NODE4

THE FUTURE OF HYBRID CLOUD

**THE DRIVERS
BEHIND HYBRID
CLOUD ADOPTION**

EXECUTIVE SUMMARY

The Future of Hybrid Cloud is an independent piece of research carried out exclusively for Node4 by Censuswide. It explores some of the drivers behind the current and planned use of hybrid cloud environments (public cloud plus at least one other infrastructure type) amongst UK businesses. The findings are based on the views of 302 IT decision-makers from various vertical markets with 1,000 - 10,000 employees and a broad spectrum of annual turnover.

We begin by demonstrating that public cloud remains a strategic destination for companies looking to modernise applications. We reveal 12 ways in which public cloud platforms support an array of short- and long-term IT department and wider business goals —demonstrating respondents are extremely keen to take advantage of the full range of services and technologies on offer across the leading platforms.
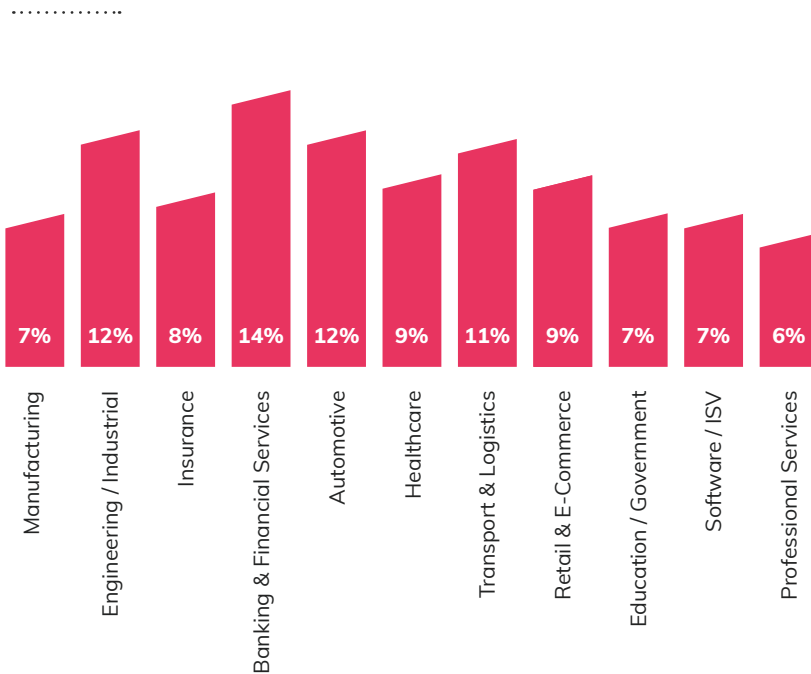
Looking deeper into public cloud adoption patterns, the report finds some UK organisations have encountered challenges while attempting to migrate the final 20 – 30% of their production workloads onto public cloud platforms.

Consequently, these companies still have a significant volume of applications running in non-cloud environments. As such, many have found themselves operating hybrid cloud environments — often without a long-term strategy in place. We consider some of the issues businesses could face in this scenario, particularly if they lack the necessary skills.

The report also looks at why some businesses are considering a more formal hybrid cloud strategy. In this context, it explores potential barriers to longer-term hybrid cloud adoption — including the need to maintain on-premises and data centre systems. Finally, our analysis of respondent data provides insight into the requirements and conditions that are necessary to transform hybrid cloud usage from an informal short-term or interim solution into a well-planned and manageable long-term IT strategy that unifies cloud and non-cloud components.

MEET THE RESPONDENTS
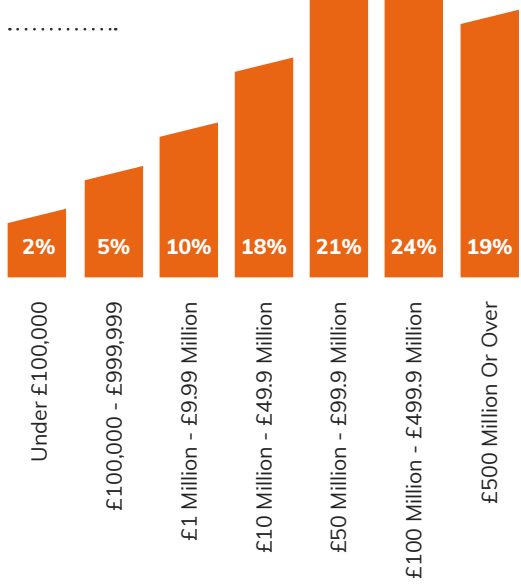
MARKET SECTOR

Sector	%
Manufacturing	7%
Engineering / Industrial	12%
Insurance	8%
Banking & Financial Services	14%
Automotive	12%
Healthcare	9%
Transport & Logistics	11%
Retail & E-Commerce	9%
Education / Government	7%
Software / ISV	7%
Professional Services	6%

COMPANY SIZE

Size	%
1,000 - 2,000 Employees	38%
2,001 - 5,000 Employees	37%
5,001 - 10,000 Employees	25%

COMPANY TURNOVER

Turnover	%
Under £100,000	2%
£100,000 - £999,999	5%
£1 Million - £9.99 Million	10%
£10 Million - £49.9 Million	18%
£50 Million - £99.9 Million	21%
£100 Million - £499.9 Million	24%
£500 Million Or Over	19%

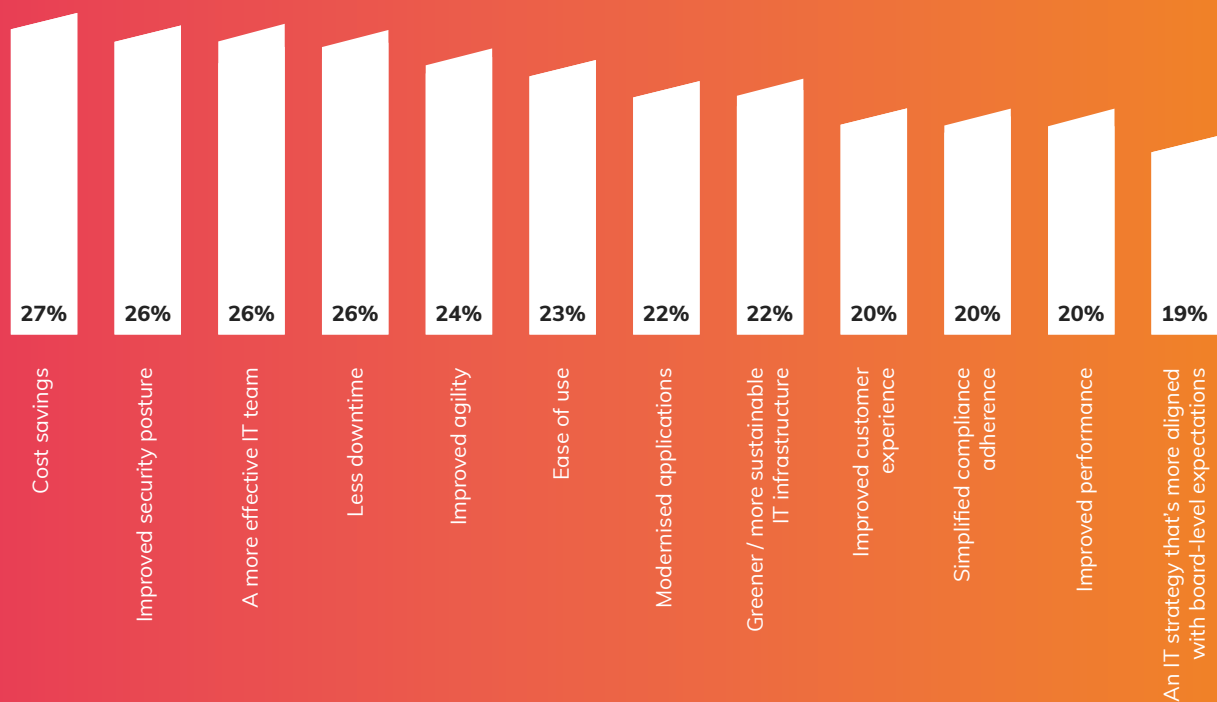## WHICH OF THE FOLLOWING ARE YOU USING, IF ANY?

99% of respondents confirmed that they use either Amazon Web Services (AWS), Google Cloud Platform (GCP) or Microsoft Azure — or a combination thereof.

- AWS (51%)
- GCP (47%)
- Azure (49%)
- None (1%)
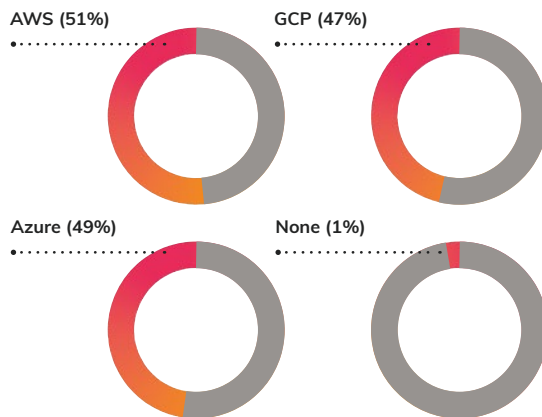
THE FUTURE OF HYBRID CLOUD: FULL REPORT

WHAT ARE THE BENEFITS OF PUBLIC CLOUD ADOPTION?

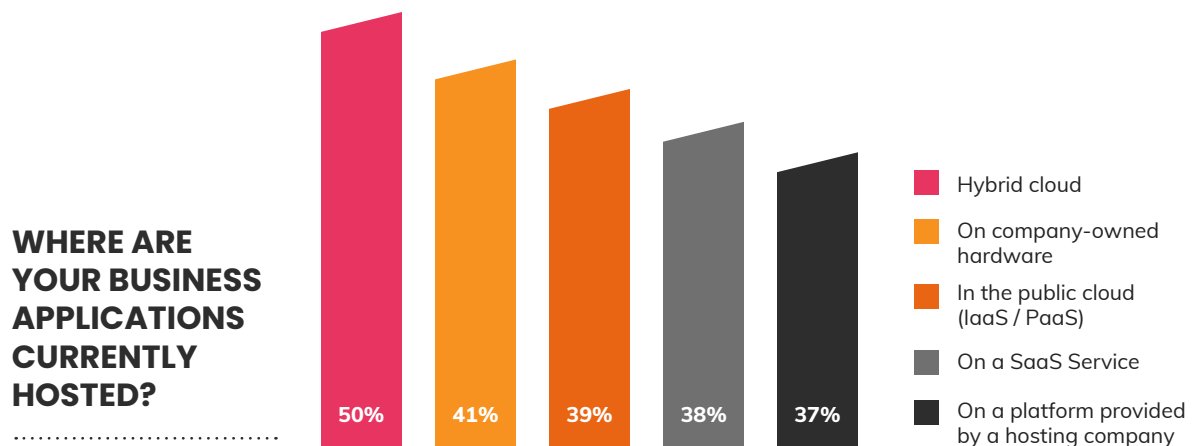| 27%	26%	26%	26%	24%	23%	22%	22%	20%	20%	20%	19%
Cost savings	Improved security posture	A more effective IT team	Less downtime	Improved agility	Ease of use	Modernised applications	Greener / more sustainable IT infrastructure	Improved customer experience	Simplified compliance adherence	Improved performance	An IT strategy that's more aligned with board-level expectations

Respondents highlighted twelve benefits, including improved security posture (26%), a more efficient IT team (26%), less downtime (26%) and improved agility (24%).

Just over a quarter of respondents said public cloud delivered cost savings. But, as we'll see further into the report, this is a complex area: public cloud may have produced cost savings in some instances, but 56% of respondents said it cost them more than they initially thought it would to run.

The research also reveals that public cloud adoption can have a positive impact beyond the IT team and deliver company-wide advantages. For example, 20% of respondents said that it has led to improved customer experience.

In addition, with climate change considerations playing an increasingly important role in IT decision-making, it's interesting to note that 22% of respondents identified the move towards a greener and more sustainable IT infrastructure as a key advantage.
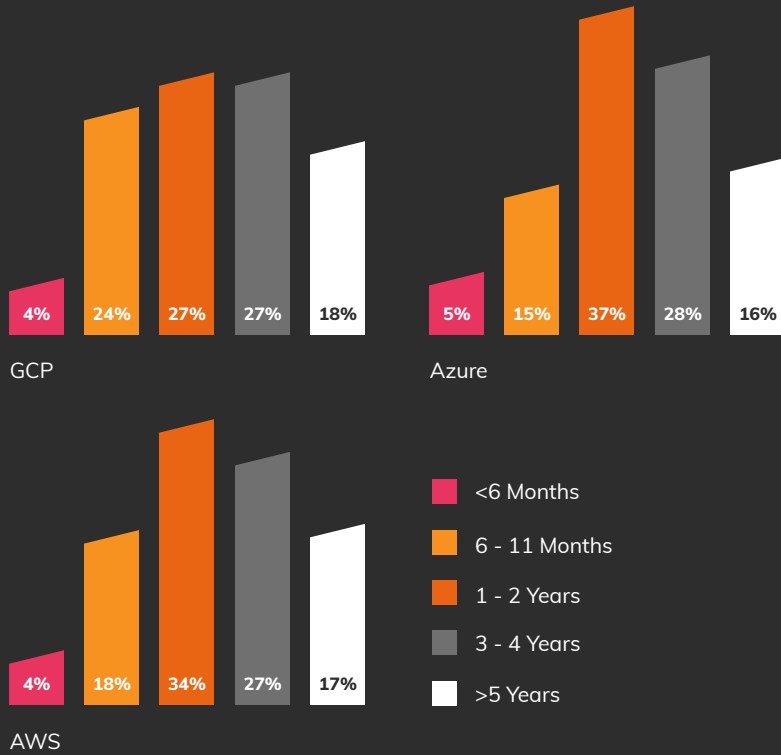
DESPITE THE ADVANTAGES OF PUBLIC CLOUD, UK COMPANIES STILL HAVE A HUGE VOLUME OF APPLICATIONS RUNNING IN NON-CLOUD ENVIRONMENTS.

WHERE ARE YOUR BUSINESS APPLICATIONS CURRENTLY HOSTED?

- **Hybrid cloud** — 50%
- **On company-owned hardware** — 41%
- **In the public cloud (IaaS / PaaS)** — 39%
- **On a SaaS Service** — 38%
- **On a platform provided by a hosting company** — 37%

41% of UK organisations using public cloud still have applications running on company-owned hardware — and 37% on a platform provided by a hosting company.

This represents a massive volume of applications running in non-cloud environments — even several years after companies migrated their first workload. Looking in more detail at this data point, on average, 27% of respondents migrated their company's first production workload to a public cloud environment 3 - 4 years ago — and 17% did so more than five years ago.

HOW LONG IS IT SINCE YOU MIGRATED YOUR FIRST PRODUCTION WORKLOAD TO THE PUBLIC CLOUD?

GCP

<6 Months	6 - 11 Months	1 - 2 Years	3 - 4 Years	>5 Years
4%	24%	27%	27%	18%

Azure

<6 Months	6 - 11 Months	1 - 2 Years	3 - 4 Years	>5 Years
5%	15%	37%	28%	16%

AWS

<6 Months	6 - 11 Months	1 - 2 Years	3 - 4 Years	>5 Years
4%	18%	34%	27%	17%

Legend:
- <6 Months
- 6 - 11 Months
- 1 - 2 Years
- 3 - 4 Years
- >5 Years

Most of our respondents migrated their first production workload to a public cloud environment 1 - 2 years ago, while 27% did so 3 - 4 years ago. 17% migrated their first production workload more than five years ago.

WHAT PERCENTAGE OF YOUR BUSINESS APPLICATIONS ARE CURRENTLY HOSTED IN A PUBLIC CLOUD ENVIRONMENT?
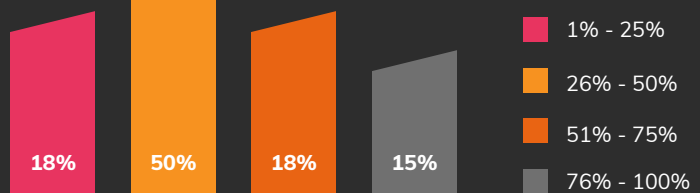
1% - 25%	26% - 50%	51% - 75%	76% - 100%
18%	50%	18%	15%

Legend:
- 1% - 25%
- 26% - 50%
- 51% - 75%
- 76% - 100%

Half of respondents said they currently have 26 - 50% of their business applications running in the public cloud. Just 18% said they had between 51 - 75%, while 15% had 76 - 100%.

These figures suggest that various workloads are unsuitable for public cloud platforms. They may be particularly sensitive to latency or performance, expensive to operate on public cloud or have location or compliance dependencies. They might also run applications that aren't supported on public cloud platforms.

WHAT PLATFORMS WILL UK COMPANIES BE USING TO HOST THEIR BUSINESS APPLICATIONS IN THREE YEARS?

WHAT PLATFORMS WILL UK COMPANIES BE USING TO HOST THEIR BUSINESS APPLICATIONS IN THREE YEARS?

44%	42%	39%	39%	37%
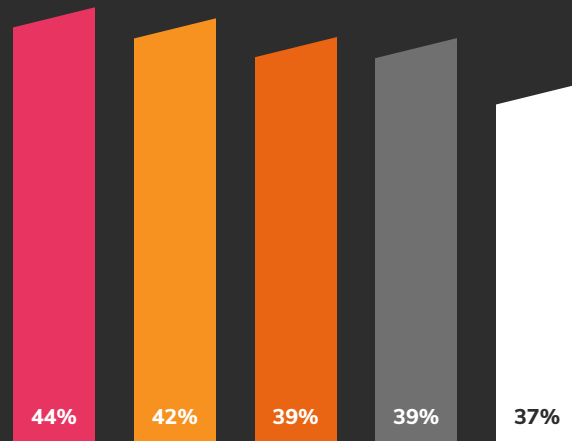
- On company-owned hardware
- On a platform provided by a hosting company
- Hybrid cloud
- In the public cloud (IaaS / PaaS)
- On a SaaS Service

MORE NON-CLOUD INFRASTRUCTURE

44% still plan to be running applications on company-owned hardware in three years, while 42% think they'll still be using a platform provided by a hosting company. Organisations with 5,000+ employees are more likely to be running applications on company-owned hardware (49%) compared to those with 1000 - 2,000 employees (44%) and 2,001 - 5,000 employees (41%).

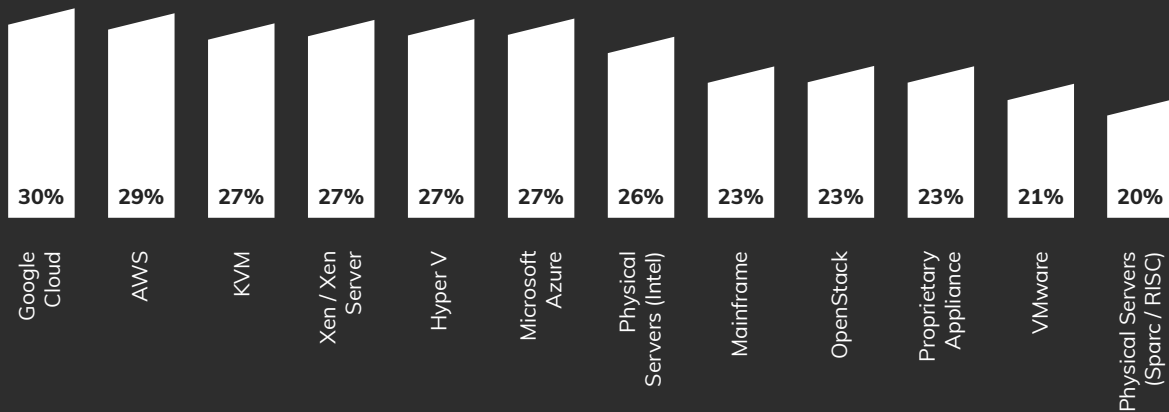## LESS OPTIMISM ABOUT FURTHER PUBLIC CLOUD MIGRATIONS

Businesses are not optimistic about increasing the percentage of workloads in their public cloud environments within the next three years. Just 18% said they will have migrated 51 - 75% of their workloads in that time. Only 12% expect to have migrated 76 - 100% of their workloads.

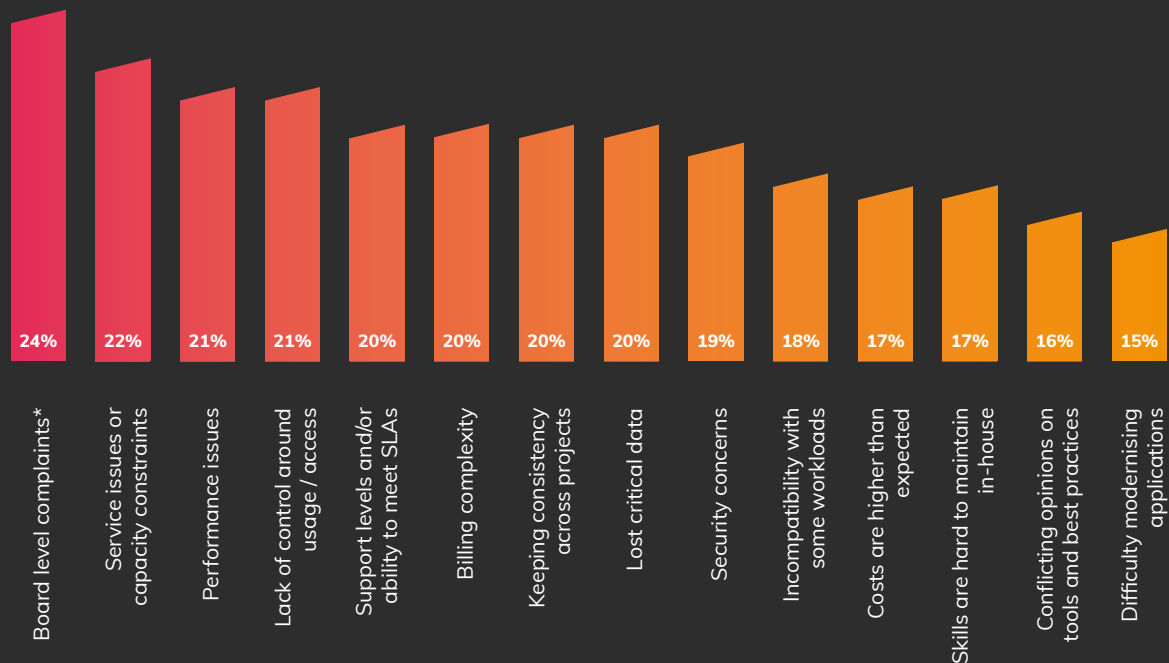## NO CHANGE IN PUBLIC CLOUD CONSUMPTION LEVELS

39% of respondents think they'll still be running business applications on public cloud platforms in three years.

A PROPENSITY TO RETAIN NON-CLOUD PLATFORMS AND TECHNOLOGIES

Respondents told us they plan to keep the following non-cloud technologies for five years or more:

Technology	%
Google Cloud	30%
AWS	29%
KVM	27%
Xen / Xen Server	27%
Hyper V	27%
Microsoft Azure	27%
Physical Servers (Intel)	26%
Mainframe	23%
OpenStack	23%
Proprietary Appliance	23%
VMware	21%
Physical Servers (Sparc / RISC)	20%

SOME BUSINESSES EXPERIENCED CHALLENGES WHEN USING PUBLIC CLOUD SERVICES

| Challenge	%
Board level complaints*	24%
Service issues or capacity constraints	22%
Performance issues	21%
Lack of control around usage / access	21%
Support levels and/or ability to meet SLAs	20%
Billing complexity	20%
Keeping consistency across projects	20%
Lost critical data	20%
Security concerns	19%
Incompatibility with some workloads	18%
Costs are higher than expected	17%
Skills are hard to maintain in-house	17%
Conflicting opinions on tools and best practices	16%
Difficulty modernising applications	15%

As we've seen earlier, our research identified plenty of positives around public cloud adoption, but crucially, it also uncovered some challenges. These include service issues or capacity constraints (22%), performance issues (21%), a lack of control around usage or access (21%) and higher costs than expected (17%).

* We interpret board-level complaints as issues that have escalated to the extent that C-level executives have become involved and, potentially, have had to discuss their organisation's public cloud strategy with one of our respondents.

IT Managers also encountered issues with workload incompatibility (18%) and difficulty modernising applications (15%). Taken together, these issues suggest an appetite amongst respondents to move workloads that might not have been compatible with public cloud environments. But such is the desire for centralised application management — and all the other benefits that come from public cloud adoption — they appear willing to take a chance, migrate their workloads and then try to deal with any issues further down the line.

This might explain why half of respondents admitted they've had to migrate a workload back off a public cloud platform.

HAVE YOU HAD TO MIGRATE A WORKLOAD BACK OFF A PUBLIC CLOUD PLATFORM?

Unsure (5%)

Yes (50%)

No (45%)
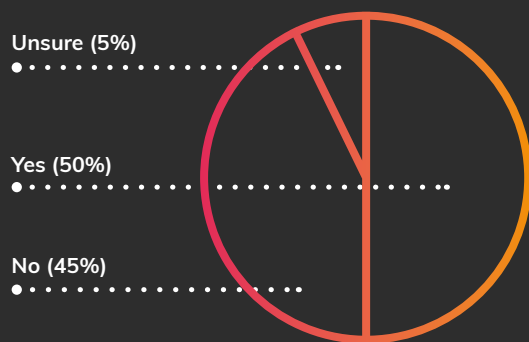
Half of respondents admitted they have had to migrate a workload back off a public cloud platform because of either cost, technical or support issues — this is also more likely to be the case in larger companies.

PUBLIC CLOUD: BALANCING EXPECTATIONS AND REALITY

HAS YOUR PUBLIC CLOUD EXPERIENCE LIVED UP TO EXPECTATIONS?

Unsure (10%)

Yes (58%)

No (32%)
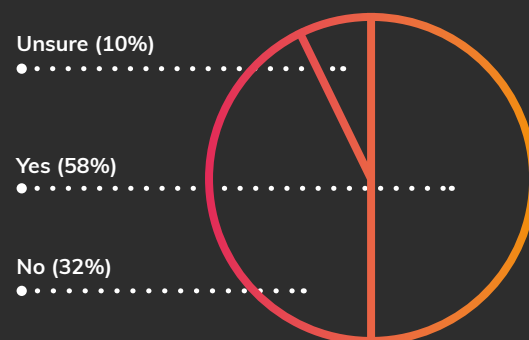
Over half (58%) of respondents said public cloud has lived up to their expectations. However, almost a third said it has not. This demonstrates that, while public cloud offers significant IT department and wider company benefits, it's not a one-size-fits-all solution — and some businesses will need to adapt their IT strategies accordingly.

IS YOUR PUBLIC CLOUD ENVIRONMENT MORE OR LESS EXPENSIVE TO OPERATE THAN INITIAL PROJECT FORECASTS?

Much more expensive	Slightly more expensive	About the same	Slightly less expensive	Much less expensive
17%	39%	26%	16%	2%

A quarter of respondents said that the cost of operating their public cloud platform was about the same as their initial project forecast. However, over half (56%) told us their public cloud environment is more expensive than anticipated.

These cost increases could have been caused by disorderly public cloud migrations and underestimating the amount of cloud resources such as not factoring in fully loaded costs of projects, with networking, security and poor cost control governance being key areas that cause cost sprawl.

TO WHAT EXTENT ARE YOUR PUBLIC CLOUD ENVIRONMENTS MANAGED INTERNALLY, BY A HOSTING COMPANY, OR BY A THIRD-PARTY?

We found that businesses using public cloud platforms rely heavily on external operational expertise. Incredibly, more than a third of companies using Azure (36%), AWS (37%) and Google Cloud (40%) have their platforms managed by a hosted company or a third-party. And, on average, around 20% share responsibility for operating their public cloud environment with a hosting company or another third party.

Azure

Not applicable / unsure 7%

Managed by both 33%

Managed internally 24%

Hosting company / third-party 36%

AWS

Not applicable / unsure 4%

Managed by both 34%

Managed internally 25%

Hosting company / third-party 37%

GCP

Not applicable / unsure 5%

Managed by both 14%

Managed internally 41%

Hosting company / third-party 40%

TO WHAT EXTENT ARE YOUR NON-CLOUD IT INFRASTRUCTURE COMPONENTS MANAGED INTERNALLY, BY A HOSTING COMPANY, OR BY A THIRD-PARTY?

These businesses also require significant third party help to manage their non-cloud environments — and, by extension, their hybrid cloud infrastructure. Around 40% of companies that said they operate a public cloud environment rely on hosting companies or third-parties to manage their physical Intel servers, VMware architecture, OpenStack and proprietary servers.

WHICH OF THESE PLATFORMS ARE CURRENTLY MANAGED INTERNALLY / BY A HOSTING COMPANY / THIRD-PARTY?

Physical servers
| 27% | 39% | 26% | 7% |

Hyper V
| 28% | 31% | 32% | 9% |

VMware
| 30% | 39% | 24% | 7% |

Mainframe
| 28% | 36% | 27% | 9% |

Legend:
- Managed internally
- Hosting company / third-party
- Managed internally AND by a hosting company / third-party
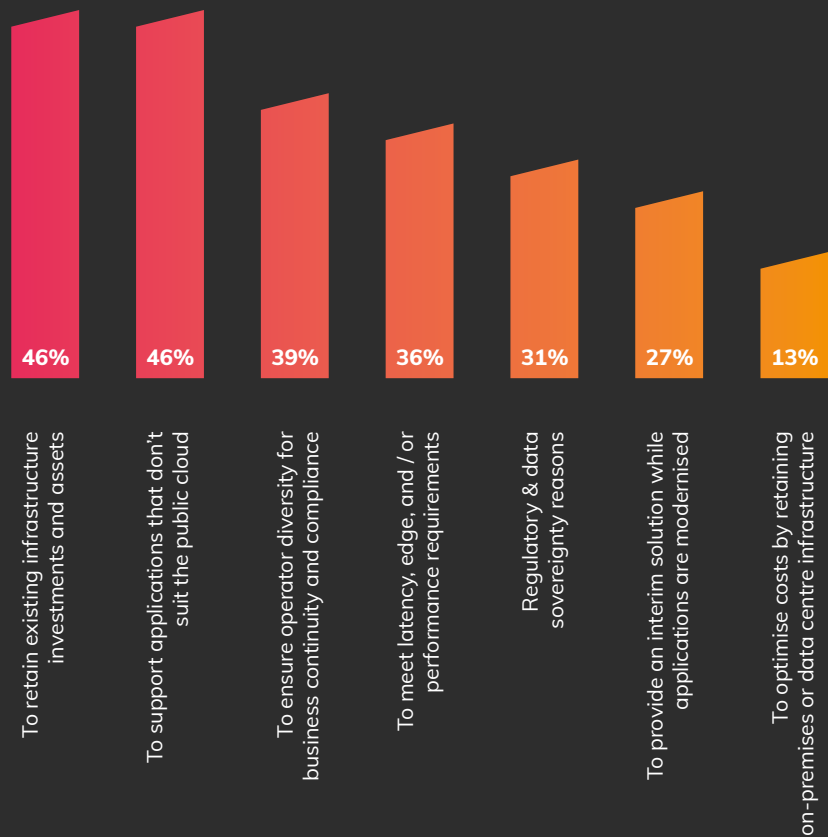- Not applicable / unsure
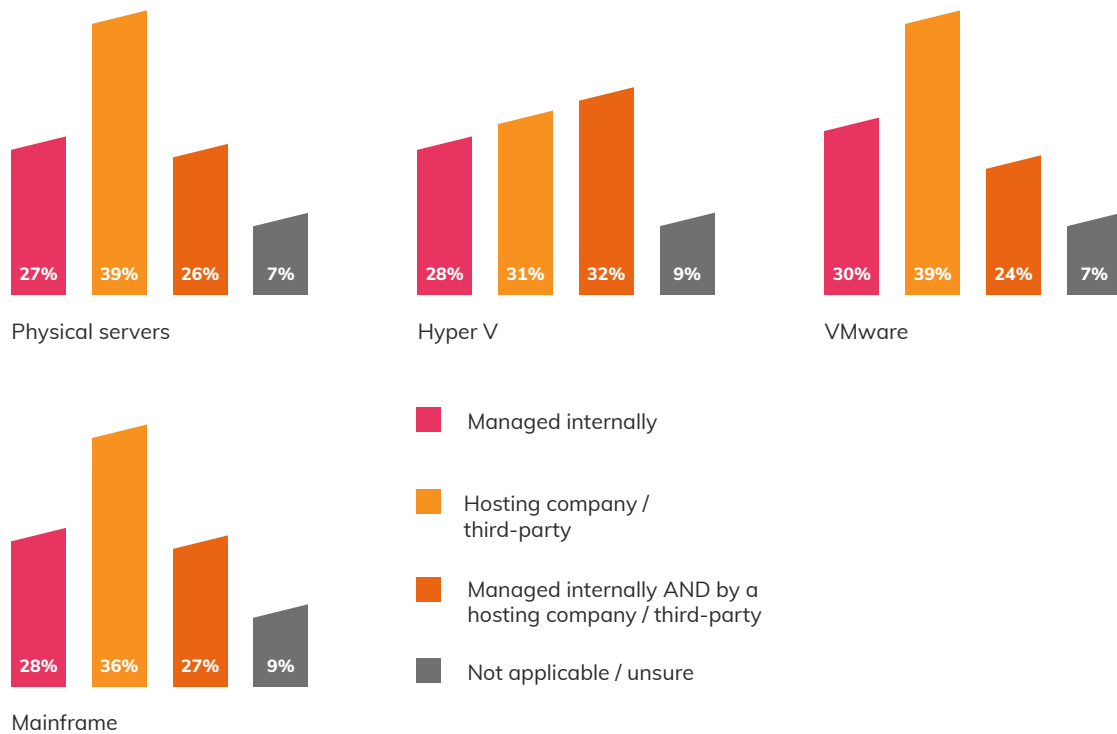
IT'S HARD FOR UK COMPANIES TO MAINTAIN THE IN-HOUSE IT SKILLS THEY NEED TO MANAGE PUBLIC CLOUD ENVIRONMENTS

The complexity of managing and unifying public cloud and non-cloud components certainly pushes companies to lean heavily on third-party support. However, we should not neglect the impact of IT skill shortages in the UK.

Our respondents recognise this issue, with 17% reporting that it's a challenge to maintain in-house public cloud-related skills. This issue seems most pronounced in Southwest England, where 46% of respondents said skill shortages are an issue, followed by Northern Ireland (36%) and Scotland (27%).

WHY ARE BUSINESSES CONSIDERING RUNNING HYBRID ENVIRONMENTS RIGHT NOW?

WHICH OF THE FOLLOWING REASONS WOULD YOU CONSIDER A DRIVER FOR ADOPTING A HYBRID CLOUD STRATEGY?

Reason	Percentage
To retain existing infrastructure investments and assets	46%
To support applications that don't suit the public cloud	46%
To ensure operator diversity for business continuity and compliance	39%
To meet latency, edge, and / or performance requirements	36%
Regulatory & data sovereignty reasons	31%
To provide an interim solution while applications are modernised	27%
To optimise costs by retaining on-premises or data centre infrastructure	13%

Our respondents identified two top drivers for adopting a hybrid cloud infrastructure: the need to retain infrastructure investment and assets (46%) and to support applications that don't suit public cloud environments (46%).

This is closely followed by a desire to maintain operator diversity for business continuity (39%). In addition, 36% said that hybrid cloud adoption would help them meet latency, edge and performance issues.

Drilling down into responses, it's worth noting that retaining existing infrastructure and assets — and supporting applications that don't suit the cloud — are much more important to smaller companies. 51% of respondents from companies with 1,000 - 2,000 employees identified these reasons as their two joint top priorities.

Adopting hybrid cloud to optimise costs by retaining on-premises or data centre infrastructure was more important at larger companies (those with 5,001 - 10,000 employees) — 17% compared with the 13% survey-wide response. These answers appear to suggest many IT decision-makers have accepted it's not appropriate or practical to move all their workloads to a public cloud environment.

Tellingly, however, 27% of respondents told us they would consider a hybrid cloud strategy as an interim solution while applications are modernised. Many also hope to decrease the percentage of applications running on hybrid cloud environments in three years. This suggests there are still some instances where businesses think that a 100% public cloud environment is achievable for them — and view hybrid cloud as a temporary fix until they can achieve their aims.

Given the broader findings of this report, this seems to be an unrealistic expectation for most businesses. These companies must prepare for a medium-to-long-term future in which hybrid cloud plays a more permanent role than they might currently imagine.

WHERE ARE YOUR BUSINESS APPLICATIONS CURRENTLY HOSTED, AND WHERE DO YOU THINK THEY WILL BE HOSTED IN THE NEXT THREE YEARS?
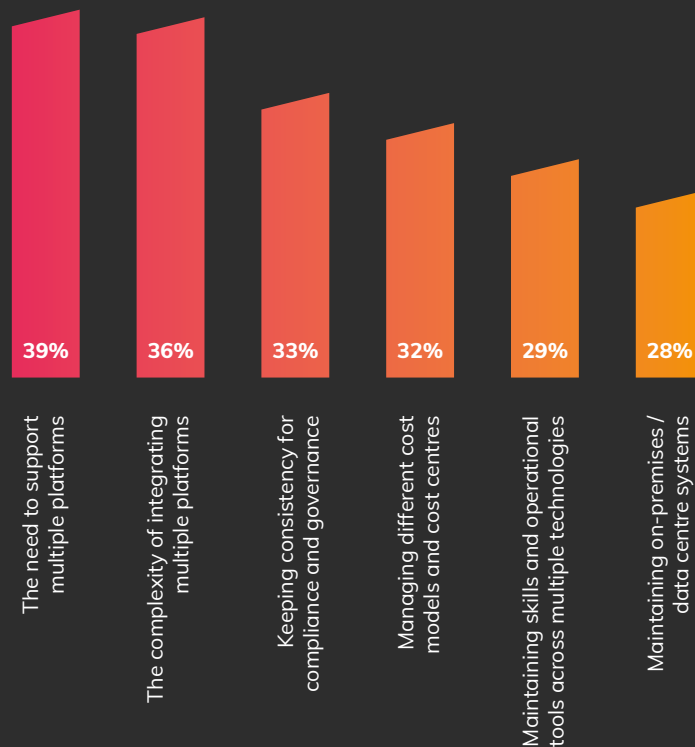
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Present					Next 3 years				
50%	41%	39%	38%	37%	39%	44%	39%	37%	42%
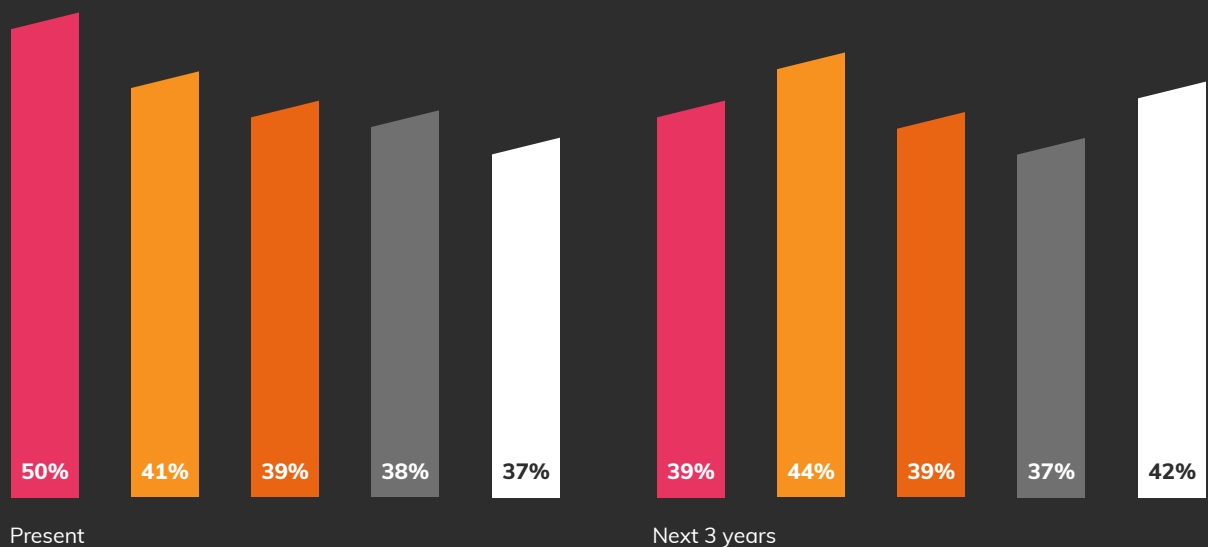
Legend:
- ■ Hybrid cloud
- ■ On company-owned hardware
- ■ In the public cloud (IaaS / PaaS)
- ■ On a SaaS Service
- ■ On a platform provided by a hosting company

WHAT CHALLENGES DO UK BUSINESSES FACE WHEN ADOPTING A HYBRID CLOUD STRATEGY?

WHAT WOULD YOU IDENTIFY AS A KEY CHALLENGE OF OPERATING A HYBRID MODEL?

Challenge	%
The need to support multiple platforms	39%
The complexity of integrating multiple platforms	36%
Keeping consistency for compliance and governance	33%
Managing different cost models and cost centres	32%
Maintaining skills and operational tools across multiple technologies	29%
Maintaining on-premises / data centre systems	28%

39% of respondents said the need to support multiple platforms was the biggest challenge of operating a hybrid cloud model. This was closely followed by the complexity of integrating multiple platforms (36%).

Interestingly, many of the barriers respondents identified to adopting a hybrid cloud model could also be considered drivers or catalysts. However, to turn these barriers into benefits, IT decision-makers must be confident in their ability (or service providers) to configure and manage their hybrid cloud environment effectively.

If businesses can overcome these barriers, hybrid cloud could provide a cost-effective, long-term way of managing their IT infrastructure worrying about moving suitable workloads to a public cloud environment.

39% OF RESPONDENTS SAID THE NEED TO SUPPORT MULTIPLE PLATFORMS WAS THE BIGGEST CHALLENGE OF OPERATING A HYBRID CLOUD MODEL

CONCLUSIONS

PUBLIC CLOUD BRINGS MANY BENEFITS TO BUSINESSES

Respondents told us that public cloud has benefited their business by improving their security posture, delivering more effective IT team operations, cutting downtime and enabling a greener, more sustainable IT infrastructure.

BUT IT'S NOT FOR EVERYONE

Our research demonstrates that public cloud technology isn't a match for every business – and there's no one-size-fits-all solution, especially for companies with precise performance or data sovereignty needs.

IT DECISION-MAKERS ADMIT THAT PUBLIC CLOUD HAS SOME DRAWBACKS

Over half of respondents told us that public cloud could cost much more to maintain than expected. There can also be service-related issues with providers — and workloads are not always compatible. These three issues all disproportionately impact larger companies.

18% of respondents said workload incompatibility was their biggest challenge or concern — and 50% admitted having to migrate a workload back off a public cloud platform because of either cost, technical or support issues.

SOME BUSINESSES MAY NOT MANAGE TO MIGRATE MORE THAN HALF THEIR WORKLOADS TO PUBLIC CLOUD ENVIRONMENTS

Half of respondents said they currently have 26 - 50% of their business applications running in public cloud environments — 18% have 51 - 75%. Only 15% have 76 - 100%. Furthermore, over 40% of respondents think they will still be running applications on company-owned hardware in three years.

HYBRID CLOUD IS NOW A MEDIUM-TO-LONG-TERM REALITY FOR MANY UK BUSINESSES

Even if those companies haven't formally acknowledged the term or implemented an effective hybrid cloud management strategy.

YET MOST BUSINESSES DON'T HAVE THE SKILLS TO MANAGE HYBRID CLOUD THEMSELVES

Our findings suggest companies in this position will need support in helping their hybrid environments quickly reach maturity and full functionality. This is due to the general complexity of hybrid cloud environments and a lack of appropriate in-house IT skills.

BUT IF COMPANIES CAN SOLVE THE BARRIERS TO HYBRID CLOUD ADOPTION, IT COULD PROVIDE THE FUNCTIONALITY THAT PUBLIC CLOUD INITIALLY PROMISED — WITHOUT HAVING TO MIGRATE ANY MORE WORKLOADS

Respondents identified potential challenges to hybrid cloud adoption, including managing different cost models and cost centres — and maintaining skills and operational tools across multiple technologies.

But we're confident that these can be overcome by emerging technologies that simplify hybrid cloud environments. Tools such as Azure Stack HCI and Azure Arc meet these core challenges head-on, providing centralised management, compliance and security alongside the ability to run PaaS services outside of the public cloud.

Technology such as this could provide UK businesses with the basis for a cost-effective, long-term strategy to manage their IT infrastructure — without having to migrate workloads unsuited to public cloud environments.

FIND OUT MORE ABOUT HYBRID CLOUD

Get in touch with us for best practice approaches, guides and events.

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