2023 Cloud outlook

How successful enterprises maximise the impact of cloud transformation

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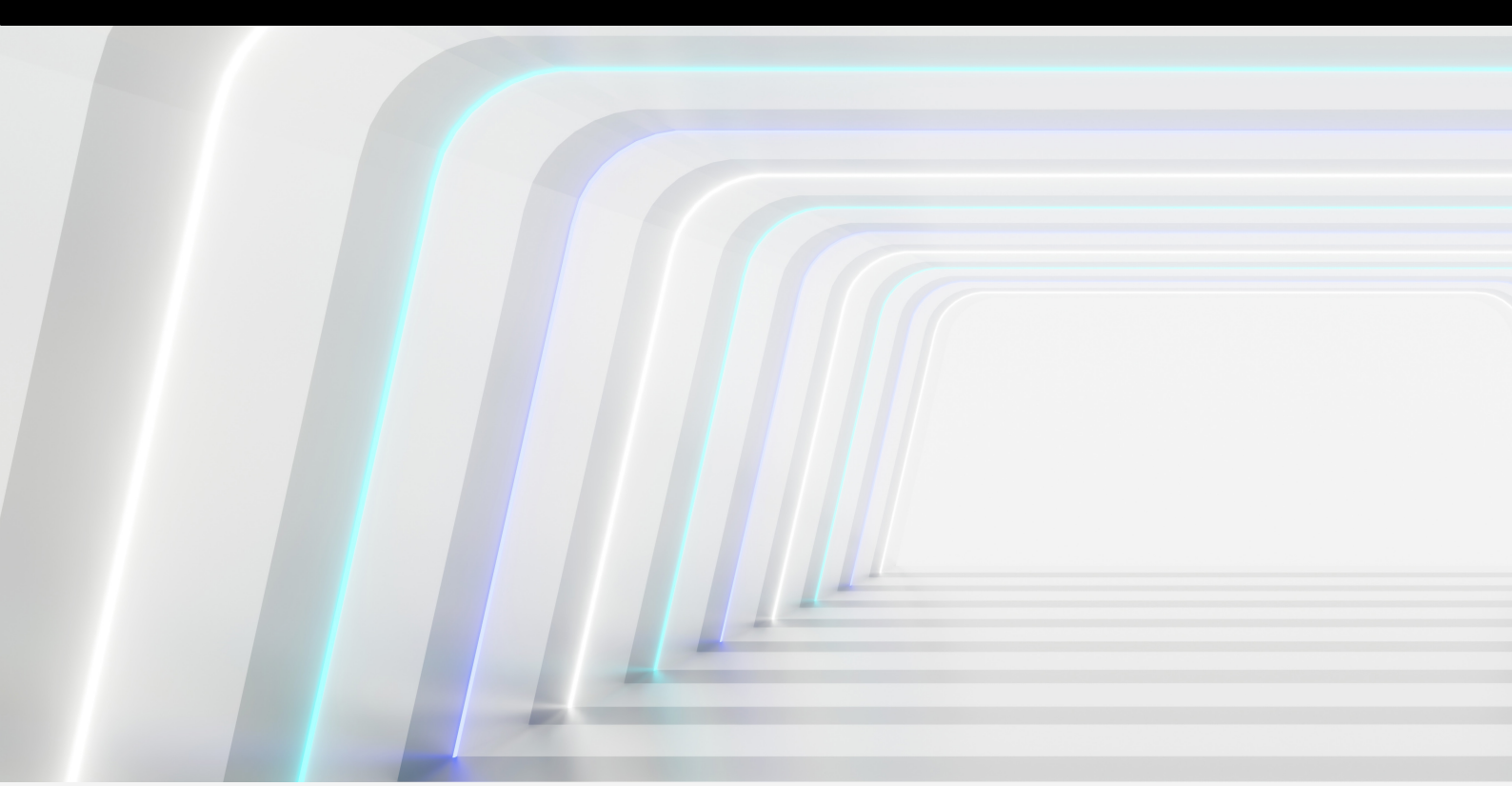


Executive summary

Embracing the cloud is a growing imperative for mid-sized enterprises. The cloud enables these companies to turbocharge their performance and stay competitive in a fast-evolving marketplace—one often disrupted by cloud-powered startups. Organisations boost their return on investment through the cloud by driving revenue growth and cost savings and reaping a host of other strategic and operational benefits.

Our study of 300 senior technology executives at mid-sized North American companies revealed that as these organisations advance in their cloud journeys, their cloud investment costs fall, while their revenue and cost efficiencies rise. Organisations just starting out in cloud migration—cloud beginners—invest 1.3% of their revenue in the cloud, while those well advanced—cloud leaders—invest 1.1%. And while beginners report a 19% decrease in overall business costs, that savings grows to 25% as they become cloud leaders.

19% | **25%**

Beginners report a 19% decrease in overall business costs.
This grows to 25% as they become cloud leaders.

Revenue follows a similar upward trajectory. One-quarter of cloud beginners enjoy a bounce in revenue, with that percentage leaping to 48% as these companies morph into cloud leaders. Other benefits include greater ability to scale their businesses, increased resilience and agility, improved market competitiveness, and better customer retention. In two years, as they advance in cloud usage, the percentage of mid-sized companies experiencing these benefits is expected to climb: 56% of companies expect to increase revenue; 53%, to reduce costs; 49%, scale their business; 47%, improve resilience and agility; and 46%, improve competitiveness.

56% | **53%**

56% of companies expect to increase revenue over the next two years; 53% expect to reduce costs.

Despite a slow start, mid-sized enterprises are accelerating cloud transformation to ensure they are not left behind. Most of the companies surveyed started their cloud migration within the last 2-4 years, but now 37% of their applications operate in the cloud. Organisations plan to take that percentage to 48% within two years. They have migrated about four major business functions, which should rise to five functions over the next two years.

37% | **48%**

Companies have 37% of their applications operating in the cloud. They plan to take that to 48% within two years.

But transitioning to the cloud can be complex; it often presents a maze of technology and business barriers that executives need to navigate. The most common challenges are ensuring data security and privacy, selecting the right providers and tools, and maintaining service during cloud migration. Other pain points include coping with technical debt, tracking and controlling costs, and lack of a proper organisational foundation.

Your action plan

To overcome these impediments and optimise cloud results, companies will want to consider six best practices uncovered by the research:

Step 1

Actively manage cloud costs using practices and tools such as FinOps to create a culture of accountability.

Step 2

Focus on business goals rather than the technology side of cloud transformation to ensure that decisions are made for the right reasons and produce the desired results.

Step 3

Take a structured approach to decisions about shifting and modernising applications that focuses on business imperatives and sets the correct priorities.

Step 4

Develop the culture and talent to succeed in the cloud, creating a cloud centre of excellence to provide training and advice; ensure proper cloud governance and standard processes; and foster wide adoption of cloud best practices.

Step 5

Select the right tools and partners, using a variety of cloud service models and turning to a range of cloud technology partners to bridge the skills gap as needed.

Step 6

Put cybersecurity at the centre of cloud migration plans, assessing and improving app cybersecurity before migration, and ensuring that the technology team has the needed cloud security expertise.

Introduction

The cloud is a game-changer for mid-sized enterprises. It is not just an IT platform; it is a launching pad for business transformation and supercharged performance. When fully adopted, the cloud enables companies to leverage their inherent competitive advantage—their ability to move nimbly in a fast-evolving marketplace.

However, cloud computing entails more than just relocating workloads from a physical data centre to a virtual one. It requires a management team that agrees on the value the cloud can bring to their business and a structured, outcome-driven approach to make it happen.

Despite myriad potential benefits, mid-sized enterprises have been slow to adopt the cloud. They have trailed their larger counterparts in cloud usage, since they have smaller budgets, fewer resources, and less digital talent. With smaller IT teams and more limited access to cloud expertise, these companies often face greater headwinds when transitioning from well-established on-prem IT systems to cloud platforms.

However, as the global pandemic made painfully clear, migrating to the cloud is essential for smaller companies in a digital-first world. These enterprises are now moving fast, shifting applications and business functions to the cloud, modernising their applications, and expanding their use of different cloud services.

About this study

To study the unique drivers and concerns of mid-sized enterprises as they adopt the cloud, in the fourth quarter of 2022 ThoughtLab, a global research firm commissioned by SoftwareOne, surveyed 300 senior technology executives at North American companies across industries. These companies have less than $1 billion in annual revenue and fewer than 7,000 employees. The research showed that nearly all the companies (95%) started their cloud journeys in the last five years, and most within the last 2-4 years.

To assess how cloud migration influences business strategy and performance results, ThoughtLab identified the percentage of applications and business activities that each of the surveyed companies operates in the cloud. Using those percentages as a guide, it plotted each of the companies along a cloud progress bell curve, and classified 25% as beginners, 58% as intermediates, and 17% as leaders.

This paper focuses on cloud leaders, since they provide evidence-based insights into the performance gains from cloud migration and the practices that will deliver the best results.

Early cloud adopters are already reaping the benefits. As mid-sized companies progress in their cloud journeys, their return on investment grows. Our survey of 300 organisations shows that their cloud investment costs fall, while their revenue and cost efficiencies rise. Cloud beginners invest 1.3% of their revenue in the cloud (an average of about $2 million) while cloud leaders spend 1.1% (an average of about $4.6 million). Beginners report a 19% decrease in overall business costs attributable to cloud usage vs. a hefty 25% for leaders. Similarly, 26% of beginners benefit from a rise in revenue, and the number jumps to 48% of leaders.

Financial gains of progressing from a cloud beginner to leader

Cloud investment declines from 1.3% to 1.1% of revenue

Overall business costs fall 25% for leaders

Revenue rises for 48% of leaders

"If you add the cost of the people who have to manage the data centre to the cost of the infrastructure, it is cheaper to run in the cloud than it is to run in a data centre," said Paiman Nodoushani, Chief Technology Officer at Examity, which offers an online testing and proctoring platform for universities and professional licensing organisations. "Plus, having the ability to spin up new services that public cloud providers come up with can solve many of the problems that you have at a very high level. Running in the cloud makes you much more agile and innovative."

Mid-sized enterprises recognise benefits beyond the top and bottom lines. Nearly half of the companies in our study report greater ability to scale their businesses, increased resilience and agility, and improved market competitiveness and customer retention from their cloud investments. Indeed, the cloud is a powerful tool for mid-market companies looking to reposition themselves in a rapidly digitising marketplace where new cloud-based competitors can disrupt their businesses.

Yet achieving these returns and benefits requires overcoming significant challenges along the way. These include technical hurdles, such as mitigating security risks, reducing technical debt, and finding the right providers; as well as business pitfalls, such as managing rising cloud costs, minding the talent gap, and building organisational support. For cloud leaders in our study, the solution often involves a structured, business approach to cloud adoption. This approach uses ROI as its compass and harnesses the latest cloud, cybersecurity, and cloud financial management (FinOps) tools and practices.

Based on the survey results, this report offers organisations an evidence-based roadmap for using the cloud to boost business performance. It examines their strategies for harnessing the cloud, their challenges throughout their journeys, and the business improvements they realise along the way.

Chapter 1:
The mid-market gains momentum in a cloud world

Our research found that mid-sized businesses started shifting to the cloud, on average, only a little over three years ago (37 months). In addition to limited budgets, the delay was due to organisational resistance and lack of cloud skills, according to Craig Thomson, Senior Vice President, Cloud and Applications Services at SoftwareOne. "These enterprises might have a dozen technologists who have built their careers managing an on-premises platform," he said. "They fear that moving to the cloud might spell the end of those careers, so they stall migration to give themselves time to learn the cloud.

On average, mid-sized companies have shifted:

4 **business functions to the cloud**

and will take that to

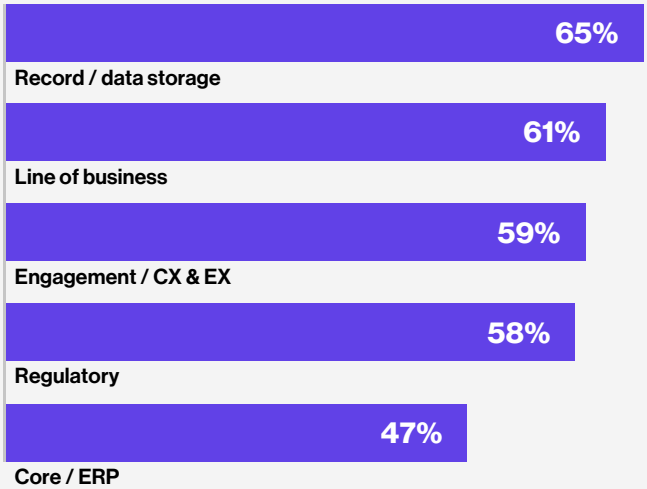
5 **functions in two years.**

Despite the roadblocks, mid-sized companies have shifted about four business functions to the cloud and plan to take that number to five functions in two years. They have made the most progress in moving customer management and risk management functions: more than half now conduct these activities predominately in the cloud. They have also made major strides in IT management and operations and customer data and analysis; just under half of surveyed companies now conduct these activities primarily in the cloud.

However, most mid-market enterprises leave migration of some functions for later. Only one in five has shifted procurement and supply chain, sales, human resources, and strategic planning to the cloud. They plan to speed up relocating these functions to the cloud over the next two years.

To support these activities in the cloud, mid-market companies are rushing to transfer relevant applications. On average, they now have 37% of their applications operating in the cloud, and in two years, the percentage will rise to 48%. About 59% of companies have made moderate to substantial progress in moving apps for customer and employee engagement. For more complex processes, such as enterprise resource planning, which integrates multiple functions, the percentage of companies that have made moderate to substantial progress is lower (47%).

Percentage making moderate/substantial progress in moving application types to cloud



Revere Copper illustrates the urgency for smaller companies to accelerate cloud adoption. The copper manufacturer, founded by Paul Revere in 1801, started migrating to the cloud about a year ago, but has so far shifted only about 10% of its apps. “It’s been a slow transition, so most of what we do is not on the cloud at this point,” said Chuck Scharnagle, the company’s CIO. However, the company has ambitious plans to move 50%-75% of its applications within the near future. “We’re going to do a lot in the next two years, which we need to do because of our aging infrastructure and the lack of support available on our current systems,” said Scharnagle.

His plans include buying new cloud-based customer relationship management and enterprise resource planning systems. “The CRM will bring sales and marketing into the cloud, while the ERP will tie everything together, including manufacturing and purchasing, all of which today is legacy and on site,” he said.

Chapter 2:
The impact of cloud on financial performance

Mid-sized enterprises boost returns on investment when transitioning to the cloud. By replacing legacy technology with modern IT platforms, they improve both top- and bottom-line performance. Our research shows that as companies progress in cloud adoption, ROI increases due to a virtuous cycle of declining costs and increasing revenue. That is why nearly all leaders (94%) say that the financial and business outcomes they achieved from their cloud initiatives met or exceeded their expectations vs. 71% of beginners.

94%

of leaders say the financial and business outcomes achieved from their cloud initiatives met or their expectations

VS

71%

of beginners.

How cloud migration drives ROI

Investment drops

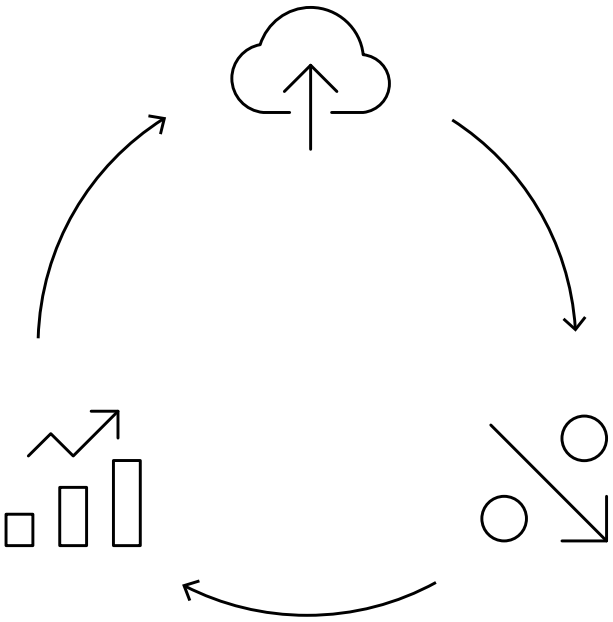
As firms progress in cloud adoption, spending decreases.
Cloud beginners spend 1.3% of revenue, while leaders spend 1.1% of revenue.

Overall costs decline

As companies migrate more resources to the cloud, their overall costs fall.
Among companies experiencing cost savings, beginners reported a 19% fall, compared with over 25% for leaders.

Revenue rises

While cloud spending decreases, company revenue grows.
26% of beginners are seeing increased revenue now, compared to 48% of leaders.

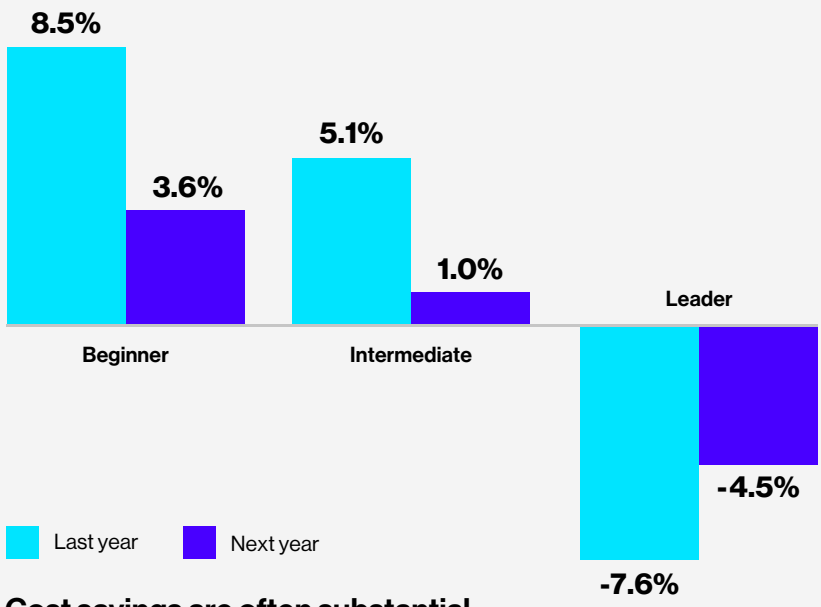


Cloud spending goes down with maturity

When starting out, beginners increase their cloud spending by 8.5%. As they move to mid-implementation, the rise in cloud spending tapers off to 5.1%. Once they become leaders—and move from building their cloud infrastructures to maintaining them—their level of spending decreases by 4.5%. Survey respondents expect that same cost trajectory to repeat itself over the next year. However, spending increases will moderate for beginners and intermediates as they progress in their cloud journeys. Spending will decrease even further for leaders as they complete their cloud build-out.

The benefits from this cost trajectory can be seen in the percentage of cloud costs to revenue. This fiscal year, for example, total cloud spending (including the cost of technology, people, and support) averaged $3.8 million for all respondents, or 1.33% of revenue. Leaders spent less as a percentage of revenue: $4.7 million, or 1.1% of revenue.

Cloud spending change by stage



Cost savings are often substantial

While the progressive fall in cloud spending is a plus for mid-sized enterprises, the big prize is the considerable costs they save from cloud migration. Almost half of the surveyed companies report lower overall company costs due to shifting to the cloud, and in two years that percentage will grow to more than half.

Better still, the more progress companies make in cloud migration, the more likely they will reap cost efficiencies. Four in 10 beginners report reduced costs, compared to half of intermediates and more than half of leaders. In two years, three-quarters of leaders expect to see cost savings.

4 in 10

beginners saw reduced costs,

vs

50%

of intermediates and more than half of leaders.

Not only are leaders more likely to see cost savings, but these savings climb with cloud progress. Among companies reporting cost savings, beginners said they saw a 19% fall, compared with 22% for intermediates and over 25% for leaders.

Beginners saw a

19%

fall in costs,

vs

22%

for intermediates and over

25%

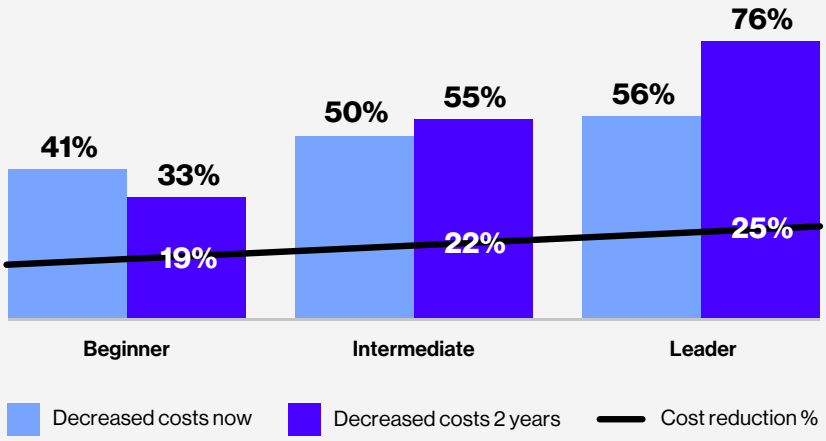
for leaders.

"You are saving on equipment costs, so those capital expenditures go away," explained Jason Sabshon, IT Director at Global Industrial, a retail wholesaler. "You are saving on power, cooling, and people in the data centre, and the alarm system for the data centre. All of that has a significant dollar amount associated with it."

However, according to SoftwareOne's Thomson, to get these types of returns on investment, companies need to be sure they are moving each workload or business function to the cloud for the right reasons.

> **"The key to maximising ROI is understanding the business case workload by workload. That will dictate how companies handle each workload when migrating to the cloud."**
>
> *Craig Thomson*
> *Senior Vice President, Cloud and Applications Services, SoftwareOne*

Cost savings benefit by stage



Innovative Process Solutions slashes costs through the cloud

Innovative Process Solutions, a biotech software and consulting company, can attest to the importance of cloud cost savings. The company now has 100% of its operations in the cloud after a migration that began in 2017. "We were accumulating too much hardware and we needed a lot more people to manage that, so we decided to go the cloud," said Dileepa Wijayanake, the company's CTO. To save time and get rid of its hardware more quickly, the company opted for a "lift-and-shift" approach, where applications are moved to the cloud without modification.

After a transition period during which its on-premises systems ran in parallel with its cloud operation, Innovative was able to shut down its own hardware. The result has been an infrastructure cost reduction of about 60%. "When we maintained hardware, there were people costs, there were infrastructure costs, maintenance and electricity costs—all of those now are dramatically reduced," Wijayanake said. He cited other benefits including easier deployment and scaling, less downtime, and a 70% reduction in latency.

Unlocking revenue growth

Migrating to the cloud is not just about cutting costs. When done correctly, it drives business transformation and growth. Since most mid-sized enterprises are still relatively early in their cloud journey, the majority are not yet seeing this benefit: currently, 38% of companies surveyed report increased revenue from cloud migration.

However, that percentage is expected to grow to more than half over the next two years. The potential for revenue growth rises as companies advance in cloud adoption: only about a quarter of beginners report revenue increases currently, while almost half of leaders do.

25%

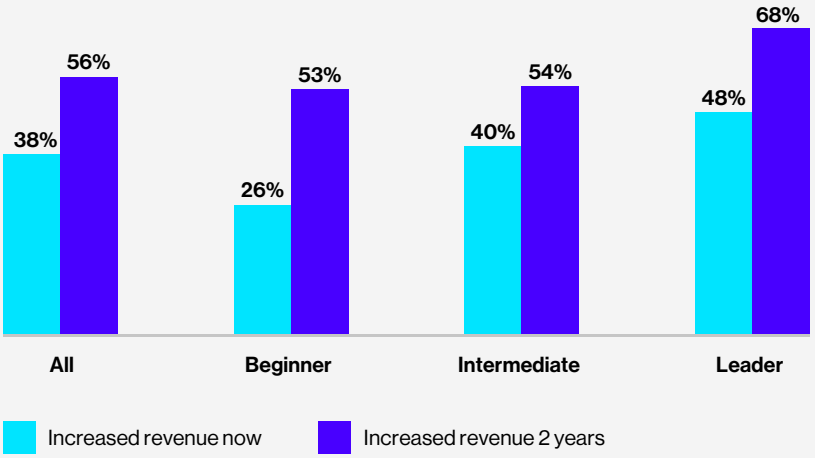
of beginners report revenue increases

VS

50%

of leaders.

Increased revenue benefit by stage



Companies that cite revenue growth are achieving it in various ways. The most important are gains in productivity and in speeding time to market. Many are also penetrating new global markets and developing new cloud-based business models and products or services. Leaders are ahead in driving top-line growth in all these ways.

Means of revenue growth by stage

	All	Beginner	Intermediate	Leader
Greater productivity	48%	40%	46%	58%
Speed up innovation/time to market	47%	45%	43%	58%
Reaching new global markets	43%	30%	43%	54%
Developing new business models	41%	25%	41%	54%
Creating new products and services	41%	40%	41%	42%

Toysmith, a supplier of small toys and gifts to retailers, is an excellent example of how smaller companies can grow sales from cloud migration. In the past, given the limitations of Toysmith's systems, it could only sell to certain types of retailers. Transitioning all its systems to software as a service (SaaS) in the cloud—including enterprise resource planning and e-commerce platforms—has changed that, enabling it to expand its customer base to other verticals and boost revenue.

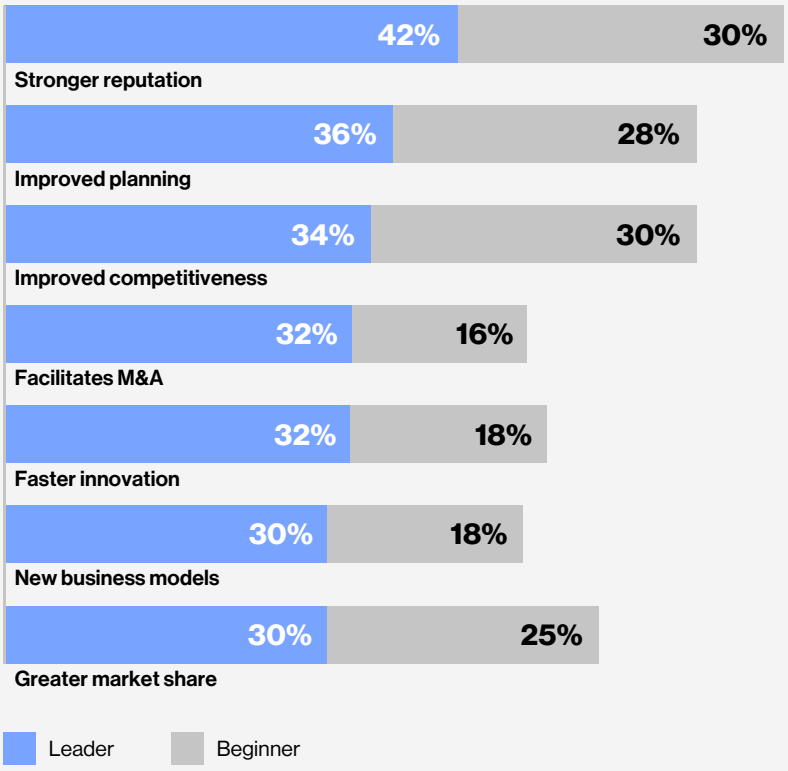
"We expect to generate more revenue because we've built a system that is almost impervious to scale," said William 'Deal' Daly, Vice President of Technology at Toysmith. He explained that the new cloud-based ERP system could handle any volume of orders, and the company is limited only by warehouse capacity. "There's no revenue component in our cloud costs, whether we put $10 million or $100 million in orders through," said Daly.

Reaping other business benefits

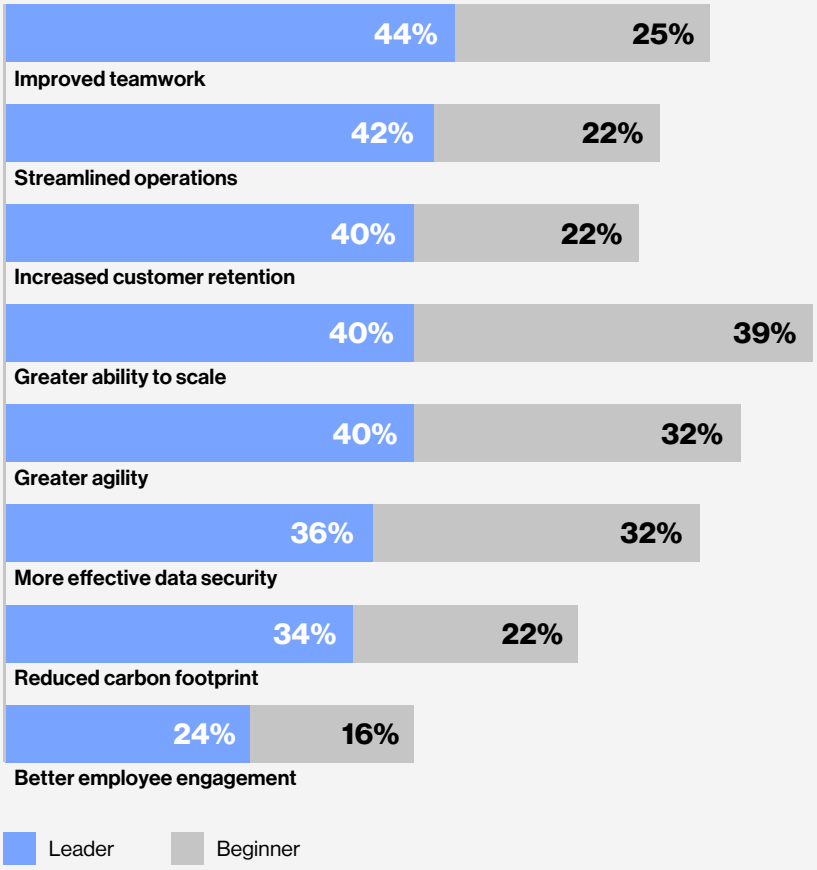
Companies unlock many operational and strategic benefits as they mature into cloud leaders. These benefits range from improved teamwork, reputation, and resilience to streamlined operations and greater scalability and customer satisfaction.

"The cloud allows you to scale at a much more manageable rate," said the CIO of a financial information company. "It's very dynamic. It shuts off when you don't need 90% of it, and you're not paying for it. And then when the peak comes, it just spins up automatically."

Strategic benefits, leaders vs. beginners



Operational benefits, leaders vs. beginners



Brendan McPartlan, Vice President of Vendor Relations with The Economist Group, noted that migrating to a cloud environment across multiple availability zones improves a company's resilience. "Because we have things running in more than one place, if something fails, there is an automatic failover." McPartlan also sees the ability to change rapidly and bring products to market faster as critical benefits.

Philip Dana, Senior Director of IT at AC Foods, said that "leveraging the services of cloud providers gave us many of the things we were seeking, including speed, business continuity, and backup for disaster recovery." He added that the cloud allowed the company to shift from a CapEx to an OpEx model, reducing the time and effort that his team spent on managing and maintaining hardware on-premises.

> **"Leveraging the services of cloud providers gave us many of the things we were seeking, including speed, business continuity, and backup for disaster recovery."**
>
> *Philip Dana*
> *Senior Director of IT at AC Foods*

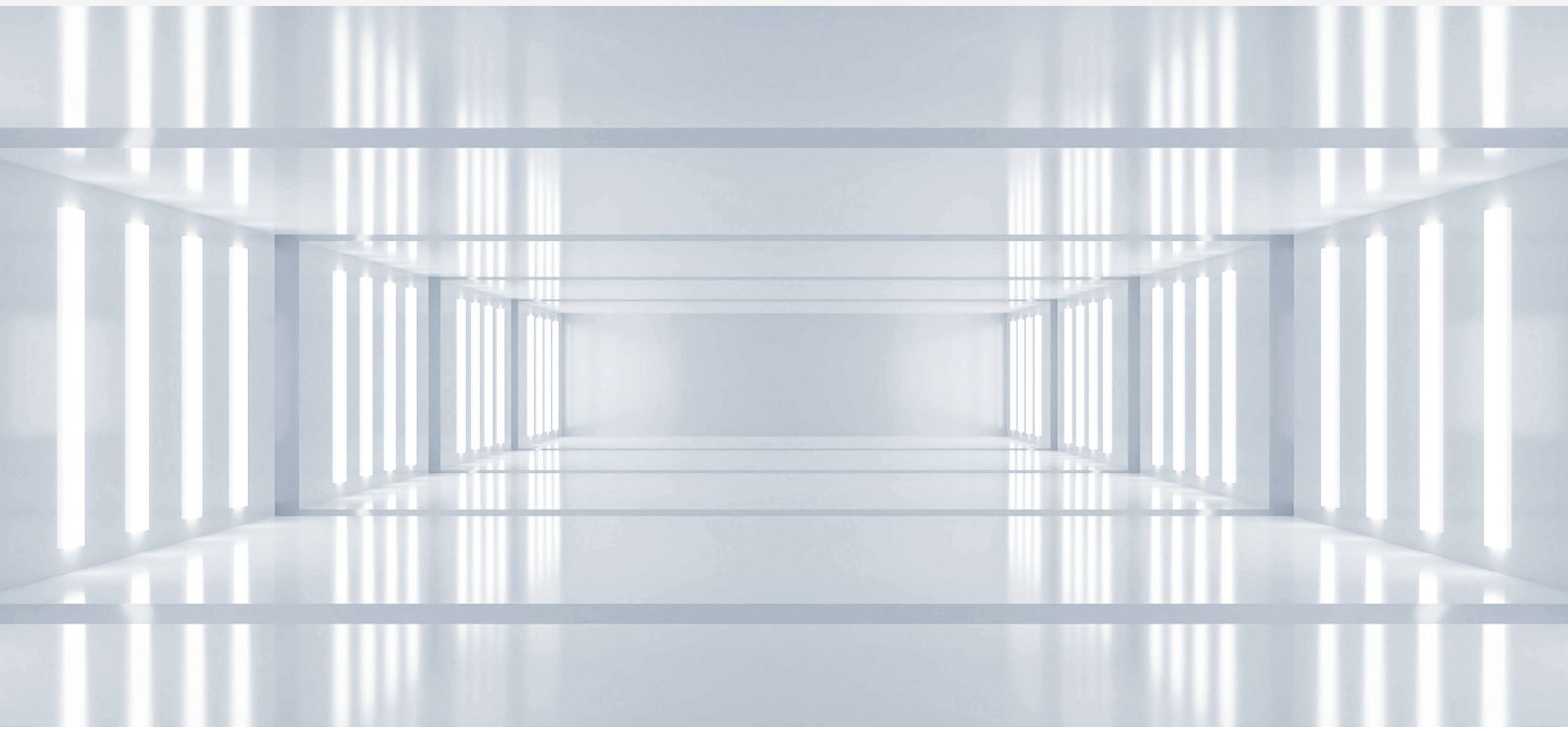
In two years, as businesses advance in cloud usage, there will be big jumps in the percentages expecting to report operational and strategic benefits. These include improved competitiveness (+16 percentage points), higher shareholder value (+16 points), increased customer satisfaction (+14 points), more effective cybersecurity and risk management (+14 points), and higher profitability (+13 points).

Focusing on the strategic benefits of the cloud is critical for companies that want to protect themselves from market disruption caused by new entrants. "Every industry has or will be disrupted by a new entrant," said SoftwareOne's Thomson. "The cloud is often at the heart of these disruption events. Uber and Netflix are two high-profile examples of market disruptions that caught incumbents off-guard. Rather than just focusing on doing things better in the cloud, mid-market companies should explore how they can use the cloud to transform their businesses to fend off market disruption."

How the cloud helped Examity quadruple its testing business

Examity, a provider of online testing and proctoring services, shows how cloud migration can support both scaling and innovation, and help a company become a successful market disruptor. The company's transition from on-premises to cloud infrastructure allowed it to not only survive the pandemic, but to thrive, quadrupling its business as education went remote. "As a result of COVID, online testing went from a niche market to mainstream in an instant," said Examity's Chief Technology Officer, Paiman Nodoushani. "Our cloud infrastructure made it possible for our staff to proctor online exams using our tools without being in the office."

The move to the cloud also fostered innovation, Nodoushani explained. The company has used cloud-based tools to add AI capabilities to its product to monitor test takers for signs of cheating. The new capabilities check whether other people are in the room, whether a test taker is looking at another monitor or at notes, and whether someone else is speaking in the background, for example. "The basic building blocks have been built by the major cloud providers, so you don't have to go and build those algorithms," he said.



Chapter 3:
Cloud migration challenges

While the financial, operational, and strategic benefits from cloud migration are compelling, companies must jump through technical and business hoops to reap those rewards. Here are six major hurdles that mid-sized enterprises should be ready to overcome.

1. Ensuring data security and privacy

On the technology side, the biggest challenge is ensuring data security and privacy, which almost two-thirds of respondents cited (62%), and even more beginners (64%). Companies are right to see cybersecurity as their biggest challenge—half of the respondents rate their cloud infrastructure security as moderate, low, or even very low, and over a third rate their app security as moderate, low, or very low. This can be very dangerous in this era of heightened cyberattacks.

62% **of companies say the biggest challenge is ensuring data security and privacy.**

"The problems are typically grounded in not having adequate talent for running security in the cloud," said SoftwareOne's Thomson. "Teams that are used to running cybersecurity for on-premises infrastructure may think their skills transfer because security in the cloud is similar, but it's not—especially for applications."

> **"Teams that are used to running cybersecurity for on-premises infrastructure may think their skills transfer because security in the cloud is similar, but it's not—especially for applications."**
>
> *Craig Thomson*
> *Senior Vice President, Cloud and Applications Services, SoftwareOne*

Cloud leaders are doing better. Six out of 10 say they maintain high or very high cloud security for their cloud infrastructure vs. just under a third of beginners. And seven out of 10 leaders believe their cloud application security is high or very high, while this is true for about six out of 10 beginners.

Infrastructure security by stage

	All	Beginner	Intermediate	Leader
High or very high	50%	32%	55%	60%
Moderate, low, or very low	50%	68%	45%	40%

Application security by stage

	All	Beginner	Intermediate	Leader
High or very high	64%	61%	63%	70%
Moderate, low, or very low	36%	39%	37%	30%

2. Selecting the right providers and tools

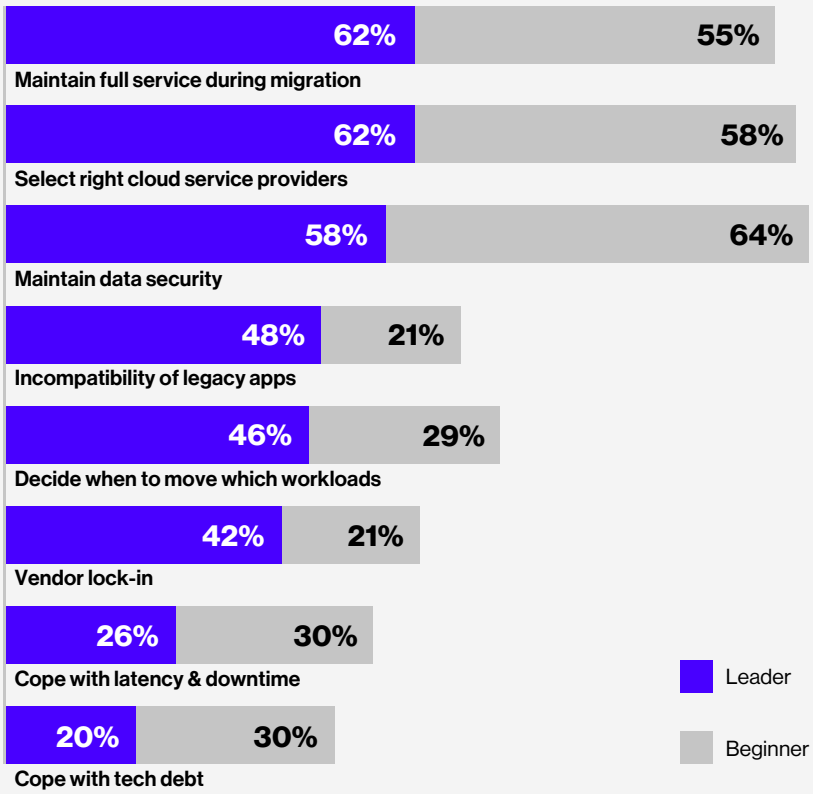
Another major technology challenge for businesses is simply selecting providers (58%). According to Dan Ortman, head of the global FinOps practice for SoftwareOne, "One of the most difficult things in the FinOps world today is tool decisions." He noted that there are hundreds of tools that claim to optimise costs. And that is just for one type of cloud service.

3. Maintaining service during cloud migration

Over half (54%) of companies find maintaining service during cloud migration difficult. Revere Copper's Scharnagle offered a metaphor to illuminate the problem: "We are a spiderweb where everything is connected," he said. "We're really struggling with decisions like do we replace the brain first, or do we replace the heart first, or do we do one big surgery and replace all of it at once? We need to decide how to keep the brain working and the heart beating for the time being while we figure out our next steps in the cloud."

> **"We need to decide how to keep the brain working and the heart beating for the time being while we're figuring out our next steps in the cloud."**
>
> *Chuck Scharnagle*
> *CIO, Revere Copper*

Technology challenges by stage



4. Coping with technical debt

Beginners struggle more with latency issues and, particularly, technical debt, a pain point for almost a third of them. As part of the migration and modernisation process, most respondents (64%) intend to address technical debt, particularly beginners (70%), since the latter have more tech debt and have more difficulties retiring it.

However, so far, most companies haven't done enough to reduce technical debt, which grew over the past two years for 37% of respondent companies and stayed the same for 34%. Only 28% managed to reduce technical debt over the past two years—although more leaders did so (34%). Companies expect to do a better job over the next two years: 45% plan to reduce their tech debt.

The Economist Group's McPartlan shed light on the challenge. "Tech debt evolves quickly: as you move from one platform to another you inevitably run into the 80/20 rule where you can get 80% done fairly quickly, and the other 20% keeps you with that technical debt until you can get off of your old systems," he said. "But in the meantime, you're supporting that entire other pillar because you can't just turn off the whole thing. You have to keep it going until you get rid of everything."

5. Tracking and controlling costs

Half of all respondents cite overall cloud costs and visibility into those costs as their biggest business challenges, with visibility a particular issue for beginners. "Sometimes it's hard to forecast what your costs are going to be if you add more services," said Dana of AC Foods. "If you're not watching, those costs can get out of control pretty rapidly."

50% **of businesses say cloud costs and visibility into those costs are their biggest business challenges.**

Working with multiple providers—a challenge for 43% of respondents—can also contribute to difficulties with cloud cost management. "Each vendor's a little bit different," said Dana. "All these different components sometimes make it a bit hard to manage across multiple clouds." Other hassles around cosvt management include uncertain ROI, a challenge for 34%, and shifting from a CapEx to an OpEx model, cited by 19%.

6. Failure to lay the organisational foundation

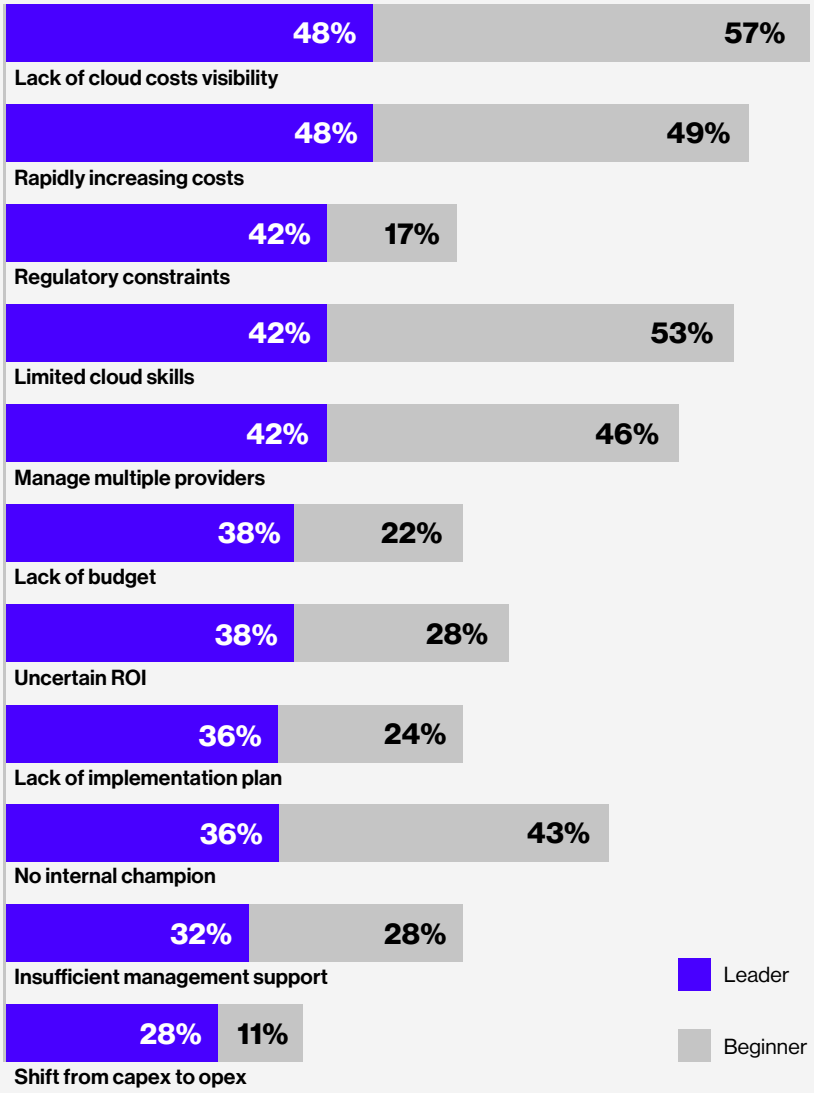
Respondents also report other, largely organisational and planning challenges—including lack of skills, unclear responsibilities, and lack of a proper implementation plan. "You have to explain your cloud strategy to the business and get their buy-in before you do anything," said Global Industrial's Sabshon. If you don't do it in collaboration with them, then you're going to have a lot of headwinds."

> **"You have to explain your cloud strategy to the business and get their buy-in before you do anything. If you don't do it in collaboration with them, then you're going to have a lot of headwinds."**
>
> *Jason Sabshon*
> *IT Director at Global Industrial*

For Sabshon, organisational resistance is the hardest part of migration. "We have a lot of employees at 25-plus years," says Sabshon. "I sit with those employees who have done order processing the same way over those years. They don't want to learn a new way. They have five years left for retirement."

Business challenges also differ by stage. Beginners wrestle more not only with cloud costs, but also lack of skills and internal support. For leaders, ROI and regulatory constraints loom larger.

Business challenges by stage



Chapter 4:
Learning from cloud leaders

1. Actively manage cloud costs

Cloud costs can be opaque and balloon suddenly unless companies impose strong cost controls and use the latest cost management techniques. This is best done by developing a culture of cloud financial discipline—known as FinOps—a missing ingredient in approaches most mid-market companies take today.

> **Cloud costs and visibility into costs are the top two business challenges, cited by about half of companies. But only 15% of all companies surveyed have a FinOps practice today.**

A FinOps culture, with strong cooperation among business, IT, and engineering teams, helps companies understand what they spend on the cloud, for which services, and how the charges vary across multiple providers. It gives companies the tools to be aware of how each cloud decision affects the cost structure and the resulting spend. This helps to create visibility into costs as well as to improve understanding of the OpEx model, management of multiple providers, and overall cost control, resulting in a clearer ROI.

Cloud leaders are far more likely than beginners to use FinOps: 36% vs. 3% of beginners and 14% of intermediates. In two years, 46% of leaders plan to use FinOps vs. only 21% of others.

> **"Building the cultural side of FinOps is a real differentiator. Everyone who incurs cloud costs should make decisions as though they are business owners and base their spending on planned business cases."**
>
> *Dan Ortman*
> *Head of Global FinOps, SoftwareOne*

One executive taking cloud cost management seriously is Examity's Nodoushani. "We have been able to optimise our spend in the cloud by moving to a combination of reserved instances and spot instances, which are a tenth of the cost," he said. "And by shutting down infrastructure that's not used all the time on an ongoing basis, we have easily been able to find more than 25% savings over the last two quarters on our spend."

36%

of cloud leaders use FinOps

VS

3%

of beginners.

Harnessing the power of FinOps

Dan Ortman, head of the global FinOps practice for SoftwareOne, likes to tell the story of a software engineer and his computer mouse. "A client once told me that it's easier for him to spend $10,000 in the cloud than it is to get reimbursement for replacing a broken $10 mouse," said Ortman. "The mouse involves receipts, expense reports, and multiple approvals, while no one blinks an eye at the cloud. Without the accountability you get with FinOps, you end up in situations where you spend more than you expected."

He cites a well-known incident at a large firm where an employee mistakenly deployed a cloud resource costing the company $80,000 daily. "They caught it in a week, after wasting about a half a million dollars," Ortman said. "But a week is a lot faster than a lot of organisations would do, especially smaller businesses that are only reviewing their cloud spending once a month when the invoice comes in."

Ortman explained that companies need to develop a culture of financial accountability for the cloud regardless of how small they are. This culture should look at cloud priorities and expenditures in accordance with the needs of the business, and in terms of the company's own units of economic measurement that track back to overall corporate performance.

This will help them make the needed decisions about what Ortman calls the "iron triangle" of cost, performance, and speed in the cloud. Speeding up operations or improving performance will also increase cloud costs, so executives need to decide where their priorities lie for each application or function. To set those priorities—and ensure that everyone understands and applies them—companies need to bring together teams composed of senior business and financial executives, leaders from IT, procurement, IT asset management, and engineering, as well as representatives of other departments that consume cloud resources.

Ortman recommends that all businesses follow the seven "Cs" of FinOps.

The seven “Cs” of FinOps:

Culture of accountability

According to Ortman: “Building the cultural side of FinOps is a real differentiator. Everyone who incurs cloud costs should make decisions as though they are business owners and base their spending on planned business cases.”

Communication

FinOps requires a well-planned, top-down change strategy with communication from executive sponsors and champions. Ongoing communication is critical during the three FinOps stages of inform, optimise, and operate.

Centralised, cross-functional team

To work best, various stakeholders should work together to make decisions about cloud spending and cost allocation. It ensures that these decisions are consistent with business needs and are followed across the enterprise.

Continuous improvement

As a company’s use of the cloud evolves, so must its FinOps strategies. FinOps is an ongoing practice that optimises cloud usage and costs over time. It’s a series of cycles and iterations, not one single effort.

Collaboration

To optimise cloud usage and spending, it’s important that business units and teams with different KPIs and incentives work together. They should have a unified view on their cloud goals and use the same cost-optimisation tools.

Choosing the right technologies

The tools that firms need to track their cloud spending will vary tremendously. They may want to use core FinOps platforms that report consistent cloud spending data across the enterprise as well as specialised tools that delve deeply into key areas.

Concentration on ROI

Ultimately, firms need to focus on the returns they get from their cloud investments and the tradeoffs between speed, cost, and performance. “An ROI framework drawing on the iron triangle is the heart and soul of FinOps,” said Ortman.

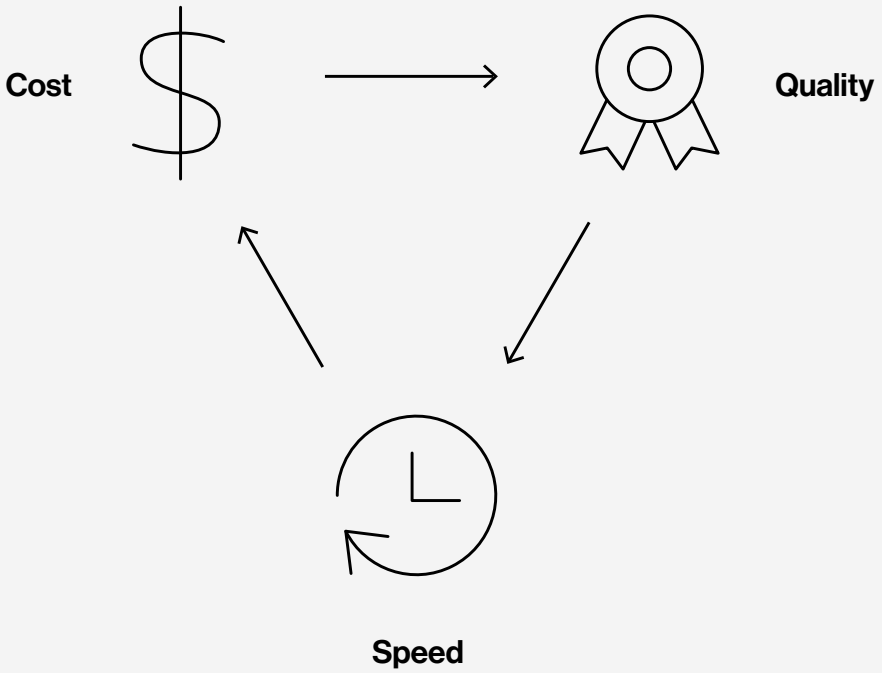
2. Focus on business goals

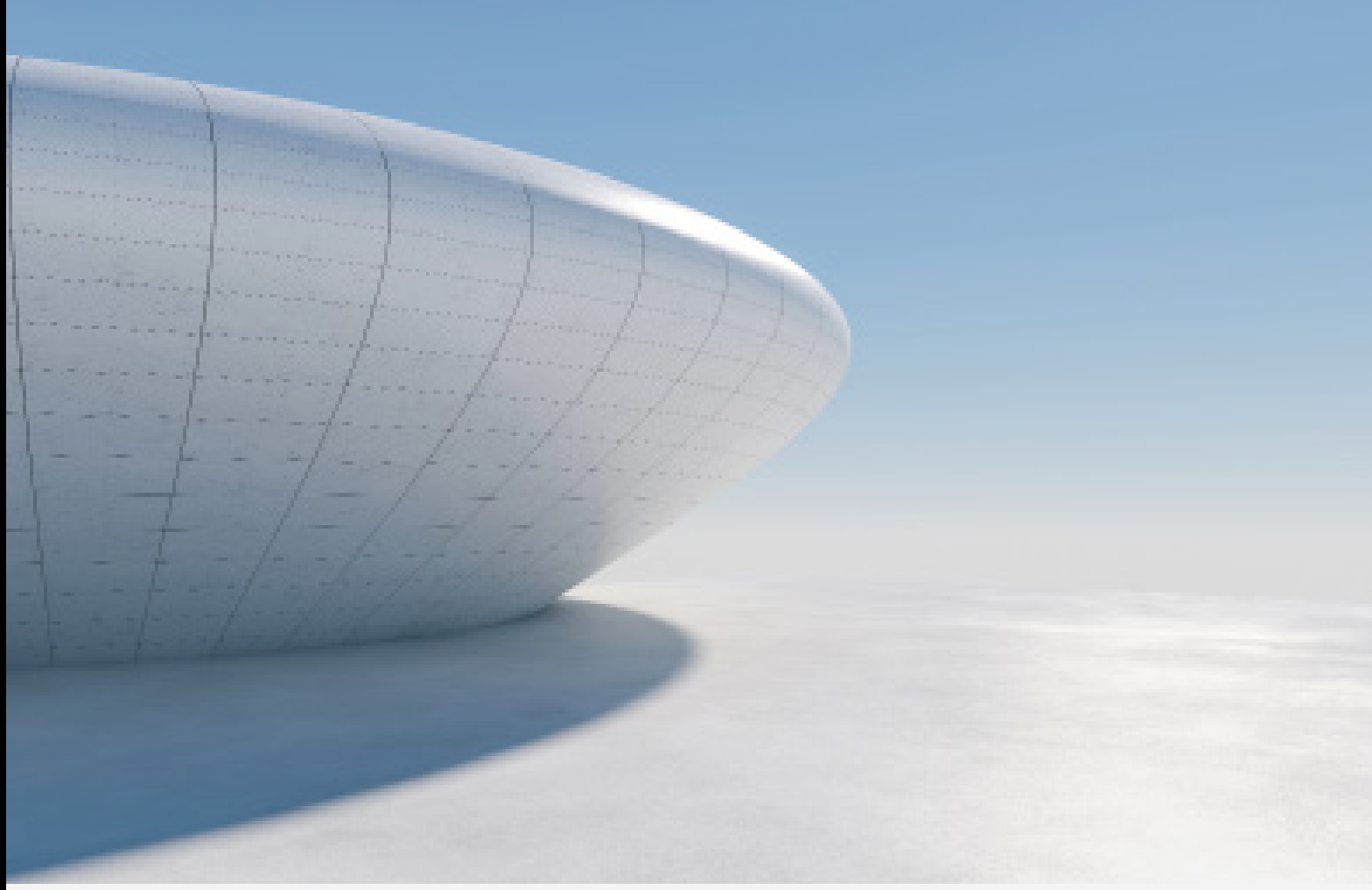
Companies should avoid focusing only on the technology side of cloud migration, which can lead to poor decisions about why, what, when, and how they should move to the cloud. Instead, they should make their business goals their North Star and pay greater attention to the business case for moving to the cloud, including the ROI they plan to achieve and the full financial, operational, and strategic benefits they will reap.

According to SoftwareOne's Thomson, the key to effective cloud transformation is for a company to understand its underlying business reasons for moving to the cloud. "Some companies want to embrace the cloud to accelerate the speed to market, or to protect against disruption, or to disrupt the market themselves. But often, companies don't realise the true business drivers for why they need to move to the cloud," he said.

Cloud spend and competing KPIs

Harnessing the iron triangle of cost, speed, and quality can help companies to set KPIs for different teams and ensure that they are in alignment.





Thomson believes the question executives should ask is not "Why are we moving to the cloud?" but "Why do we need to transform?" and "What is the end-state of the business that we are striving to achieve?"

Cloud leaders are more apt to take a business-led approach than beginners. Close to two-thirds create a business case for moving and modernising apps, while about half establish ROI targets, and monitor the results. However, more than a third of beginners do none of these things.

Steps typically taken for moving apps to the cloud, by stage

	Beginner	Leader
Create a business case for moving apps	34%	62%
Establish ROI targets and monitor results	33%	48%
None of the above	37%	0%

AC Foods: Following a business-led cloud roadmap

AC Foods, an agribusiness company based in California, offers an example of a business-led approach to cloud migration. According to Philip Dana, Senior Director of IT at the company, AC Foods started with an evaluation phase to create a roadmap. "We needed to understand what we had at all our locations, what our support capabilities were, and our primary goals and our limitations," he said. "By doing a discovery and gap analysis, we were able to identify areas of opportunity."

Next, Dana's team laid out a business case for top management and the board, showing how the cloud could particularly benefit business continuity and reliability for a company with multiple rural locations. "Our data centres were in the middle of farmland, where power comes in on overhead lines—we had continuous brownouts when someone hit a pole," said Dana.

The business case for moving to the cloud included not only improvement in business continuity, but also other goals and benefits. "We had one main data centre, but then we had other data centres spread out in many places. But because of moving to the cloud, we can consolidate all that," he said.

AC Foods also aimed to use cloud migration to automate manual processes, reduce costs, and free up staff members from running data centres and maintaining hardware and software. "We were able to shift focus and use that time better—my staff can focus on more value-added activities that can help the business itself," said Dana.

3. Take a structured approach

Cloud leaders take a more structured approach to cloud migration that focuses on business imperatives when developing a strategy for moving their IT infrastructure, data, and applications to the cloud.

Some of these decisions are about sequencing applications and functions migration to ensure a smooth transition for the company. Leaders will carefully consider what can be more easily moved to gain cloud benefits quickly without affecting vital company operations, and what needs more preparation.

Innovative Process Solutions' Wijayanayake, for example, said the company set priorities for moving apps and functions depending on usage. It grouped its apps and systems into low, medium, and high priority, testing and moving the high-priority ones—such as databases—first.

Steps typically taken for moving apps to the cloud, by stage

	Beginner	Leader
Use a structured process for decision-making	43%	56%
Change software licensing models and contracts	33%	60%
Test apps thoroughly before moving them to the cloud	20%	50%

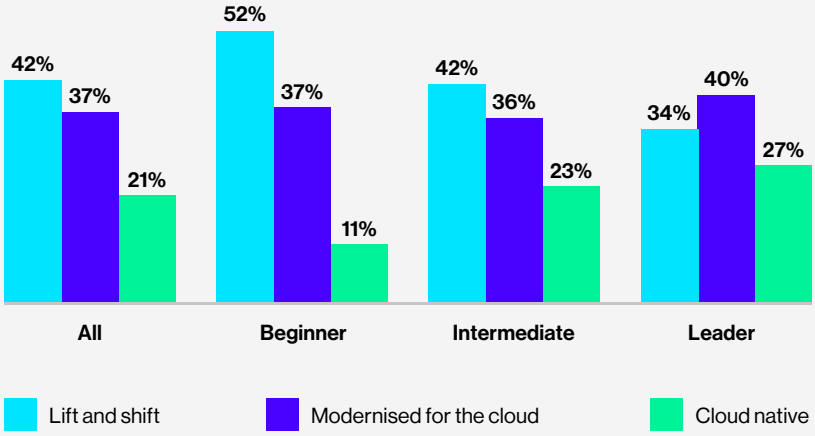
Using a financial model for sequencing cloud migration is critical, noted SoftwareOne's Thomson. Companies should first move workloads to the cloud that will produce immediate cost savings, which can then be reinvested to handle more complex applications. "We call that a migration flywheel," he said. This flywheel approach helps to maintain the buy-in from the management team and creates a virtuous cycle of performance gains.

56% | 43%

Leaders (56%) are more apt than beginners (43%) to use a structured process to define whether to lift and shift or modernize apps.

Other vital decisions centre around whether to "lift and shift" existing apps as they are, to modernise them, or to start fresh with cloud-native applications. Many companies just opt to lift and shift everything, without a great deal of consideration. On average, surveyed companies report that 42% of their apps currently in the cloud are lift and shift, with 37% modernised and only 21% cloud native.

App status by stage



Examity took what may be a typical approach for mid-size enterprises by opting to lift and shift first, then modernise, according to Nodoushani. He said that updating first would have taken too much time. However, since its cloud transition, 70% of Examity's apps are now either modernised or cloud-native, with 30% still in their original form.

“You modernise what you can,” said Nodoushani. “Every organisation has some sort of software monolith that they won’t be able to break down completely. You try to identify problematic areas in your monolith and rewrite them, if possible, in a cloud-native environment. But part of that monolith will always stay a monolith and will run as is, even if you are running in a cloud data centre.”

Leaders are more likely to use a structured process to define whether to lift and shift or modernise apps (56% vs. 43% of beginners). As a result, they generally have more modernised apps (40%), more cloud-native apps (27%), and less lift and shift than beginners.

Similarly, more leaders than beginners replatform (21% vs. 18% of beginners), refactor (10% vs. 4%) and decommission their apps (5% vs. 3%). And as part of their structured process, leaders more often test apps thoroughly before moving them to the cloud as well as change software licensing models and contracts for apps.

Leaders are also more likely to use tools such as Infrastructure as code (50% vs. 38% of beginners) to boost productivity and reduce errors when modernising apps and creating new ones. IaC allows developers using the cloud to manage and provision infrastructure through machine-readable configuration files with infrastructure specifications, instead of doing it through manual processes when creating applications.

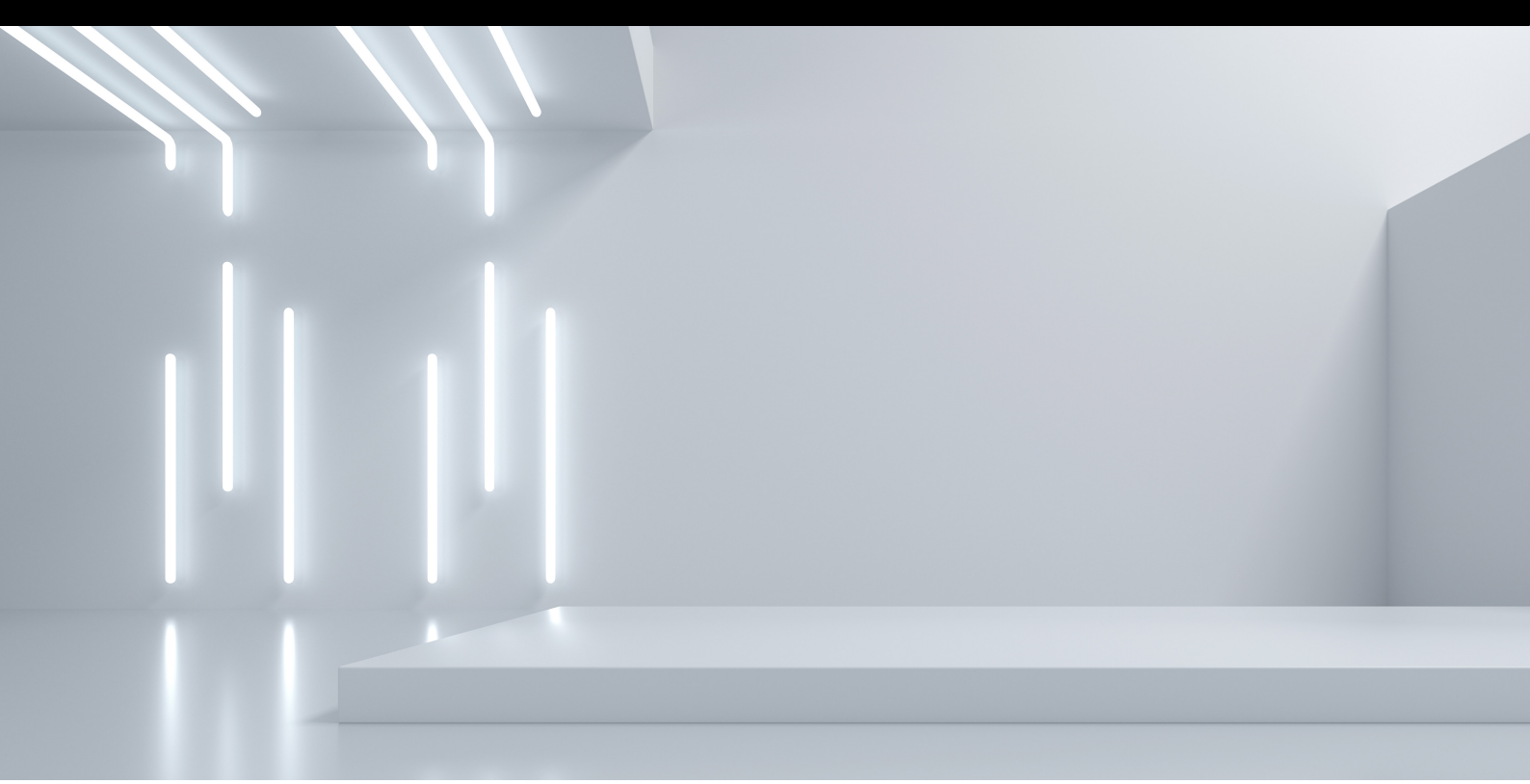
50%

of cloud leaders use infrastructure as code

VS

38%

of beginners.



Economist Group: Systematising cloud migration

The Economist Group's cloud migration offers an example of carefully planned sequencing and testing of infrastructure and apps. Brendan McPartlan, the company's Vice President of Vendor Relations, explained how the team dismantled its on-premises system layer by layer, transferring it to cloud-based Infrastructure as a Service (IaaS). "We started with the infrastructure layer, testing it in the cloud, then the operating system, making sure it was compatible with the cloud platform," said McPartlan. "The next thing was to put the applications on that, making sure of compatibility."

That entailed a move into a continuous integration and deployment development environment. The testing for apps was extensive, including user tests, regression tests, load tests, stress tests, and functional tests, McPartlan explained. Once the whole structure was set up and the testing was completed, the company's technology and development group was able to move into a production environment. The move and deployment entailed use of infrastructure as code. "What that translates to is that you can wipe out anything and recreate it through the execution of an application," he said.

4. Develop the culture and talent to drive success

Leaders know that successful cloud transformation requires a strong cloud culture and the skills to drive the transition. Lack of cloud skills and organisational support are significant business challenges for most companies in their cloud migration.

Dana of AC Foods said that the key barrier to cloud migration is "around user and change management more than anything else—getting people to accept and adopt the cloud as you move forward." He added that it is vital for cloud adoption to be as seamless as possible for end users. "As you make changes, people should not see any impact from their side, or if they do, it should be for the better."

Toysmith's Deal Daly agreed. "The most complicated thing is the culture," he said. "People that are used to doing jobs a certain way think that is the only way to do them. Then, when you tell them they don't need to do them that way anymore, that's very unsettling."

Business challenges by stage

	Beginner	Leader
Limited access to cloud skills	53%	42%
No internal champion	43%	36%
Insufficient management support	28%	32%

To help drive their organisations forward, nearly three-quarters of leaders create a cloud centre of excellence (72% vs. 25% of beginners). These centres generally include a team of cross-functional executives responsible for cloud implementation. They can provide cloud direction, training, and advice to worldwide staff, ensure proper cloud governance and standard processes, and foster wide adoption of cloud best practices across the enterprise. "You have to have the people and processes in place, and that helps build the culture," said Dana. "That helps with the adoption of new solutions and concepts."

Yet building the right culture and leadership to spreadhead cloud transformation is not enough. For many small and mid-sized businesses with limited access to cloud skills, filling the skills gap is equally essential.

> **"Most organisations do not appreciate the cloud talent gap— they think they can gradually develop the skills. But to build a bridge between where you are now and where you will be in two years, you need to inject new talent into your organisation, whether it's with new hires, contractors, or third-party consultants."**
>
> *Craig Thomson*
> *Senior Vice President, Cloud and Application Services, SoftwareOne*

He added that mid-market companies will often hire a CIO with previous cloud migration experience. Dana, Daly, Scharnagle, and Nodoushani, for example, previously managed cloud transitions at more than one other company.

Getting help from consultants is common. Dana said AC Foods brought in consulting companies for projects where it didn't have the expertise. Once the major work was done, the company's staff could take over. "Everything is documented and there's a handover and knowledge transfer," he said.

Toysmith's Daly said it's essential to understand the issues at the start. He uses a cloud migration roadmap that covers technology steps, culture, process, and skills. "When you know what the gaps are, then you can identify what you might do to close those gaps," he said.

Thompson agrees: "Acknowledging there is a talent gap very early on is very important. It only gets harder if you wait."

5. Select the right tools and partners

Choosing the right cloud services and tools to migrate to the cloud in an innovative, cost-effective way is critical for companies. It can also be one of the most challenging decisions because of the proliferation of cloud services and different pricing schemes, as well as the potential for vendor lock-in. Picking the right tools and partners is vital for a successful cloud transformation.

Our research found that the most common cloud service model for mid-market companies is SaaS. Over half of companies in our survey use SaaS because of its flexibility, accessibility, and lower costs. IaaS and PaaS are used by slightly under half. The decision often comes down to giving administrators control (IaaS) or providing developers with more flexibility and ease of use (PaaS). Mid-market companies use Function as a Service (FaaS) less, although it can come in handy, particularly when they need on-demand functionality without maintaining the application infrastructure.

Leaders make a wider use of cloud service models, not only Software as a Service but also

Infrastructure as a Service (64% vs. 36% of beginners)

Platform as a Service (54% vs. 37% of beginners)

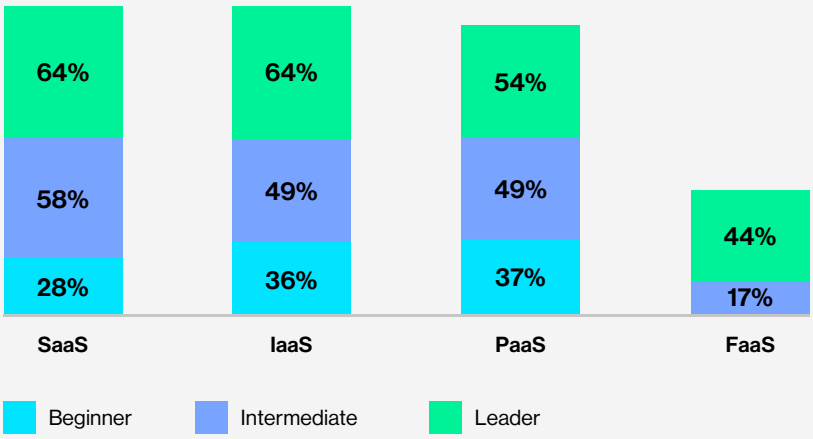
and particularly,

Function as a Service (44% vs. 0% of beginners)

Leaders tend to combine these cloud service models to form a rich cloud-computing environment to support their technical needs and range of business activities. For example, our research found that leaders now use 2.3 cloud service models, and over the next two years, the number will rise to 2.7. Beginners now use 1.4, and that number will increase to 1.9 in two years. Beginners rely more on PaaS or IaaS, followed by SaaS. Thirty-seven percent of beginners are still in the planning stage and not actively using any service, but plan to do so over the next two years.

Nodoushani of Examity explained that his firm primarily uses one hyperscaler for its cloud platform and draws on a combination of that service provider's IaaS or PaaS offerings, depending on which is most appropriate and easier to use. He also employs SaaS to handle specific business functions, such as CRM, project management, and financial management.

Use of cloud services by stage



For mid-sized enterprises without the cloud talent and resources available to larger companies, service providers and partners can help bridge the skills gap. With their higher cloud aspirations, leaders understand this best. They are more apt to look outside for needed expertise—and they plan to ratchet up their use of partners over the next two years.

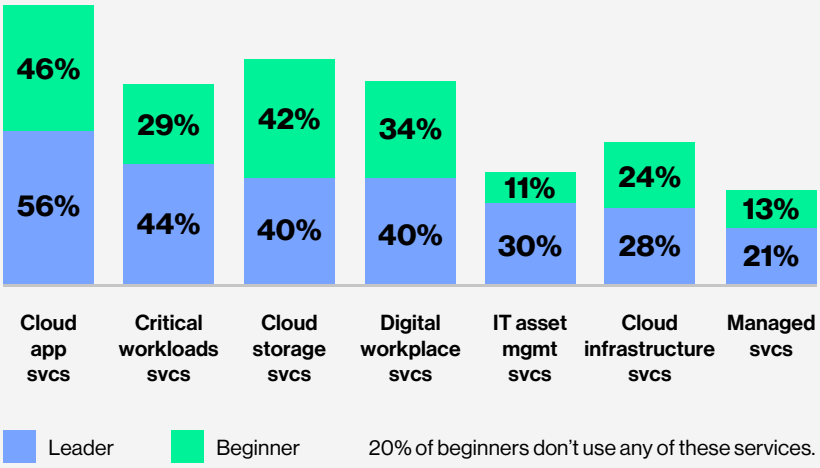
More than half of leaders now use cloud application services partners to develop, migrate, and modify applications effectively. Forty-four percent of leaders employ critical workload services partners to optimise key corporate functions for the cloud and reduce failures and downtime. And four out of 10 leaders rely on professional services for cloud storage and digital workplace to ensure that their workforces can work from anywhere, any time in a secure environment.

56% **of leaders assess and improve app cybersecurity before migration.**

According to SoftwareOne's Thomson, choosing an outside provider or partner can be a delicate balancing act. Full outsourcing can lead to loss of control and the ability to differentiate themselves from competitors. Yet choosing a provider with limited capabilities makes dealing with an unknown future more challenging. "Select a partner that sees the big picture, one which is truly customer-focused, and has the breadth of capabilities you will need as market dynamics unfold," Thomson advised.

Examity's Nodoushani, who has shepherded cloud migrations at several companies in the past, said he always uses technology partners to enable cloud migration. He pointed out that the major cloud service providers often offer funding to offset fees paid to technology service companies that work with them. "There is no reason not to use a technology partner when the cloud provider pays 75% of the cost," he said. "Whether I need help with infrastructure or a database, I tell the provider the type of partner I'm looking for and they will suggest two or three options."

Use of technology service providers, leaders vs. beginners



Revere Copper's Scharnagle is shopping for the right technology partners to help kickstart the company's cloud migration. But he's looking for those with experience with smaller organisations like his own. "I've been in very large implementations in the past, and I've seen them crush organisations between cost and time," he said. "There are a lot of organisations like mine out there that are smaller and haven't made this leap because they haven't wanted to invest the time and money. So, it's critical that we find the right partnership."

6. Put cybersecurity at the centre of cloud migration plans

"Leaders don't make cybersecurity an afterthought. They bring in security on day one," said Ortman of SoftwareOne. He believes that security should not just be part of the project team, but also part of the FinOps team. "They should be all in from day one because every security decision has a financial impact," he said.

Unfortunately, not all mid-market companies have Chief Information Security Officers (CISOs). In that case, according to Thomson of SoftwareOne, giving one of the project team members accountability for security is vital. "Cybersecurity cannot be a shared collective responsibility across 10 people. It will fall between the cracks."

Our research found that cybersecurity is the top technical challenge for companies, cited by 62% of those surveyed. According to Thomson, one of the biggest difficulties is misconfiguration. "Companies have an enormous opportunity to configure cloud environments in any way they want. The hyperscalers want it to be open. They want you to have flexibility. They want you to innovate. But if you are unfamiliar with all those different services and how to lock them down, then it's easy to make a security mistake."

62% **of businesses say cybersecurity is the top technical challenge.**

Businesses rely on a range of cybersecurity tools to protect their cloud configurations. For example, a recent ThoughtLab cybersecurity study shows that 32% of mid-market companies now use cloud access security brokers to insert a policy enforcement point between enterprise users and cloud service providers. Another 27% invest in cloud workload protection programmes to secure workloads that move across cloud environments.

Cloud leaders take more steps to cultivate cybersecurity. For example, they are more likely to assess and improve app cybersecurity before migration (64% vs. 36% of beginners). By doing so, they avoid shifting vulnerabilities in legacy apps over to the cloud, where they can become more pronounced. Overall, cloud leaders are much more advanced than beginners in infrastructure security: 60% of leaders rate infrastructure security as high or very high, compared with only 32% of beginners.

64% **of leaders assess and improve app cybersecurity before migration.**

The cloud is often seen as more secure than on-prem platforms because of the security features that cloud providers build into their platforms. But Global Industrial's Sabshon believes that the level of exposure is similar. "Someone leaves a port open; someone has an IP address open, which means someone can get in," he said.

As a result, Sabshon argued, companies have the same responsibility to ensure that they have locked everything down in the cloud. "In this virtualised environment you need a different level of networking technologies, and that leads to certain mistakes," he said. "You may end up leaving something open, so you must use tools that are designed for the cloud. Cloud-native apps need to have a cloud-native security platform."

Dana of AC Foods agrees. “Everyone thinks that the public cloud is more secure. But that is only if you do it correctly, have the correct partners in place, and build the right strategy.”

> **“Everyone thinks that the public cloud is more secure. But only if you do it correctly, have the correct partners in place, and build the right strategy.”**
>
> *Philip Dana*
> *Senior Director of IT at AC Foods*

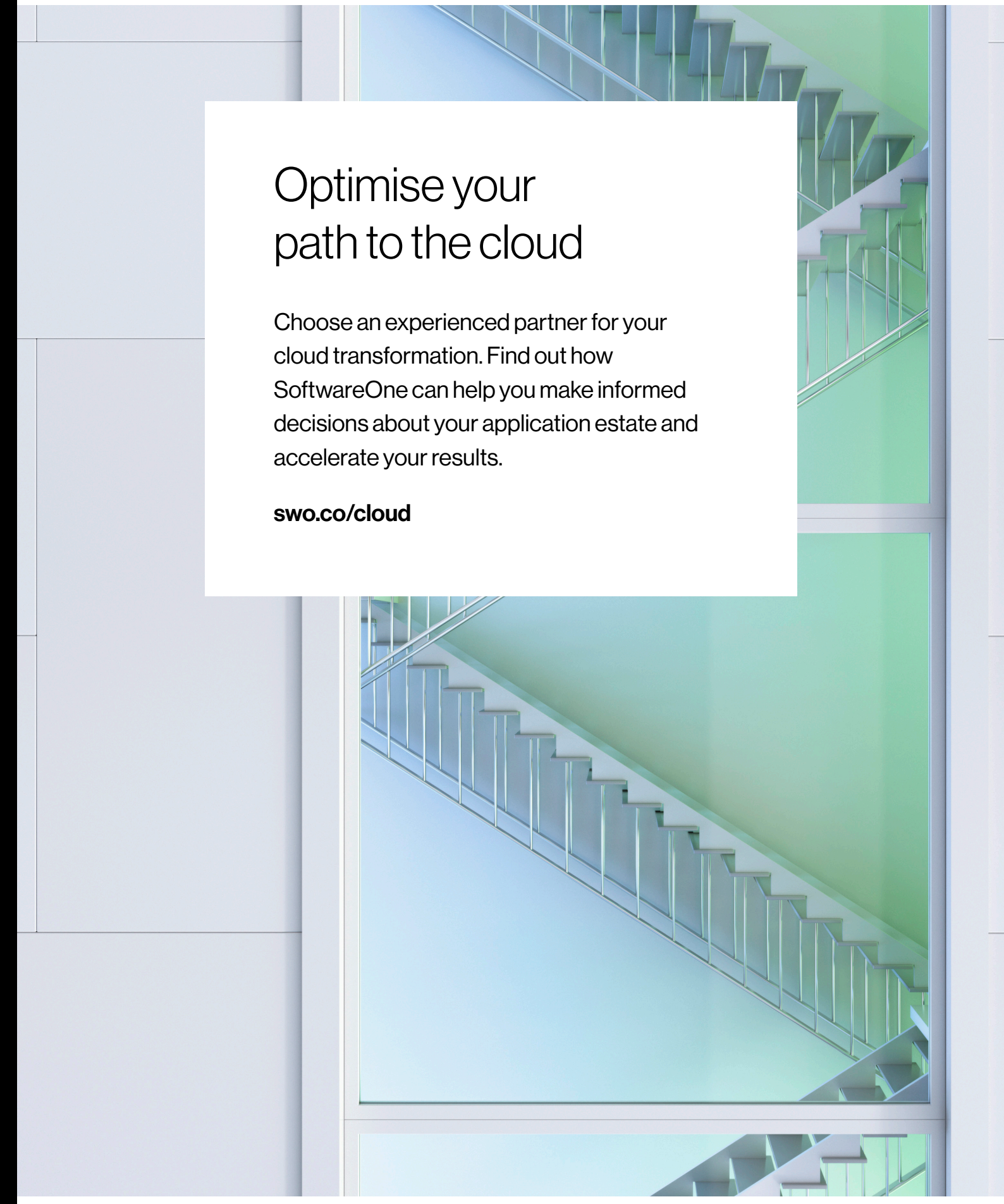
Ensuring cloud cybersecurity

Craig Thomson, Senior Vice President, Cloud and Applications Services at SoftwareOne, believes that companies should look closely at three aspects of cybersecurity in the cloud: talent, application security, and tools.

“Most of the cybersecurity problems I’ve seen when companies have moved into the cloud are grounded in a lack of adequate cloud talent,” he said. “Developers and infrastructure teams that are used to locking down their environment on-premises through firewalls and patching may think that the cloud is similar, but it’s not.” He advised bringing in people from the beginning who understand cloud cybersecurity or turning to outside consultants.

Locking down existing applications before moving them to the cloud is critical to avoid migrating security risks. “The vulnerabilities often existed in the application before it was shifted to the cloud,” he said. “Doing a security audit of their applications before moving to the cloud is a step many organisations miss.” Finding and eliminating these vulnerabilities is particularly necessary, he said, for applications not slated for modernisation, which would normally include a more secure configuration.

In addition, Thomson said, people with the needed cloud skills will be better able to choose the right cybersecurity tools to use after migration. “It’s really important to include security as a thread throughout your cloud architecture and journey,” he said. “While cloud-native security will address some concerns, companies will need to do their own monitoring, tracking, and audit control. Third-party tools can certainly improve your security posture, but they must be compatible not only with the company’s own application code, but also with the cloud platform and services it is using.”



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