

CLOUD RADAR 2023

# A NEW ERA OF CLOUD

Infosys  
cobalt





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## Executive summary

The corporate world embraced cloud more than 10 years ago, with cloud adoption peaking in 2014 and migration following right after. **It arrived as a single, neat solution.** Companies with aging data centers and burgeoning digital systems faced a choice: spend heavily to modernize server racks and proprietary networks or **move to cloud.** Early corporate cloud gracefully aligned the IT department's desire for modern systems with the business desire for lower costs.

Cloud has now entered a new era. Our research, based on interviews and a global survey of more than 2,500 respondents, shows that companies have moved beyond using cloud for storage and cutting costs — they rely on it for **sophisticated solutions, growth, and transformation.** In fact, they see so much promise in cloud solutions that they continue to invest in cloud while under-utilizing the cloud they have. Further complicating matters, enterprises don't have a good handle on cloud spend, security, and governance. They need **a new way to manage cloud.**

## Cloud today is for growth and transformation

Companies now look to cloud to modernize and to grow by leveraging cloud for differentiated business outcomes. They want cloud to help them open new revenue streams, access emerging technologies such as artificial intelligence (AI), and integrate acquisitions. And companies are happy with what cloud enables them to do. Nearly 75% report cloud migration very effective or extremely effective to meet objectives.

## Companies have over \$300 billion in unused cloud commitments

Companies have made big commitments to cloud and are committing more. Two-thirds have increased cloud spending this year, and four out of five intend to increase spending in the year ahead. Companies also continue to add new cloud vendors. This will only accelerate as cloud-driven AI and industry solutions continue to emerge.

But as cloud investment races ahead, utilization has not kept pace. Companies have on average utilized 47% of all the cloud they have already committed to, our survey found. This is reflected in the financial reporting of major cloud providers. The 12 cloud and cloud-based software providers in our survey collectively report more than \$300 billion in corporate cloud commitments that have not been used. A company that does not utilize the cloud it committed to faces only bad outcomes: lose money, spend more to accelerate migration, or renegotiate from a point of weakness.

## Half of companies struggle with cloud cost, security, and governance

This new era brings new complexities. In 2023, nearly two-thirds of respondents (65%) use three to four cloud or cloud service providers, a 75% increase over the proportion with three or four providers in 2021. Over half (53%) say they struggle to monitor costs in this environment. And more than one-third of the time, companies silo cloud ownership decisions within business or IT, not both. Finally, more than 40% have lax policies to govern cloud deployment. These management issues contribute to surprise cloud costs, unseen security threats, and cloud management confusion.

## A new era in cloud requires a new approach

Companies use cloud to grow, and it delivers. As cloud usage expands, companies risk losing cost, security, and management control. The following three steps guide enterprises to better utilize and manage cloud.

1. **Master monitoring and prediction**
2. **Embed the business case into cloud**
3. **Adopt a value-centric cloud operating model**

This report explores the new sophistication and complexity of cloud, and the ensuing management challenges. A new cloud management approach bridges the gap between cloud growth and business value.



# Cloud today is for growth and transformation

Banks move slowly. That's their heritage, going back to the Italian bancas, or benches, that the Medici family and others used to safely lock up coins and forward to the vaults and fortresses of 20th century banking. In the 21st century, safe and slow banks now contend with agile, digital-native competitors and higher customer expectations.

Citizens Bank, a 195-year-old institution based in Providence, Rhode Island, began its cloud-powered modernization four years ago. They migrated existing systems to cloud and developed new cloud-native architecture and applications.

Citizens' cloud-based technology upgrades have empowered the bank to rapidly respond to crises. When the US Small Business Administration passed the Paycheck

Protection Program in response to the COVID-19 pandemic, Citizens quickly built cloud-based tools to help clients apply for forgivable loans. It [processed 48,000 loan applications and disbursed about \\$5 billion US](#) in timely support to client companies.<sup>1</sup>

Like Citizens, companies that once moved to cloud to modernize, cut costs, and boost resilience now find new reasons to continue shifting to cloud. Cloud has entered a new era as a tool for growth and transformation.

In the early days of cloud, transformations like replacing systems went hand-in-hand with cost savings. As companies just began to adjust to the capital expenditure cycle associated with running data centers, a new option emerged: Move to cloud.

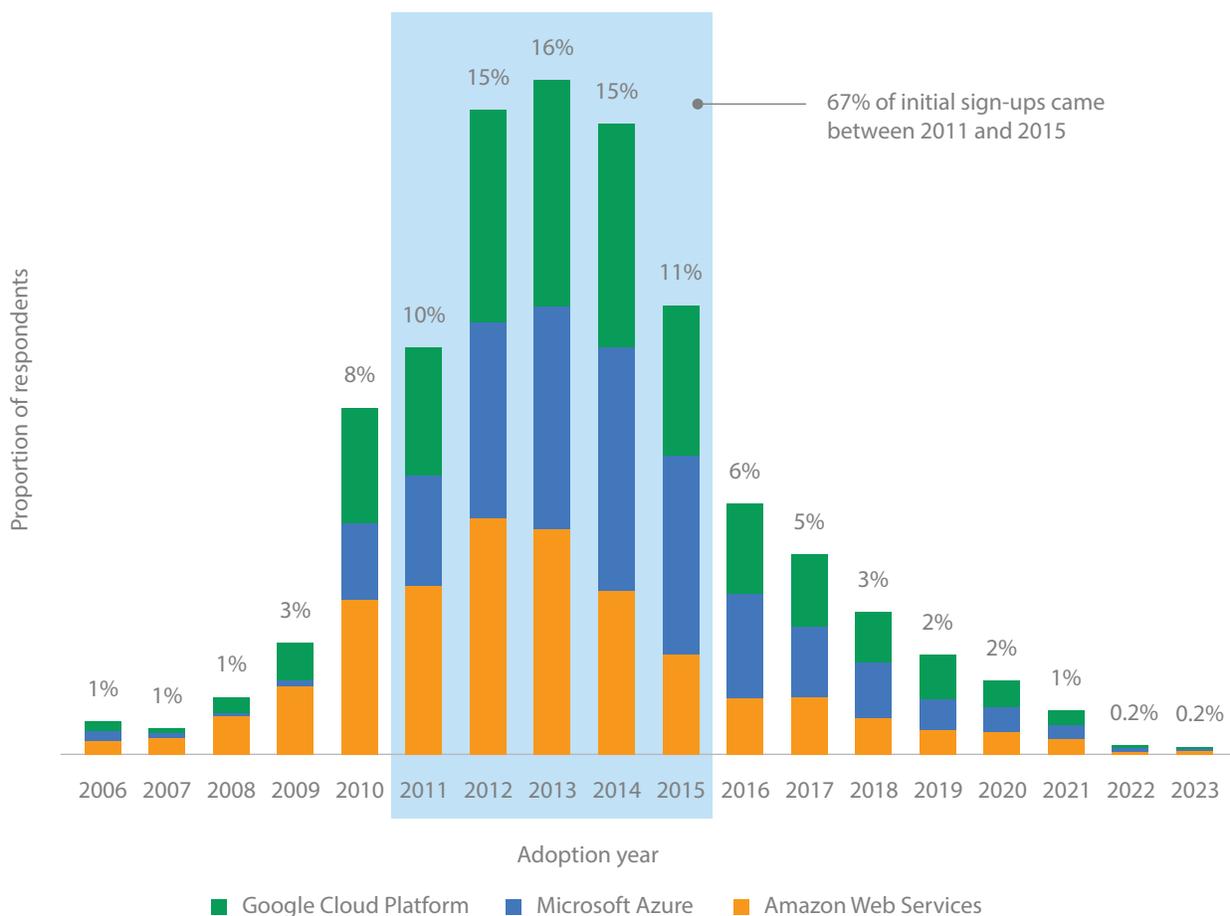
When insurance business NN Life Japan studied the best way to modernize its technology in 2016, cloud-based platforms rapidly emerged as the best choice, chief technology officer Drew Flynn recalled.<sup>2</sup>

“The infrastructure we had at that time was not cutting it. It took too long to provision the servers; we had complicated processes and

limited features and functions,” he says. “The cloud promised to solve these issues and provide improved speed and reliability.”

Early corporate cloud satisfied IT’s need for modern systems and the business’s desire for stable spending, without the constant replacement and expansion of server racks — sparking a peak period of enterprise cloud

Figure 1. Two-thirds of companies began in cloud between 2011-2015



N = 2,523. We asked respondents what cloud providers they use, and when they started using the ones they selected. Roughly two out of three respondents use all three major cloud service providers.

Source: Infosys Knowledge Institute

migrations, from 2011 to 2015. According to our survey, 67% of over 2,500 companies signed their first cloud contract during this period.

Companies continue to migrate to cloud, and our research shows that replacing and updating systems is still a top motivation, but it is decoupled from reducing costs. Companies move to cloud for growth and transformation, encompassing four specific motivations:

- Replace or update systems
- Enable new revenue streams
- Access new tech or capabilities
- Integrate acquisitions

Each of these four motives are three times more important than reducing costs.

Companies think about cloud differently today, says John Wei, chief technology officer at Comerica Bank. Where early cloud focused on replacing physical computer infrastructure

with virtual boxes, the new era of cloud is centered on applications and capabilities.

“We’re still talking about cloud. But we’re no longer talking about boxes. We’re no longer talking about servers, but we’re actually talking about capabilities,” he adds.

New on-demand capabilities will require composable architectures that span many clouds, which prompts two big shifts, Wei says. First, the network and orchestration of cloud applications and ecosystems becomes more important, and second, companies need to re-think how they procure cloud services.

This shift in priorities reflects the evolving nature of cloud. Once an infrastructure destination, cloud has grown to include a broader range of services, applications, and platforms.

This will only accelerate with the emergence of cloud-driven artificial intelligence (AI) and industry solutions.



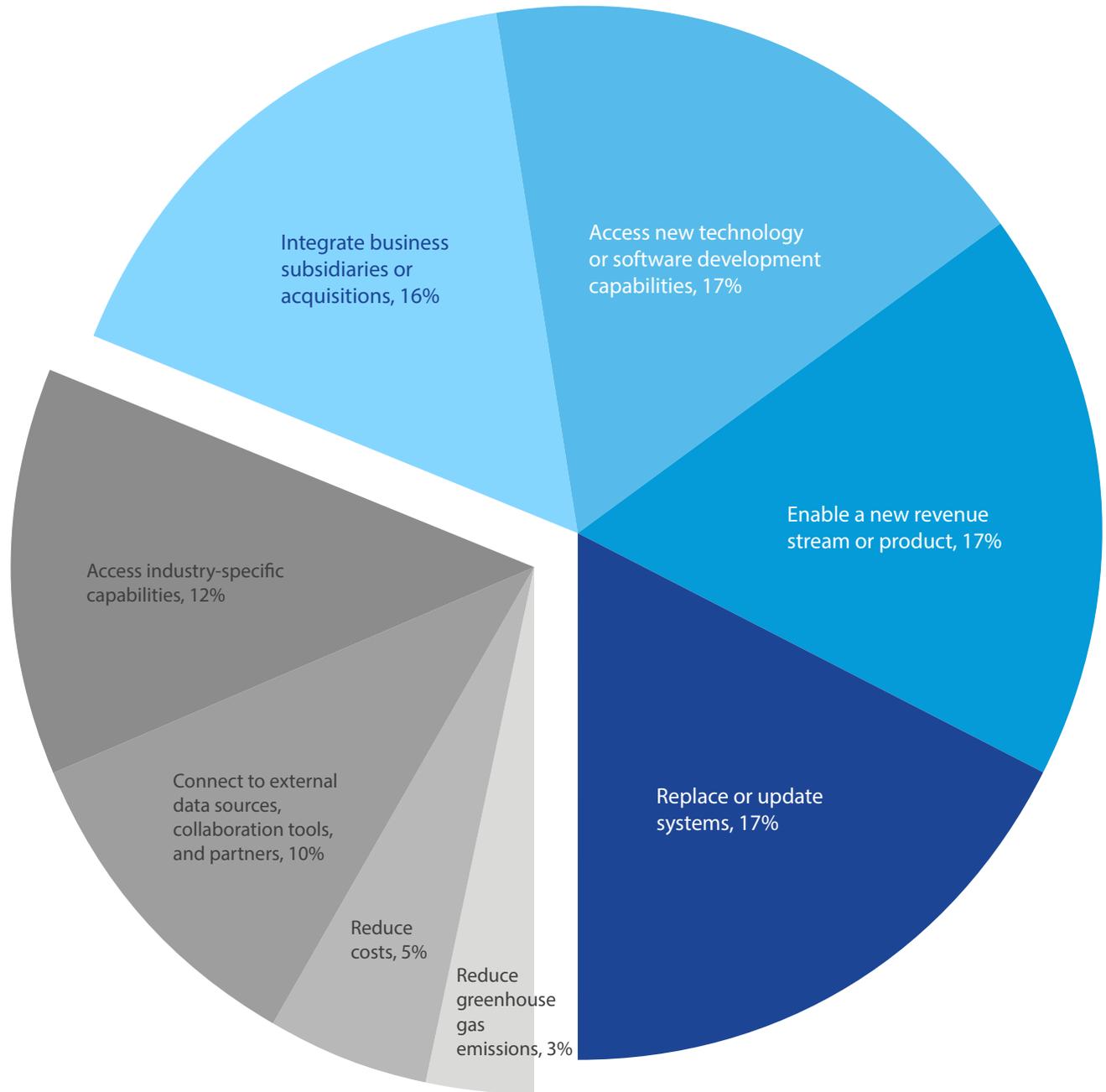
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***“Cloud is central to business strategy today, and intertwined in every aspect of successful digital enterprises.”***

**– Anant Adya, executive vice-president, Infosys Cobalt, Infosys**

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Figure 2. Companies migrate to cloud for growth and transformation



Average relative importance

*N = 2,523. We asked respondents to allocate 100 points among reasons to move to cloud. Updating systems and growth-oriented motives topped the list. We excluded the categories 'not sure' and 'other' from this chart because they do not reflect specific cloud migration motivations.*

Source: Infosys Knowledge Institute



## Cloud works, and companies want more

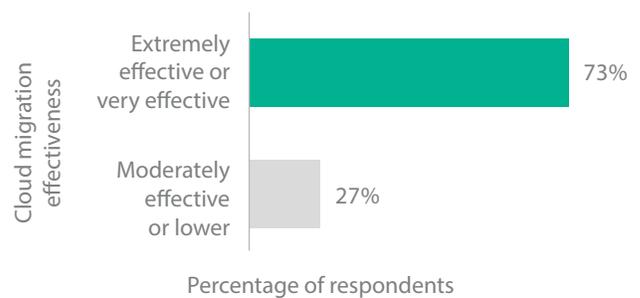
Three-quarters of respondents say cloud migration is very effective or extremely effective in meeting their objectives.

Our survey found strong enthusiasm for cloud across industries and regions. While we uncovered regional variation in which cloud service providers were most popular, respondents universally reported that cloud migration has gone well.

Companies have a more nuanced view of the performance and capabilities different cloud providers can deliver. For example, certain cloud providers have a reputation for handling large quantities of data more efficiently, and others excel at interoperating with standard business applications. That influences cloud choice decisions, says Ann-Kathrin Sauthoff-Bloch, managing director Germany, Infosys Consulting.

“Business leaders, in consultation with IT leaders, must make strategic choices on what data, workloads, and solutions run on what services,” says Sauthoff-Bloch.

**Figure 3. Cloud delivers for executives**



*N = 2,523. 73% of respondents feel that their cloud migration initiatives are either very effective or extremely effective.*

Source: Infosys Knowledge Institute

## Room for improvement in innovation, integration, and spend

Cloud works well, but a closer investigation found a few areas for improvement, including using cloud for innovation, integration, and cost reduction.

Using cloud to access new technology or software development capabilities is a powerful corporate tool. In addition to innovation, cloud gives companies the speed and the ability to quickly experiment with emerging capabilities.

Cloud’s quick scalability and broad accessibility make it a natural choice to integrate acquisitions. However, this requires a more mature cloud capability, known as interoperability. Interoperability is a highly valuable feature for companies with a mix of cloud and on-premises systems. It requires both of technology and business expertise, says Suresh Karra, an associate

vice-president of cloud services at Infosys. “Achieving interoperability in cloud requires cloud architecture and business processes to work together toward a common goal,” Karra says.

Respondents reported that using cloud to reduce costs falls short. This echoes what chief information officers (CIOs) have stated in recent years: As corporate data has proliferated and cloud has grown more complex, cloud has grown more useful **but does not save them more money.**<sup>3</sup> This could be a symptom of how companies have shifted their expectations for cloud — that is, they are more focused on things it can do beyond saving costs.

“Cloud can be a black hole for money,” says Chris Leigh-Currill, managing partner, Infosys Consulting.

**Figure 4. Companies have room for improvement in three areas**

Companies are migrating to the cloud to ...	Effectiveness
Access new technology or software development capabilities	Needs improvement
Integrate business subsidiaries or acquisitions	
Reduce costs	
Replace or update systems	Good
Enable a new revenue stream or product	
Access industry-specific capabilities	
Connect to external data sources, collaboration tools, and partners	
Reduce greenhouse gas emissions	Very Good

*N = 2,523. While respondents reported high overall effectiveness, they rated their companies as relatively less effective in the first three categories listed here.*

Source: Infosys Knowledge Institute

# Companies have over \$300 billion in unused cloud commitments



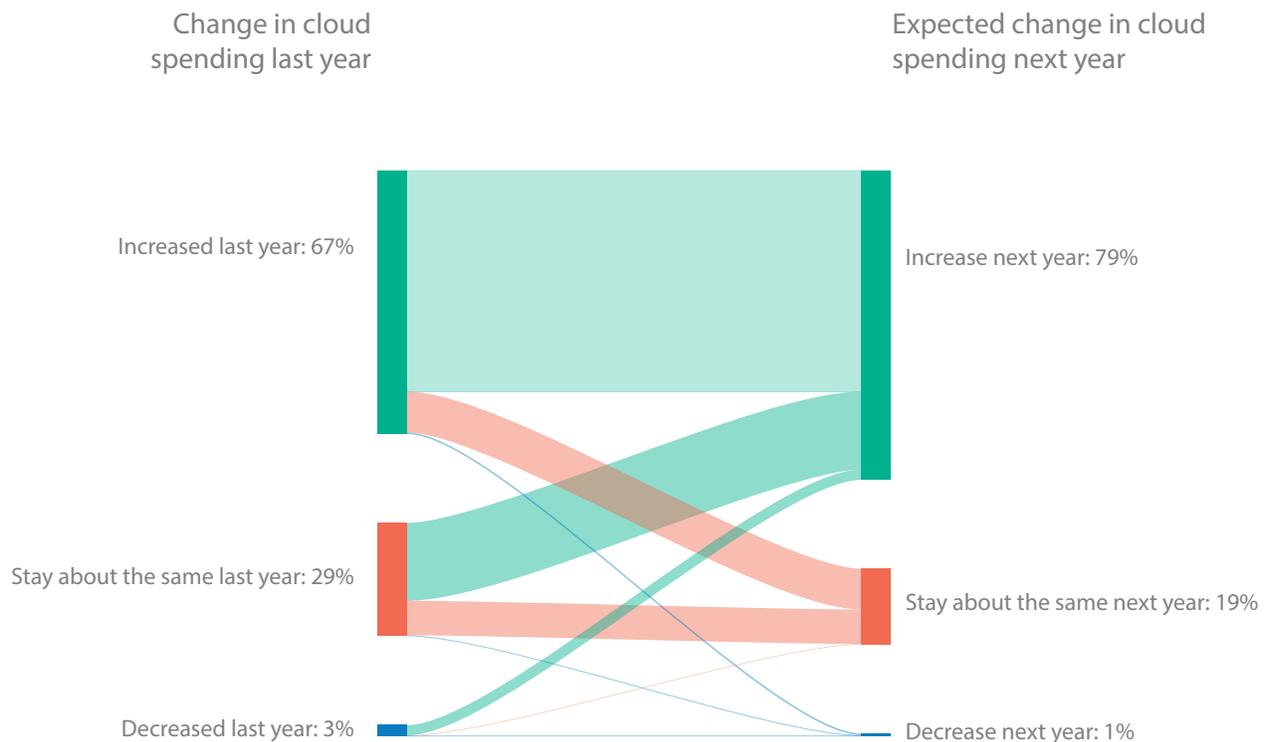
Cloud works so well that companies want to invest more in it.

Two-thirds of companies have increased cloud spending this year, and 80% say they intend to increase spending in the year ahead. This trend defies early 2023 expectations, when tech companies initiated layoffs, and the specters of recession and corporate spending cutbacks loomed.<sup>4</sup>

Yet even then, cloud spending did not slow down — and is still expected to increase.

Although this might be because the recession — and associated cutbacks — have eased, our research indicates that companies use cloud to accomplish many goals and are so satisfied with it that they are not cutting cloud spending.

Figure 5. More companies will increase cloud spending



*N = 2,505. We asked companies about the change in their cloud spending last year and their spending expectations for next year. The vast majority expect to spend more more next year. About 1% of respondents were unsure of how cloud spending changed in the last year.*

Source: Infosys Knowledge Institute

## More cloud spending, more cloud providers

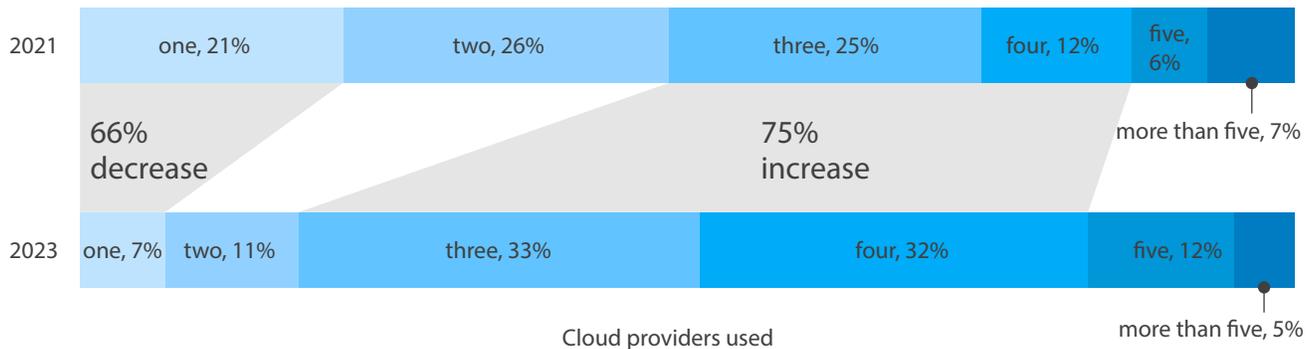
Companies continue to add cloud providers. In our 2021 cloud research, most (51%) companies reported using two or three providers for cloud infrastructure or services.<sup>5</sup> This year, the biggest group (65%) of companies use three or four cloud providers or services. Companies who rely on one cloud provider represent an even larger shift. The proportion of companies with a single cloud provider decreased from 21% in 2021 to 7% in 2023.

“Massive, monolithic migration is off the table,” says Umashankar Lakshmipathy, executive vice-president and head of Cloud,

Infrastructure, and Security Services, Europe, Middle East, Africa for Infosys. “Instead of a singular cloud destination, companies want the right cloud for the right situation. Cloud in 2023 must be quick, comprehensive, customizable, and priced fairly.”

Even if a company has an expressed preference or strategic reason to go all-in with a particular cloud, a department will inevitably find a reason to stay with an incumbent or opt for a service or solution from another operation, says Leigh-Currill. “The genie has escaped, and most companies continue to add more cloud providers,” he says.

**Figure 6. Three to four cloud vendors is the norm, using one is rarely done**



*N = 2,561 (2021) and N = 2,523 (2023). The proportion of companies with three or four cloud service providers has increased more than 75% since 2021 while the proportion with only one cloud service provider has shrunk by 66%.*

Source: Infosys Knowledge Institute

## But cloud utilization has not kept pace

As cloud investment races ahead, utilization of that contracted capacity has not kept pace. Companies have utilized less than half (47%) of the cloud they already committed to.

One of the most well-known examples of unused commitment is Sabre, a US-based travel company. In January 2020, Sabre signed a 10-year cloud services deal reportedly worth \$2 billion with Google Cloud, but made headlines 18 months later for [slow cloud migration](#).<sup>6</sup> Sabre managed to consume only \$10 million of its commitment in those 18 months. Since then, Sabre has described strong acceleration of its cloud program, noting that it had [shifted 69% of its compute to public cloud](#) by spring 2023.<sup>7</sup>

While Sabre accelerated its migration, our research reveals that many companies are not using the cloud they've committed to (see Figure 7).

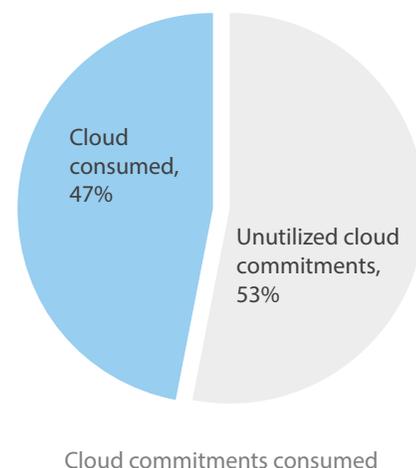
Major cloud providers also reflect this gap between cloud commitment and migration in their financial reporting.

In 2022, Google Cloud earned \$26.3 billion revenue for its parent company Alphabet but reported a \$64.3 billion revenue backlog, primarily related to Google Cloud and unused capacity from customers. Amazon's AWS flagged up \$110.4 billion of unspent commitments at the end of 2022, noting that customer usage drives revenue. Microsoft in July 2023 reported \$53.8 billion in unearned revenue, mainly from contracted cloud services not yet in use. These reported

numbers represent \$228.5 billion in unused cloud commitments.

When we account for other cloud providers in our survey, this number expands to \$321.4 billion in unused cloud commitments. While this does not indicate a near-term problem, companies that fail to meet their cloud contracts stand to face higher costs as cloud providers renegotiate contracts.<sup>8</sup>

**Figure 7. Companies have only used 47% of their cloud commitments**



*N = 2,509. We asked: "What percentage of the cloud services your company has contracted for have been consumed?"*

*These types of contract commitments became very popular after 2018, and typical terms were three to five years. Our research indicates most of these contracts had to be extended because of an inability to consume contracted cloud services in the timeframe allotted. Almost 60% of our respondents had only consumed between 30% and 50% of their current commitment.*

Source: Infosys Knowledge Institute

## Blend and extend

When money pledged has not yet been spent, it creates problems for both cloud clients and their providers, according to Shyam Vijayan, an associate vice-president with Infosys Cloud Services.

A company that fails to utilize cloud commitments faces only bad outcomes: Lose money, spend more to accelerate migration, or renegotiate from a point of weakness. In renegotiations, companies blend prices and then extend the initial terms, often creating a larger commitment in the process.

If they do not spend by the end of their cloud contract, they must pay the balance or renegotiate contract terms. This happens so frequently that it has earned a nickname: blend and extend. Blend refers to pricing revisions, accounted for on a blended basis until the new end of the term. Companies blend prices and then extend the initial terms.

Typically, clients get the best terms on their initial commit contracts, which include incentives like volume discounts and billing credits. But in renewal periods, cloud providers have the stronger negotiating

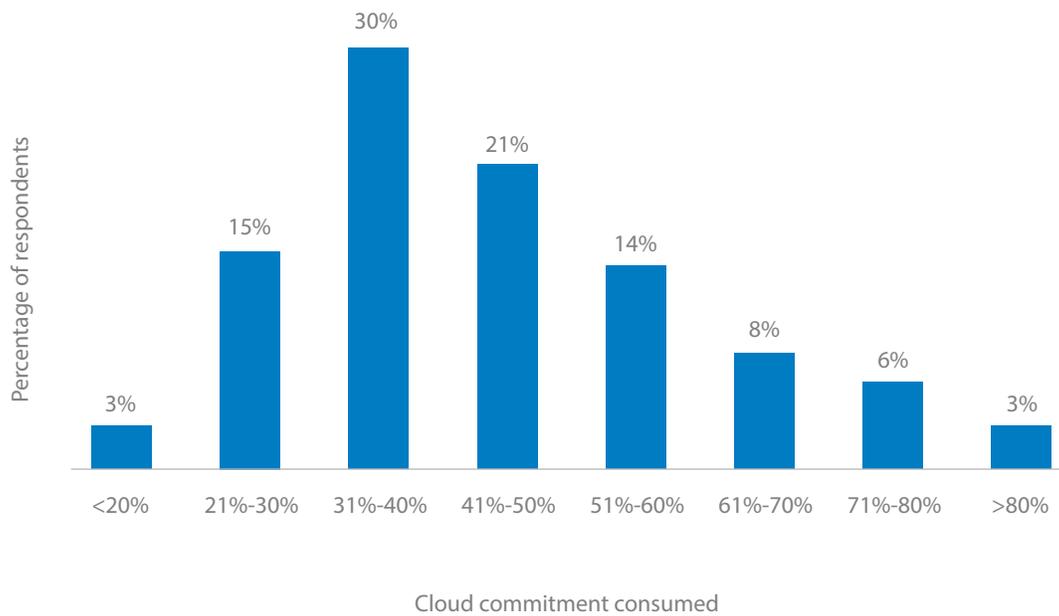
position. This stronger position comes from the simple truth that it is a Herculean and costly task for a company to move their systems from their current cloud providers to new providers.

These multiyear cloud commitments surged in popularity after 2018 and typically last three to five years. Our research indicates most of these contracts were extended because of an inability to consume contracted cloud services in the time allotted. About 70% of our respondents had consumed only 50% or less of their cloud commitments (see Figure 8).

Cloud providers face a problem when numerous clients fall behind on their committed or planned utilization, says Mukesh Nakra, associate vice-president of cloud services at Infosys.

"Building cloud capacity in data centers is a six- to nine-month timeline, and requires capital investments. The provider's capital outlay is predicated on the fact that clients will spend that money. But if the clients don't follow through, the provider isn't going to get the return on that investment," he adds.

Figure 8. Less than one-third of companies use most of their cloud commitments



*N = 2,509. We asked: "What percentage of the cloud services your company has contracted for have been consumed?" These types of contract commitments became very popular after 2018 and typical terms were three to five years. Most of these contracts had to be extended because of an inability to consume contracted cloud services in the timeframe allotted. About 70% of our respondents had consumed only 50% of their current commitment or less.*

Source: Infosys Knowledge Institute

## Half of companies struggle with cloud cost, security, and governance

Companies like what cloud does but lack confidence in their ability to control or manage it. More than half of companies struggle to monitor costs. One-third allow unilateral cloud decisions by IT staff or business leaders, despite abundant evidence that cloud works best as a techno-business collaboration. And four out of 10 companies do not have adequate policies to govern who gets to deploy cloud.

As cloud grows more sophisticated and more essential to enterprise operations, these management issues magnify the risks linked to cost, security, and governance.

## Costs without control



Companies know what they spend in cloud. However, monitoring costs and forecasting future cloud costs are the most significant cloud management challenges companies face today. As companies contract more cloud services to access new technologies, such as AI, and scale infrastructure to meet the demands of new technologies, those cost challenges will only grow more significant.

This makes the practice known as financial operations, or FinOps, more critical, says Rakhi Gupta, a partner in Infosys Consulting’s CIO advisory practice.

“Companies must shift toward a cost-conscious mindset and integrate new ways of working informed by objectives and key results,” Gupta says. “But the benefits are evident — improved financial accountability, accelerated business value, and a more cloud cost Agile organization.”

**Figure 9. Cost management is a challenge in the new era of cloud**

Our research reveals cloud executives are least confident in their ability to manage these three things:

### 1. Monitor costs

My organization has a complete view of all of its costs associated with cloud services.

### 2. Optimizes costs

My organization actively optimizes its costs associated with cloud services.

### 3. Predict costs

My organization accurately predicts future costs associated with cloud services.

Source: Infosys Knowledge Institute

For example, Amazon's Prime Video unit [shocked the cloud developer community](#) by describing how it reduced cloud costs by 90% by shifting a video quality monitoring tool from distributed microservices to a monolithic application.<sup>9</sup>

Amazon's cloud overspending news was a treat for internet geeks. AWS alumnus Adrian Cockcroft mentioned that many added their comments, [including some bad takes](#).<sup>10</sup> Cockcroft argued that the Prime Video team showed good discipline by re-engineering many costly microservices into a more cost-efficient, super-sized, microservice (not a monolith).

Setting aside the microservices versus monolith debate, Amazon used technology in the best way businesses can use it: to solve business problems, a truism that can get lost [in the push-and-pull between software engineering techniques](#).<sup>11</sup>

Analogous discussions about cloud have

developed in business and finance domains as new managers must study cloud costs and potential changes. The distributed nature of cloud makes a holistic bill hard to read and comparisons difficult to divine.

Companies may soon have help in finding clarity on managing cloud costs. In May 2023, the FinOps Foundation, an affiliate of the Linux Foundation, launched a project to help companies make sense of their cloud spending. The FinOps Open Cost and Usage Specification (or FOCUS) project is working to standardize cloud costs and [bring a common structure](#) to how companies pay for cloud.<sup>12</sup>

Comerica's Wei notes that coming innovations in cloud will also come with progress toward better cost clarity around cloud.

"As we move higher and higher in the value chain, the notion of pricing by transaction will become more tangible and real. The conversation in five years is going to be quite different," he says.

## Companies lack security safeguards



In the past, cloud skeptics opposed migration because they feared losing control of cybersecurity. More recently, cloud advocates argued to put security in the hands of cloud providers, who have greater depth and experience in cloud security. Neither case holds up — migration doesn't mean handing security over to cloud providers. [Moving to cloud creates new security challenges](#), and security chiefs are working to address known vulnerabilities, and seek out security blind spots, says Ankur Shah, a senior vice-president at cloud security firm Palo Alto Networks.<sup>13</sup>

"They have some controls in place, so it's not completely wild west, but there are many blind spots," he says.

IT departments and security chiefs must prepare for this, but so must all users with a system log-in. Companies generally require security training. Some 84% of companies surveyed for Cloud Radar 2023 say their

training includes a focus on cloud security. But 43% of companies have lax policies regarding who is authorized to deploy cloud resources. This can create "shadow cloud" deployments, where developers spin up cloud instances, Shah says. Developers often create "shadow cloud" because the current process for cloud deployments is too arduous — or they are simply unaware there is even a process.

**Figure 10. Cloud migration creates new security challenges**

Any department head or IT manager can add new cloud infrastructure, software, or applications.



*N = 2,523. 43% of respondents indicated that their company may allow more people than is necessary access to provisioning of new cloud services.*

Source: Infosys Knowledge Institute

This further complicates the cost governance challenge and introduces governance challenges. While chief information security officers (CISOs) may have a good handle on which cloud service providers and application services the enterprise is using, they may not be able to track what is being used, how, and by whom, at a more granular level.

Security companies have developed a growing number of tools aimed at providing better visibility into cloud systems, but that's only a partial solution, says Eyal Fingold, research and development vice-president at Check Point Software Technologies. It's one step to gain visibility, but it's a much larger challenge to systematically maintain visibility into larger and more complex cloud ecosystems.

"The fact is they now need to do the liability management not to 100 services but rather

to thousands that are ever-changing," Fingold says.

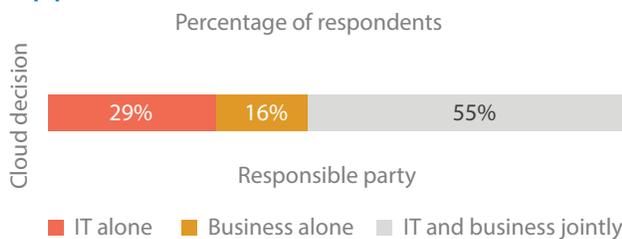
It's a parallel challenge to getting ahead of cloud cost management, he says, adding: "People are looking to find some quick magic, but there's no quick magic. There's still no good methodology to solve it."

"What they don't know is specifically what cloud services are being used, and what risks are introduced at every stage," Shah explains. Ultimately, security is a shared responsibility among the security team, developers, cloud providers, and business leaders. "Cloud providers can take care of the physical security and have the infrastructure at an operating system level. But the stuff that goes into cloud infrastructure, your applications, your data, is not the cloud provider's responsibility: it is the customer's responsibility," he adds.

## Transparent cloud ownership

Cloud usage and benefits span all enterprise functions. But cloud decisions are often made in isolation: 45% of our respondents reported that either the IT department or business leaders decide what cloud to deploy or how to manage cloud compliance.

**Figure 11. Too many cloud decisions happen in isolation**



*N = 2,523. We asked who was responsible for four major tasks in cloud:*

1. Compliance: Managing compliance in your cloud services
2. Deploy/retire: Deploying, retiring and terminating cloud services
3. Purchasing: Cloud purchasing decisions
4. Security: Security in your cloud services

*Options included the IT department and CIO office, CISO office, CFO office, COO office, head of cloud or similar position, and outsourced cloud management vendor.*

Source: Infosys Knowledge Institute

When cloud decisions are made in isolation, finances and security become difficult to govern. IT excels at deployment, management, and security governance, but may lack a full view of business value, ownership, or success factors of cloud initiatives. Without this knowledge, it becomes difficult for companies to track whether cloud initiatives effectively meet business objectives.

Business units have a good grasp of how cloud can impact business value, performance metrics, and customer needs. However, they often lack insight into the technical requirements and security decisions required to bring cloud initiatives safely to fruition. This gap can create service downtime, or worse, risks related to data privacy, leakage, or cyberattacks.

IT and business must collaborate for successful cloud initiatives that meet business objectives and mitigate risks. Cloud started as a solution that primarily required IT expertise, but modern cloud touches every function of a business and customers.

“I think the hardest part of cloud is getting the organization mobilized and marching toward a shared mission,” says Comerica’s Wei. Wei describes the complexity further: “Think about a diagram with technology on the horizontal axis and value on the vertical axis. The relationship between technology and value is a bell curve, and you want your company to be at the pinnacle of that curve. You do not want to be at either end of the curve, where value is low. On one end, with minimal technology, it’s hard to generate any value. And on the other end, if you have too much technology, you have too much complexity, and eventually the value will drop to zero, because all your time is spent on just managing that complexity. So you want to be in the middle of the bell curve, at the pinnacle, with just the right amount of technology, which delivers the most value — but the trick is that it’s difficult to find where that spot is.”



## **A new era in cloud requires a new approach**

Cloud keeps getting better. And it keeps growing more complex

Companies use cloud for innovation, and it works well. The advent of cloud-based AI solutions, which demand greater compute power and data capabilities, will turbo-charge the need for and growth of cloud. As cloud usage expands and accelerates, companies must act to govern and retain control.

What was a single, neat solution a decade ago has matured into a complex, robust portfolio of capabilities. Today, the questions What is cloud for? How to pay for cloud? How to keep cloud secure? and Who owns cloud? all have multiple answers. The correct answer varies from enterprise to enterprise.

But the new cloud approach must come with clarity on cost and governance, center on business value supported by deep technical skills, and involve a diverse decision-making team aligned around customer needs and responsible, secure processes.

Cloud and its adoption has reached a tipping point — just like legacy systems, with time cloud starts to become unwieldy and costly. Cloud has transformed from a tech imperative to a business imperative. Companies risk losing the benefits of this new era of cloud unless they take a new approach to how they manage it.

These three steps guide enterprises to better utilize and manage cloud.

1. **Master monitoring and prediction**
2. **Embed the business case into cloud**
3. **Adopt a value-centric cloud operating model**

## 1. Master monitoring and prediction



Business plans change, customer desires shift, and value sources evolve. With change comes the opportunity to reevaluate cloud goals and strategies — and the challenge of not adding new cloud costs and more complicated governance.

Cloud cost management and compliance are two significant cloud challenges for enterprises, especially without clear guardrails for who can purchase, deploy, and secure cloud.

Companies should be able to easily answer the following questions: What is the business case for purchasing more cloud? Who will be using cloud? Who is responsible for deciding to purchase it? And who will pay for it?

These answers are crucial to optimize cloud decisions. Answers to these questions empower organizations for future cloud contract negotiations. Historically, companies have more leverage in their first negotiation,

but incumbent providers hold the cards in renegotiations.

Even companies with informed, optimized cloud cannot guarantee cost control and effective cloud management. Technology experts and business leaders should collaborate to keep everyone on the same page and predict future costs.

“These are not controversial concepts, but it’s hard to change habits,” says Infosys Consulting's Rakhi Gupta. “Structuring your cloud strategy needs to be extremely dynamic because cloud providers constantly change their models, and business needs rapidly evolve.”

As companies continue to add technologies such as generative AI, internet of things (IoT), and data analytics, cloud environments will continue to become larger, more complex, and more expensive. To master monitoring and prediction, companies should establish guardrails for governance and costs.

## 2. Embed the business case into cloud

Cloud started out as a tool to save money and boost efficiency. But now this technology supports growth and transformation initiatives, and many companies still have not changed their cloud governance to thrive in this new cloud era.

Currently, too few enterprises link cloud deployments to a business case. Only 21% of our survey respondents said they always have an approved business case for adding cloud, and just 24% said they always link cloud deployments to the relevant business unit.

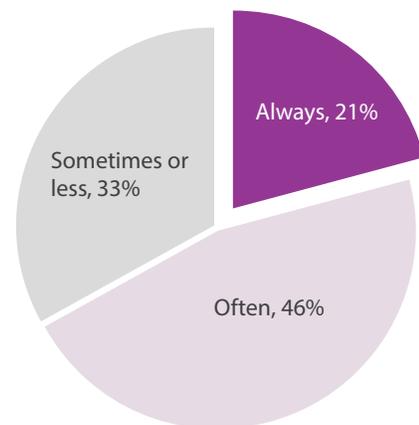
These are vital steps. Without a business case or business owner, tracking and attributing the return on investment of a cloud initiative is challenging, if not impossible.

And in a growth mode, the stakes are higher, because growth investments carry more risk than those predicated on cost savings.

But cloud must remain fast and flexible — those are its key attributes. So, the answer is not to slow down growth by hampering governance. There is no call for long forms to be filled and slide decks to be created for each cloud decision. Instead, forge a more [transparent, agile collaborative relationship between IT and business units](#). Both sides should share the responsibility to identify,

**Figure 12. Too often, companies add cloud without a business case**

How often does your cloud have an approved business case?



Source: Infosys Knowledge Institute

track, and report the value delivered by cloud deployments, says Carlos "Caloi" Santos, chief information officer at JG Summit Holdings.<sup>14</sup>

“Make sure the move to the cloud is aligned with business strategy and understand cost will be a factor because it’s a huge investment. Present the cloud proposal to the board as a collective effort between three C-level executives — the CIO, CFO, and CPO — endorsing it together. Moving to the cloud is not just an IT project.”

### 3. Adopt a value-centric cloud operating model

Agile collaboration between business and IT is critical for rapid and responsible cloud investment in an era of cloud growth. But this does not happen when communication and connectivity between teams is ad hoc. An updated operating model will enable teams to track value flow, create alignment, and encourage engagement around measurable goals.

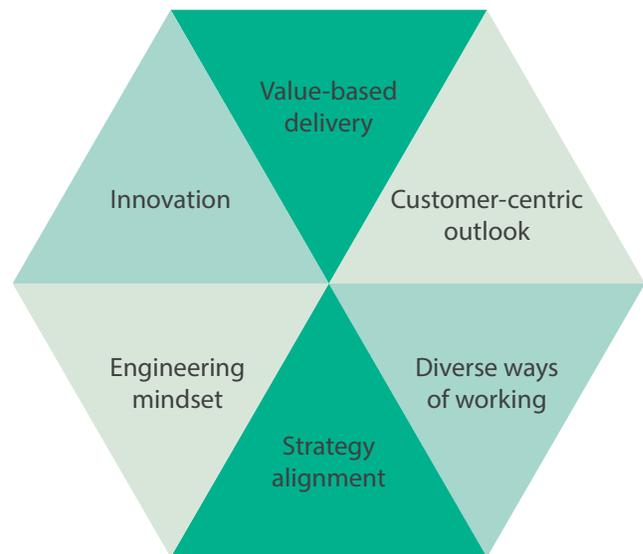


***“You must change the way you work to maximize the value you can get from cloud. To do that you have to ask different questions: Who are the users? Do the products you offer across the stack serve their needs? How do you organize dev and ops into one team focused on value? How often do you update products with releases? And how often do you ask whether your cloud users like what they are using?”***

**– Satsang Randhelia, associate partner, Infosys Consulting**

Companies increasingly realize the need to adopt a product-centric or value-centric, operating model.

**Figure 13. Six guiding principles of a cloud product-centric operating model**



*N = 2,523. While respondents reported high overall effectiveness, when we control for individual biases from the respondents, we find there are some areas where companies feel they are less effective than others.*

Source: Infosys Knowledge Institute

This model is product-centric in how teams organize — but it's less about products and more about the value delivered to the end user. This model is set up by organizing cloud teams around these customer journeys, client experiences, or value streams.

Successful organizations implement a value-centric cloud operating model, which consists of six differentiating principles:

- **Value-based delivery:** Develop cloud products and services for business value through revenue improvement, cost reduction, scalability, and customer satisfaction.
- **Customer-centric outlook:** Adopt a customer-first mindset that understands and addresses customer needs; use customer feedback and data to drive product development and adoption.
- **Diverse ways of working:** Leverage Agile and DevOps methodologies to foster collaboration, and develop training to ensure that the skills to deliver are in place.
- **Strategy alignment:** Establish a clear vision, objectives, and direction for each product and connect the product strategy to the overall business strategy.
- **Engineering mindset:** Evaluate every aspect of cloud services, products, and delivery for automation to minimize cognitive workloads.
- **Innovation:** Leverage cloud to innovate and develop differentiated customer solutions, stay ahead of industry trends, and respond to market demands.

A value-centric cloud operating model, infused with these six principles, empowers enterprise cloud organizations to act as internal hyperscalers that provide innovation and value to end users.

As perpetually evolving technologies like generative AI, IoT, and data analytics shape larger and more complex cloud environments, companies with a clear business strategy and agility are better positioned to adapt and thrive in this dynamic landscape.

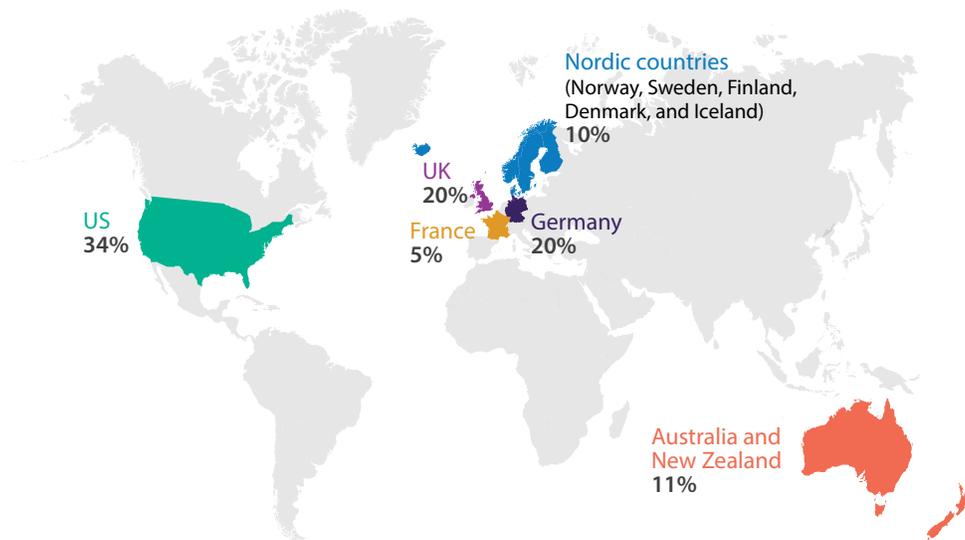
# Appendix: Research approach

## Qualitative interviews

To enrich insights, we conducted phone interviews with more than 50 industry practitioners, executives, and subject matter experts.

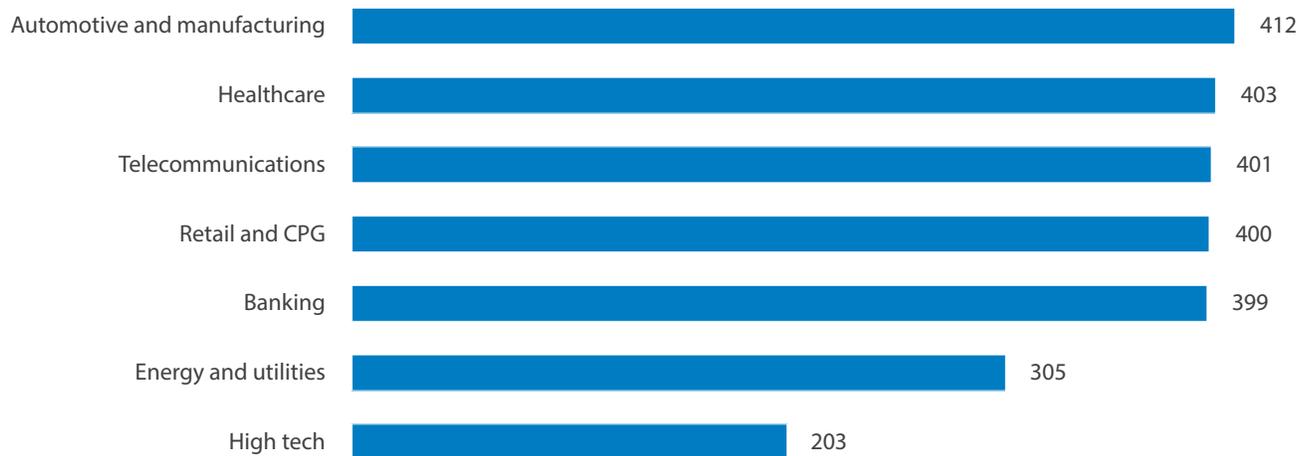
## Quantitative survey

Respondents by region



Source: Infosys Knowledge Institute

Respondents by industry



Source: Infosys Knowledge Institute

## Quantifying unused cloud commitments



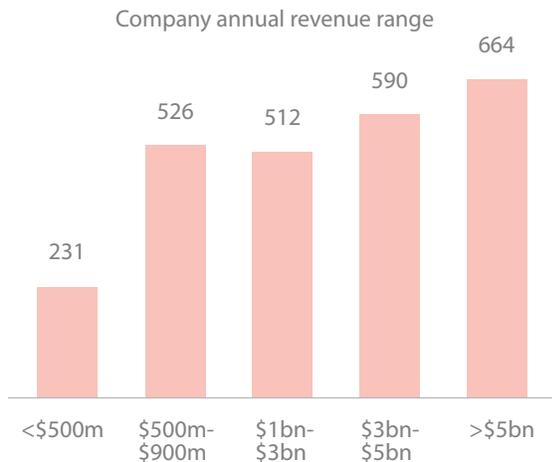
The unrealized revenue figure of \$300 billion is based on the declarations made by cloud service providers in their latest 10-K (or 20-F filing in case of foreign listed companies) to the Securities and Exchange Commission (SEC). To arrive at the unrealized revenue value, we searched for the following declarations in the liability section of the SEC filings of the company's balance sheet: "unearned revenue", "deferred revenue" or "backlog revenue". Most of the cloud provider companies have declared these values as a part of a short-term or long-term liability on their balance sheets depending upon the status of the contracts involved.

For the estimation, we recorded and then added the unrealized revenues for the cloud services providers covered in our study based

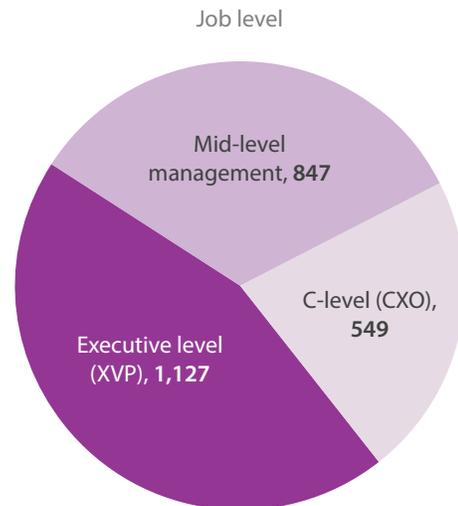
on their SEC filings. We only included B2B unearned, deferred, or backlog revenue, and excluded any declared unrealized revenue listed as a liability due to B2C subscriptions or services. For example, Microsoft Xbox and other personal subscriptions was recorded under personal cloud subscription services was not included in our data analysis.

Our research indicates that this \$300 billion represents 53% of currently contracted cloud services. From this we estimate that the total amount of currently contracted cloud services exceeds \$600 billion. Companies and their providers estimate the remaining \$300 billion in unused cloud commitments will be consumed in the next three to five years but will likely be renegotiated and blended into a larger figure for longer contract terms.

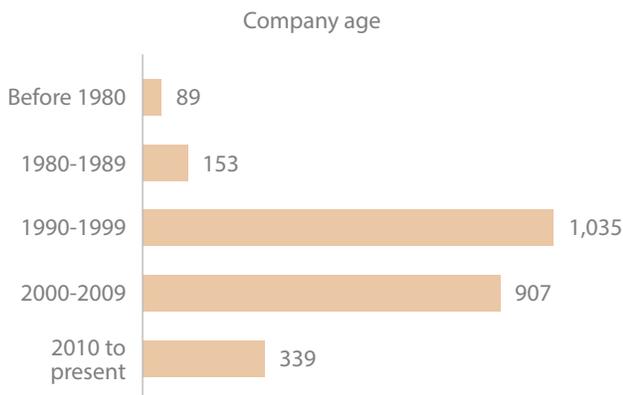
## Respondents by firmographics



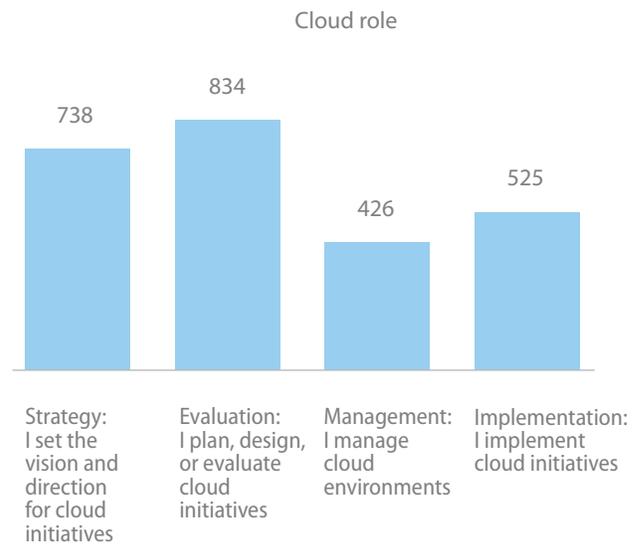
Source: Infosys Knowledge Institute



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