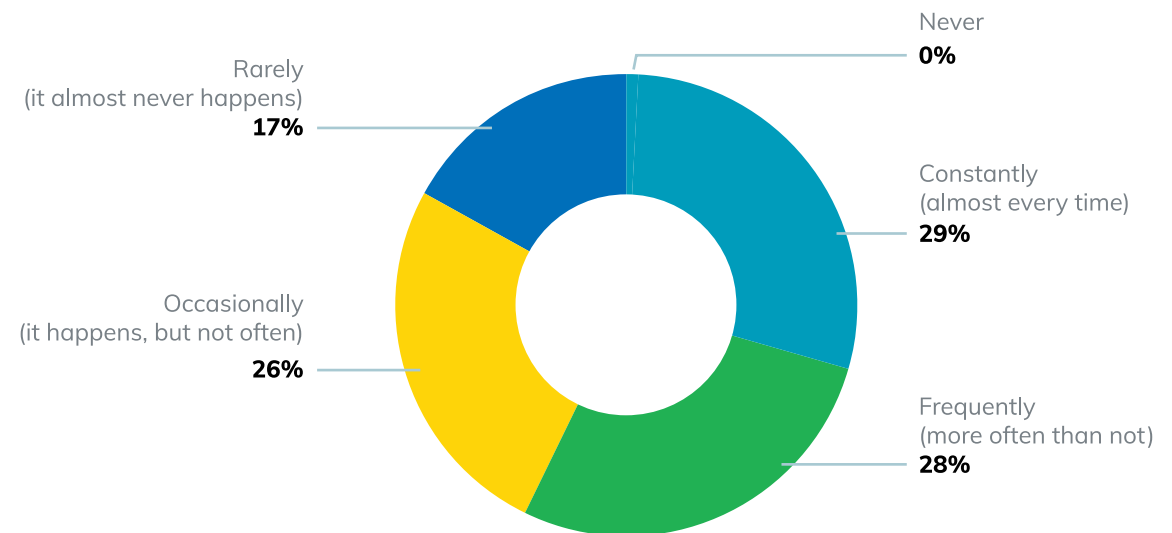




Compounding the problem is the fact that 57% reported frequently experiencing data issues due to failed exports/imports, improper formatting, etc., while only 17% stated this rarely happens. (Figure 17)

FIGURE 17

Frequency of data issues due to failed exports/imports, improper formatting, etc. (n=219)





Despite these challenges, respondents indicated that they are confident in their ability to manage and optimize various costs and performance aspects of their cloud deployments. The vast majority of respondents (82-84%) reported they can currently do all of these things. (Figure 18)

FIGURE 18

Rate your ability to do the following (n=350)

● Low ● Medium ● High
● Don't know or not applicable

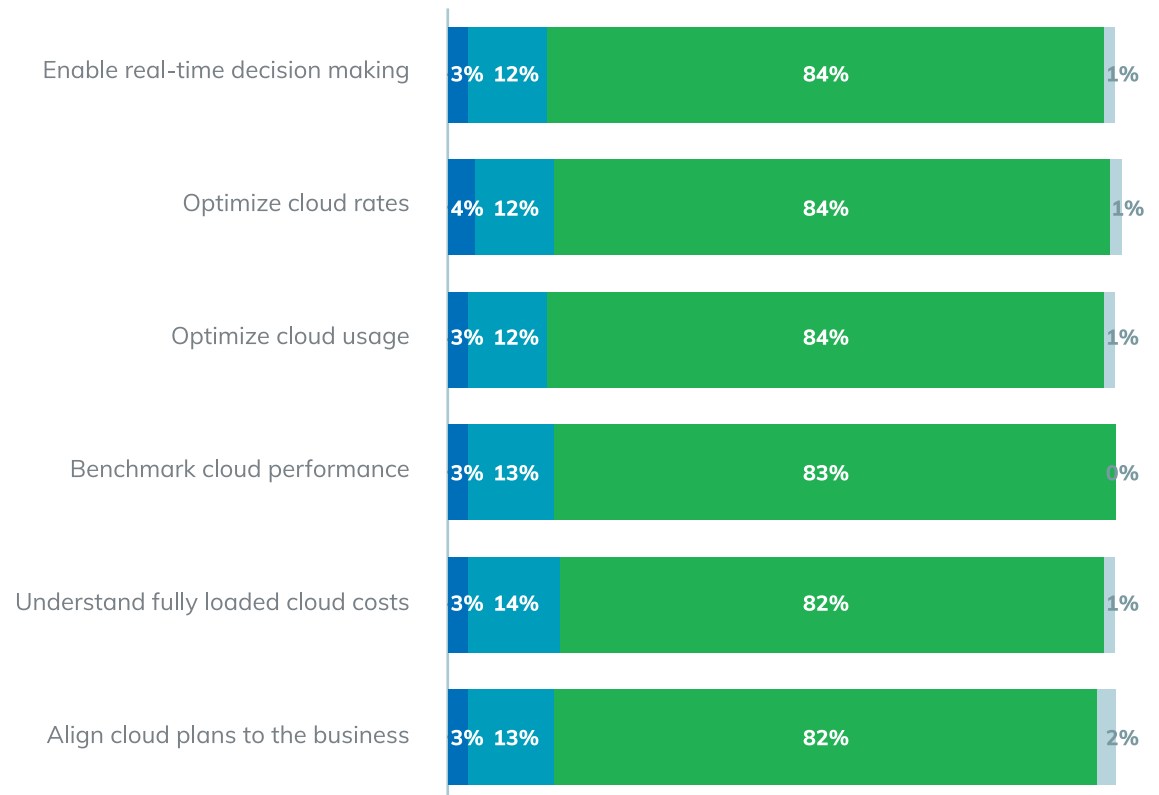
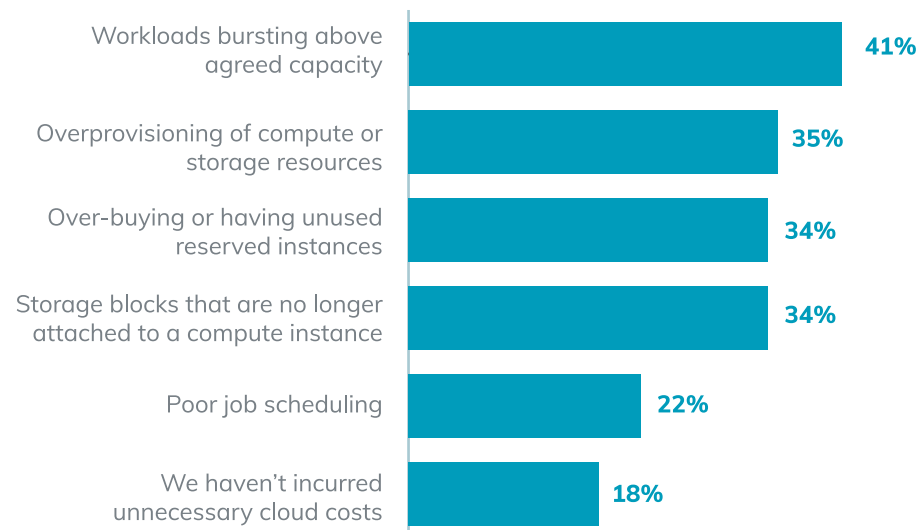




FIGURE 19

Factors resulting in unnecessary cloud costs incurred (n=350)

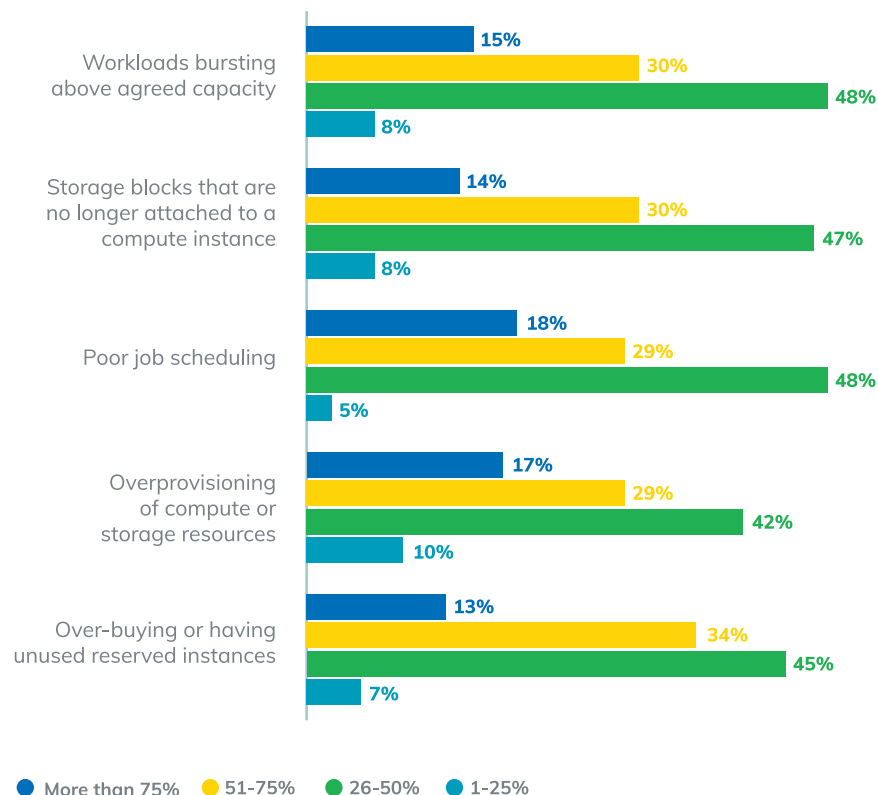


Yet, this confidence does not seem to be supported by results. Cloud waste is proving to be a huge problem. The vast majority of respondents reported having incurred unnecessary cloud costs, with only 18% claiming they haven't incurred any unnecessary cloud costs at all. For the rest, the biggest problem (41%) is workloads bursting over capacity. Overprovisioning, over-buying reserved instances, and unattached storage blocks are also problems plaguing around one-third of respondents (35%, 34%, and 34% respectively). (Figure 19) In light of the relative lack of a comprehensive infrastructure view (as evidenced in the previous section), these numbers might very well under-represent reality.



FIGURE 20

Factors resulting in unnecessary cloud costs incurred by percentage of organization's workloads that are currently deployed in the public cloud (n=350)



Achieving a certain level of experience with workloads in the cloud seems to enable organizations to address these challenges. As organizations migrate more than 25% of their workloads into the public cloud, they reported seeing more issues, jumping from the 5-10% range to 42-48%. Then as they have migrated more than half of their workloads to the cloud, those ranges fall to 29-34%. The companies reporting the highest percentage of workloads in the public cloud—more than 75%—are most likely to have these challenges under better control with only 13-18% citing them as issues. (Figure 20)

This illustrates that a substantial amount of learning is happening as companies deploy increasing numbers of workloads in the public cloud. Additionally, this supports the universal argument that leveraging someone else's learning curve and/or experience is more cost-effective than developing your own.



Unified visibility and management is also, not surprisingly, key to overcoming these challenges. Respondents who have complete, unified visibility and management across all public clouds report experiencing issues at a much lower rate than the overall respondent pool. Interestingly, when it comes to incurring unnecessary cloud costs, the inverse is true. Only 12% of those with the complete, unified visibility and management reported they haven't incurred unnecessary cloud costs vs. 18% overall. (Figure 21)

Could this be because a lack of visibility means that the others are not aware of those unnecessary costs?

FIGURE 21

Factors resulting in unnecessary cloud costs incurred

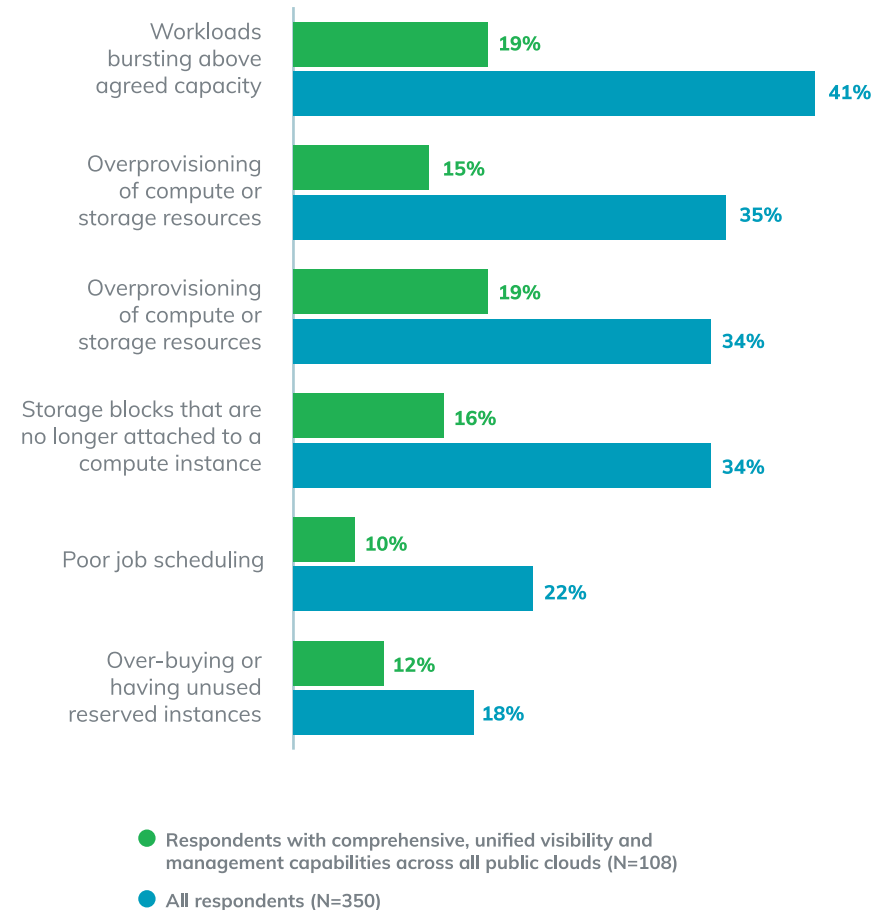
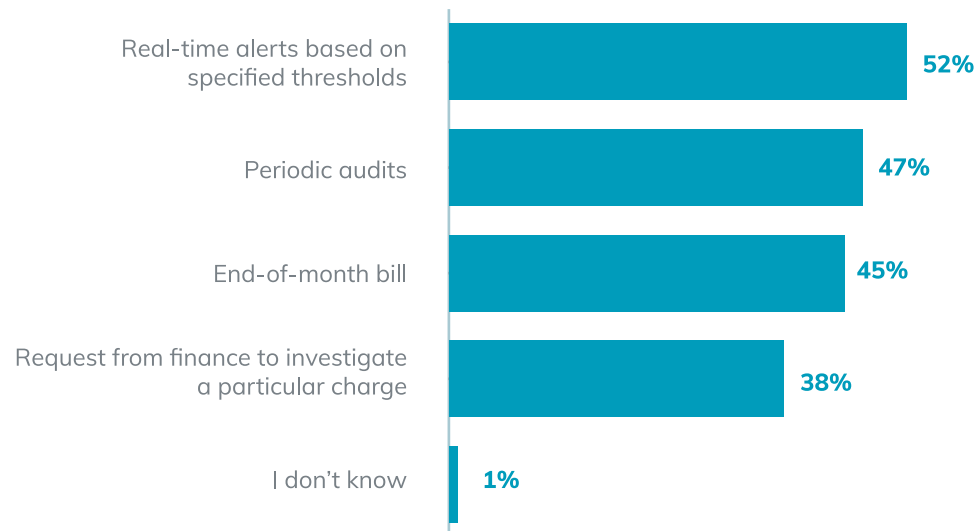




FIGURE 22

How cost-impacting changes in utilization are typically found (n=350)



So, how do companies find out about cost-impacting changes?

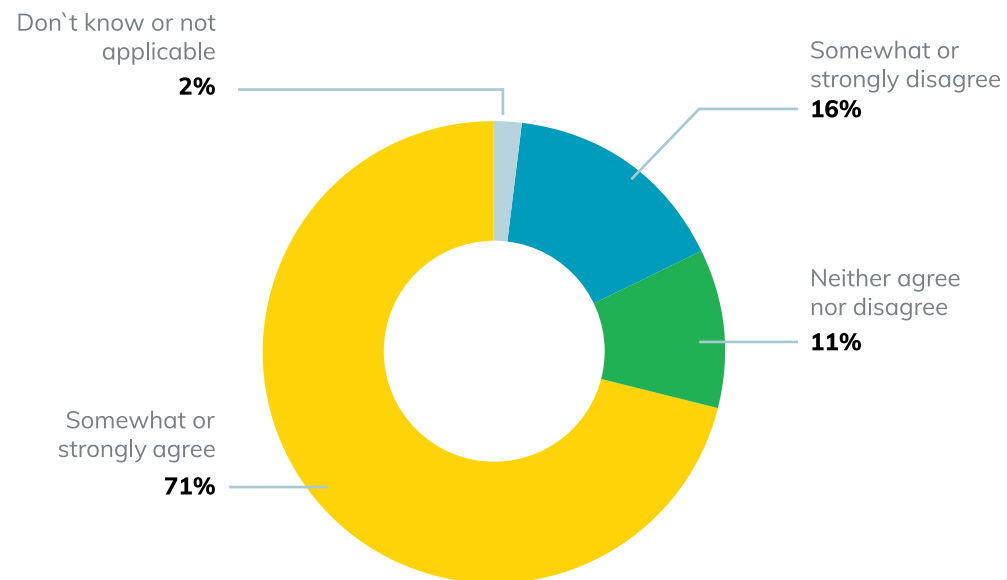
Too many are relying on just one approach, many of which can let those costs continue to accrue over a period of time. Over half (52%) have real-time alerts based on specified thresholds. (FIGURE 22)

But 45% of respondents use only one of these approaches, and of those, only 34% receive real-time alerts; 27% rely exclusively on periodic audits, and 26% on their end-of-month bill.



FIGURE 23

Teams are fed up with piecing together data from multiple IT operations management tools (n=350)



Having to cobble together data from multiple sources is fraught with challenges and frustration. Most respondents (72%) somewhat or strongly agreed that they are fed up with this piecemeal approach. (Figure 23)



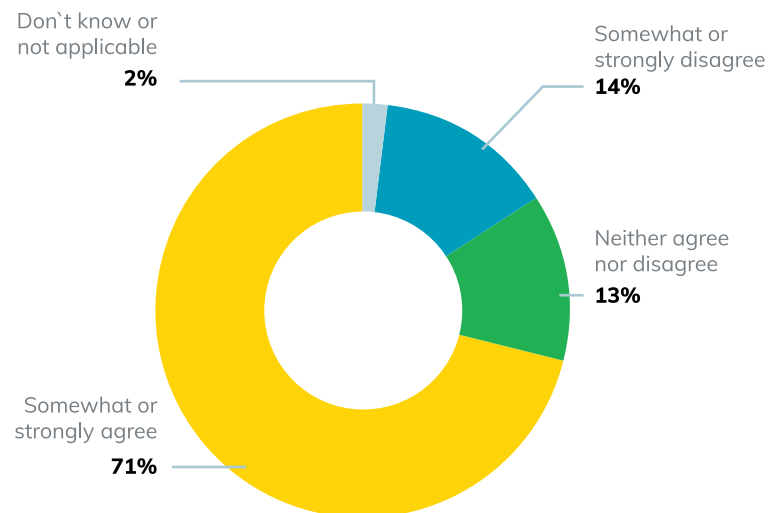
Limited visibility across the hybrid cloud environment has repercussions both within the team and on their ability to deliver results. Almost three-quarters of respondents (71%) reported that they somewhat or strongly agree it both creates inefficiencies and hinders their ability to maximize value. (Figure 24)

FIGURE 24

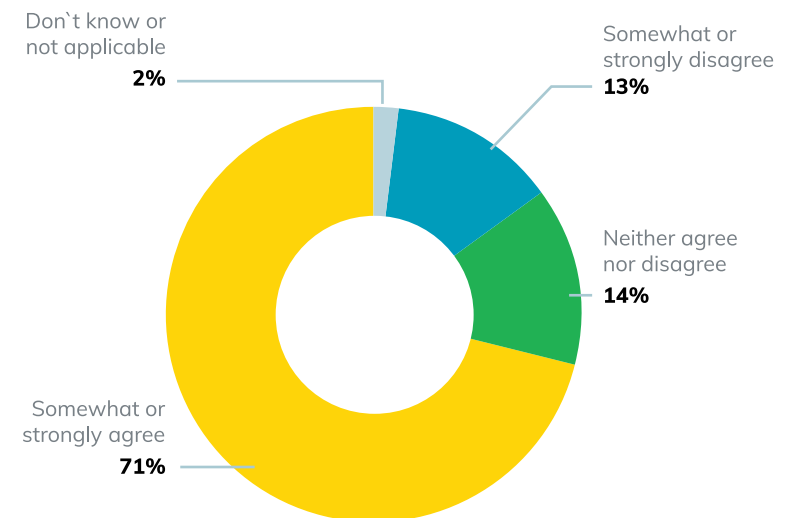
Limited visibility across the organization's hybrid environment...

(n=350)

...hinders ability to maximize value



...creates inefficiencies and wastes time





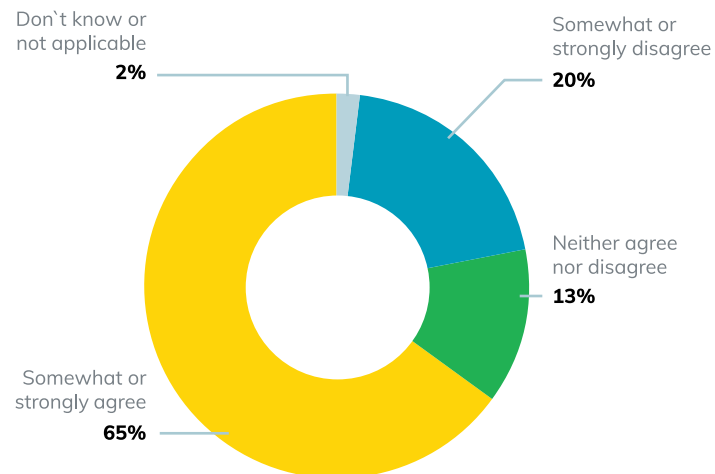
This can negatively affect the business. In fact, 65% of respondents somewhat or strongly agreed that when there is an issue, they are hard-pressed to identify the business impact, and 66% stated it is hard to understand if they are delivering the service levels the business needs. (Figure 25) This is important, because the ramifications go beyond inefficiency and cost—business agility and competitiveness are at stake.

FIGURE 25

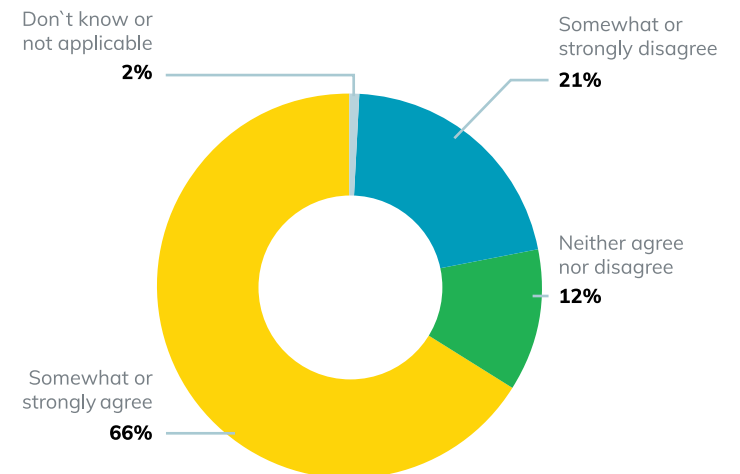
It's difficult to...

(n=350)

...identify the overall business impact of an issue



...understand whether we're delivering the service levels required for business success

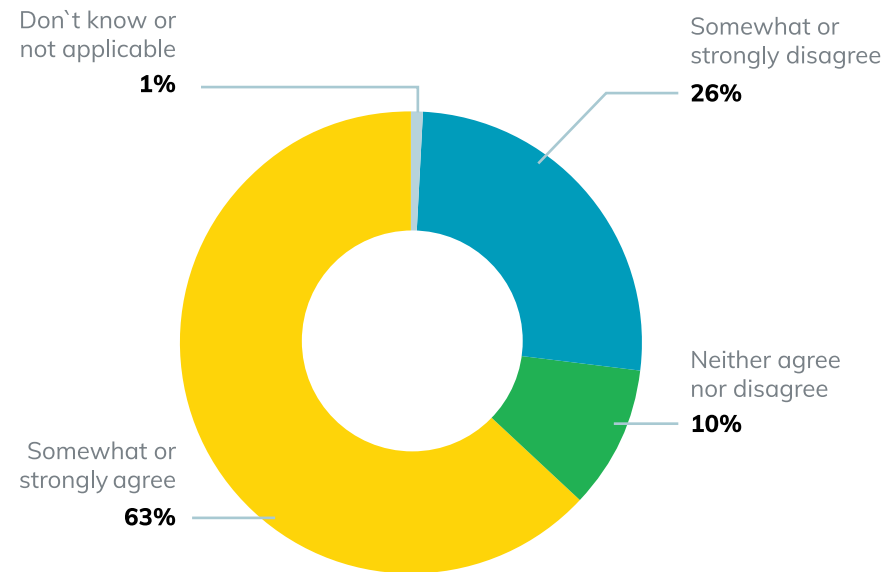




To make matters worse, these companies are not even getting the information they need to make more informed decisions—63% of respondents somewhat or strongly agreed that they are unable to make data-driven IT investment decisions. (Figure 26)

FIGURE 26

We are unable to make data-driven IT investment decisions (n=350)





Impact of stakeholder participation

Given the investments in and complexity of hybrid, multi-cloud deployments, it is not surprising that the executive IT team is an active cloud stakeholder in 81% of respondent organizations.

What is surprising, however, is the relative lack of active participation from other groups, which drops down to the one-fifth to one-third range (19-31%), especially considering that the cloud is often touted as a critical enabler of business transformation. (Figure 27) In fact, 39% have only one group as an active stakeholder, and of those, 77% say that group is the executive IT team.

FIGURE 27

Groups that are active cloud stakeholders in your organization (n=350)

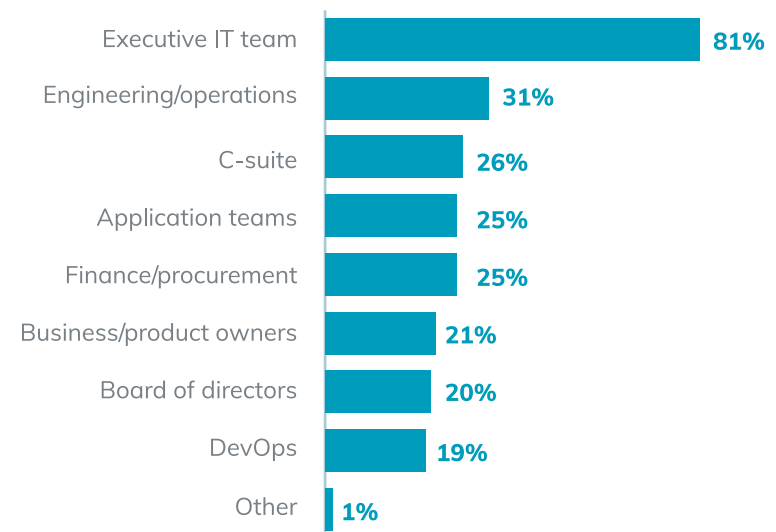




FIGURE 28

What percentage of your workloads would you never move to a public cloud?



So, does it matter if the executive IT team is the only active cloud stakeholder in an organization? It turns out that it does—in several different ways.

First, there is a correlation with the number of workloads that get deployed in a public cloud. While 50% of the overall respondent pool said they would never migrate more than 50% of their workloads, that number shoots up to 66% for organizations where the executive IT team is the only active cloud stakeholder. (Figure 28)



FIGURE 29

Reason(s) you would never move those workloads to a public cloud



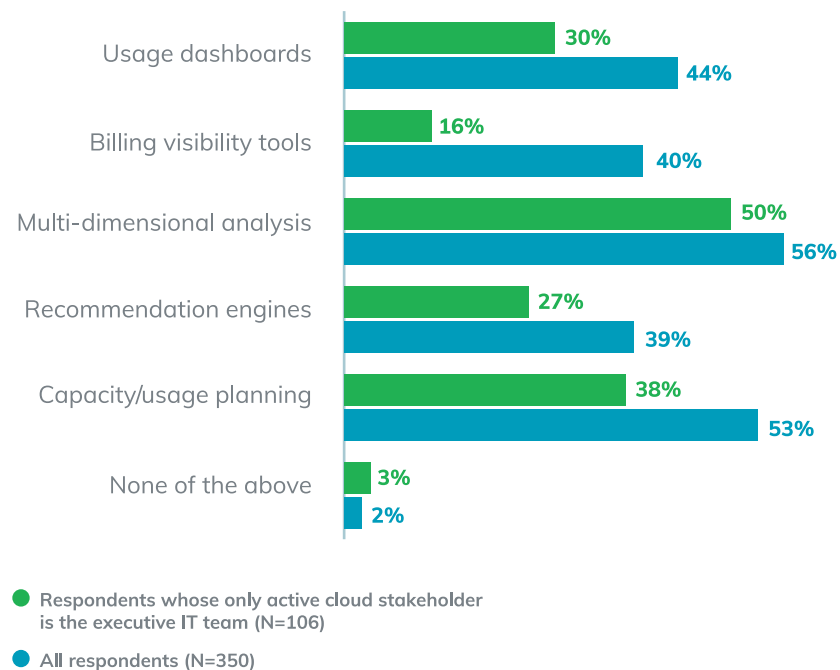
Interestingly, organizations whose only active cloud stakeholder is the executive IT team are less likely than the all-respondent group to cite the usual reasons. (Figure 29)

So, what is the problem? Are more workloads staying on premises because digital transformation/ cloud is a lower priority for these companies (hence the lack of other stakeholder groups)? Or is it a priority but the lack of active participation from the business drives the IT team to take a more conservative stance? We can only speculate.



FIGURE 30

Types of cloud cost capabilities your organization currently has



When it comes to tools and capabilities, organizations where the executive IT team is the only active cloud stakeholder are less likely than the overall respondent pool to have what they need across the board. In particular, only 16% reported have billing visibility tools (compared to 40% of the overall respondent pool), 30% have usage dashboards (compared to 44%), and 38% have capacity/usage planning tools (compared to 53%). (Figure 30)



Finally, this subset is also more likely than the overall respondent pool to report a variety of cloud visibility and management challenges. In particular, there is a double-digit difference in the number of respondents who reported the following:

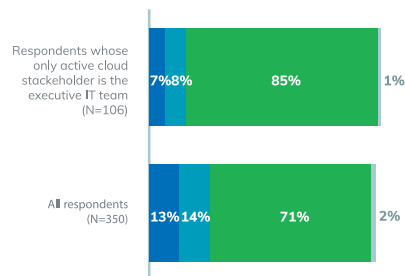
- 85% agree or strongly agree that limited visibility across their hybrid cloud environment creates inefficiencies and wastes time (vs. 71% of the total respondent pool).
- 79% agree or strongly agree their team works in silos (vs. 67%).
- 78% agree or strongly agree that it is hard to understand whether they are delivering the service levels required for business success (vs. 66%).
- 75% agree or strongly agree that it is difficult to identify the overall business impact of an issue (vs. 65%).
- 73% agree or strongly agree they are unable to make data-driven IT investment decisions (vs. 63%).

(Figure 31)



FIGURE 31

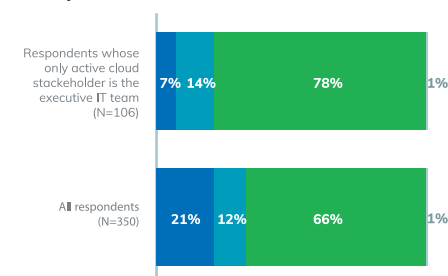
Limited visibility across our hybrid cloud environment creates inefficiencies and wastes time



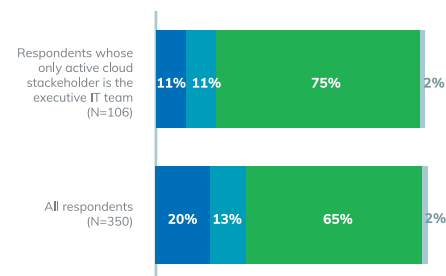
Our teams work in silos



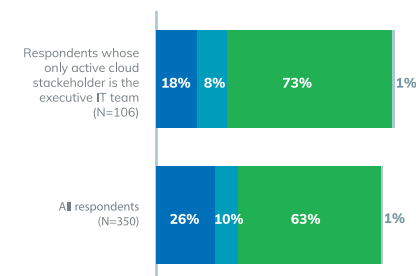
It's hard to understand whether we're delivering the service levels required for business success



It's difficult to identify the overall business impact of an issue



We are unable to make data-driven IT investment decisions



- Somewhat or strongly disagree
- Neither agree nor disagree
- Somewhat or strongly agree
- Don't know or not applicable

The case for unified, comprehensive visibility

Hybrid, multi-cloud deployments may be mainstream, but organizations are still facing a lot of challenges in maximizing the value while minimizing the risk. The results of this survey point to two critical areas, both principles within a best-practices FinOps approach, that can help businesses drive better results from their hybrid cloud deployments.

- The first is to build unified, comprehensive visibility into cloud infrastructures and processes right from the start. The current cycle of over-confidence, followed by setbacks as reality hits, followed by recovery and progress as experience builds, could then be replaced by a steady progression of results.
- The second is to engage the business as a more active stakeholder across cloud initiatives, which can lead to better overall outcomes. Here, too, unified visibility keeps everyone informed and up to date to align results with business objectives and make more informed decisions to support corporate strategies.





About Virtana: Know Before You Go

Virtana delivers the industry's first unified platform for migrating, optimizing, and managing application workloads across public, private, hybrid, and multi-cloud environments. Using artificial intelligence for IT operations (AIOps) technologies, including machine learning and advanced data analytics, the cloud-agnostic Virtana Platform solves the most difficult challenges facing enterprises as they seek to leverage public clouds. The platform enables a “know before you go” approach by providing intelligent observability into which workloads to migrate. It also ensures that unexpected costs and performance degradation are avoided once workloads are operating in the cloud. With the Virtana Platform, enterprises can confidently speed cloud adoption and reduce cloud operating costs by simplifying management of their IT environments.

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