Public Cloud: Does the reality live up to the hype?

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Lessons learned from a decade of a ‘Cloud First’ approach to IT

Executive Summary

Since 2013, the UK public sector has taken a 'Cloud First' approach, a policy of defaulting to public cloud for new and existing IT applications. Many private sector organisations have followed suit, seeing the hyper-scalers' cloud offerings (AWS, Microsoft, Google, and others) as the future of IT. Has this decade-long rush to Public Cloud paid off?

67%

of IT decision makers wished wished they had taken a hybrid approach in the first place

Whilst there are clearly advantages of the public cloud, our new research – carried out amongst senior IT decision makers at large organisations – suggests success has been mixed. In fact, **77%, said public cloud operating costs were more than expected**, and a massive...

> **...98%** experienced challenges migrating their IT infrastructure to public cloud.

What's more, **91% are now actively bringing applications back** from the cloud to their own servers, either on-premise or to a colocation data centre.

Whilst some applications remain well-suited to the cloud, others have proven complex to migrate from purpose-built on-premise IT architectures to the cloud. This has led to unexpected costs, delays and degradation of services.

Furthermore, many public cloud users have seen subscription costs spiral as they have discovered that data intensive applications, that require a lot of storage transfer, are pushing costs above budget. Many are locked into contracts or tied to IT systems built around cloud. Our research shows more than a hint of buyer's remorse - **67% wished they had taken a hybrid approach in the first place, and 45% say they should have taken more time to understand exactly what they were signing up for** with their cloud provider.

AI may further erode the arguments for Cloud First, since AI applications require storage and real-time processing of vast amounts of data – much of it sensitive. Over half **(52%) of respondents were prioritising local servers under their own control for AI**, rather than the cloud.

That is not to say public cloud's days are numbered. Its benefits remain vast. But our research raises a lot of questions about the merits of a dogmatic Cloud First approach, and makes clear that for most organisations, some form of hybrid approach will make more sense. This highlights the need for better upfront planning, and ongoing assessment of value, backed by a readiness to change course when things aren't working.

This paper draws on our research into the experience of large public and private sector organisations that have already ventured down this path, to understand the challenges of public cloud, where it works, where it doesn't and what an optimal approach might look like.

For those yet to start their cloud journey, or who are reevaluating their current approach, we hope it proves useful in helping you shape your future decisions.

Our research findings

Over July 2024, Asanti commissioned research amongst 100 senior IT decision makers at public and private companies who had been directly involved in the move to public cloud at their organisation, to explore their experience, challenges and lessons learned.

The headline findings are that:

98% faced problems when migrating to the cloud

91% are now moving at least some of their data and applications back from the public cloud to their own servers.

Let's look at the journey that got them here.

A glossary of terms used in this report

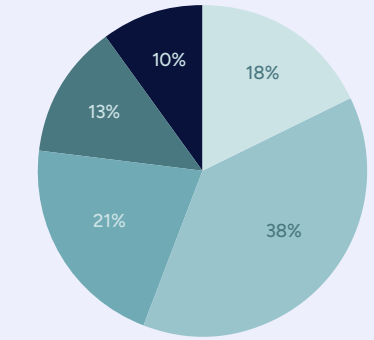
Public cloud:	Computing services (ie IT infrastructure, software, and data) are hosted on third-party servers (eg AWS, Microsoft Azure) and delivered over the public internet.
On-premise:	Computing services are hosted and managed on servers within an organisation's own facilities.
Colocation:	Organisations rent space for their servers and computing hardware in a third-party data centre, sharing the facility's power, cooling, and security while maintaining control over their own equipment.
Private Cloud:	Computing services are hosted on-premise or in a data centre for the exclusive use of a single organisation.
Hybrid Cloud:	An IT model that combines any mix of on-premise, colocation, private cloud, and public cloud.
Cloud First:	An organisation-wide policy, such as that of UK central government, whereby IT services should default to public cloud where possible.

Who took part in our research?

100

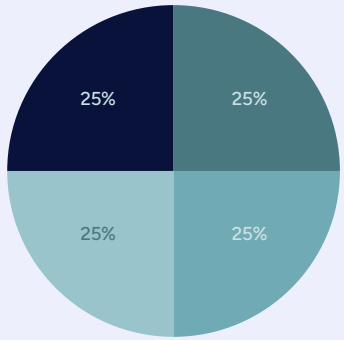
Senior IT Decision Makers

Organisation size (number of employees)



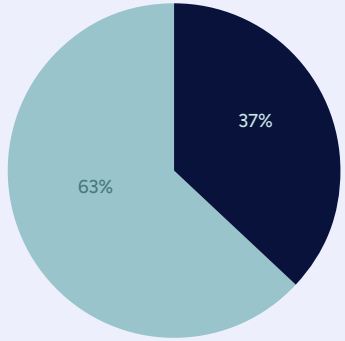
- 5,000
- 3,000-4,999
- 1,000-2,999
- 500-999
- 250-499

Industry



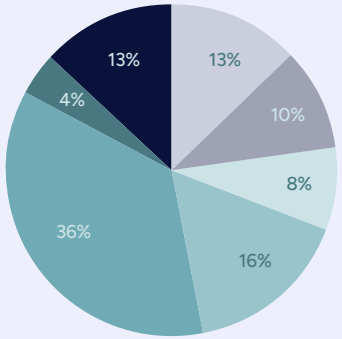
- Public sector
- Financial services
- Business and professional services
- IT, technology and telecoms incl. computer services

Seniority



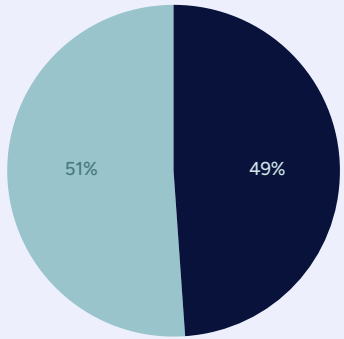
- Board member/C-level
- Senior management

Revenue



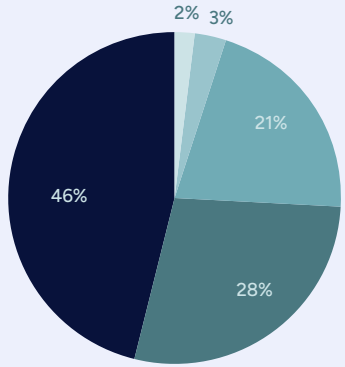
- 10.1-50bn
- 1.1-5bn
- 500.1m-1bn
- 250.1-£500m
- 100.1-250m
- 50.1-100m
- 25.1 - 50m

Approach to cloud



- Use public cloud for entire IT infrastructure
- Use a hybrid approach with public cloud playing a key role

Time in the public cloud



- 5 years or more
- 3-4 years
- 1-2 years
- 6 months – 1 year
- Up to 6 months

The cost of moving to the cloud

Our research began by asking IT decision makers to evaluate the financial success of their move to the public cloud. Over three quarters of organisations, 77%, said operating costs of the public cloud were more than expected (*Chart 1*), and 63% said overall costs were higher than their previous non-public cloud model (*Chart 2*). Furthermore, more than half - 57% - said the move to public cloud took longer than expected, with 21% saying it was significantly longer (*Chart 3*).

77%

of organisations said operating costs of the public cloud were more than expected

Chart 1

How do the operating costs of the public cloud compare to your organisation's original projections or expectations?

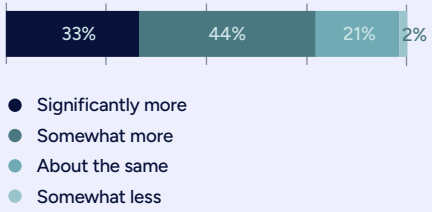


Chart 2

How does the overall cost of running services/ applications in the public cloud compare to your organisation's previous non-public cloud model?

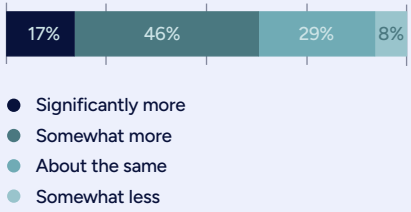
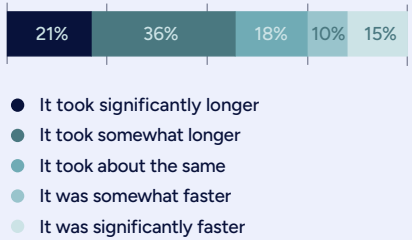


Chart 3

How did the timescales of moving your organisation's IT infrastructure to the public cloud compare to original projections or expectations?



> "[We faced] Unexpected expenses like data transfer fees"
>
> **Senior Manager**, Public Sector, *£500m-1bn, entire infrastructure hosted in cloud.*

Whilst the public cloud cost of entry is low due to zero upfront capex, the monthly costs of storage and data transfer can quickly add up as organisations scale. As early as 2021, investors at Andreessen Horowitz noted 'while cloud clearly delivers on its promise early on in a company's journey, the pressure it puts on margins can start to outweigh the benefits, as a company scales".

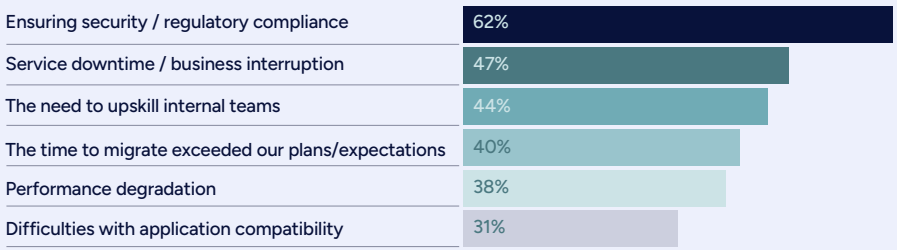
A notable example of calling time on public cloud for this very reason comes from software firm 37signals. According to its website, it spent $3.2m on the cloud in 2022, but has reduced this to $840,000 by moving its data to its own servers, hosted in a colocation facility, and is forecasting a saving of $7 million over five years.

> The *'high cloud cost'* was way more than we imagined"
>
> **C-Level**, Business Services, *£50-100m revenue, hybrid approach with significant public cloud.*

The problems along the way

The reason IT projects take longer and cost more than expected is usually due to problems that were not adequately identified or planned for. And indeed, a staggering 98% experienced issues with their migration. The top challenges related to security and regulatory compliance when data was moved to the cloud (*Chart 4*). Examples of such issues include the complexities of managing the storage locations of regulated data within the cloud provider's global servers, or configuring unfamiliar access and security controls.

Chart 4 What challenges did your organisation experience in migrating its IT infrastructure to the public cloud?



> Adapting organisational processes and culture to the cloud-based way of working was a significant challenge in migrating to public cloud"
>
> **Senior Manager**, Public Sector, *£500m-1bn, entire infrastructure hosted in cloud.*

> [It was a challenge] ensuring regulatory compliance and data security while moving to the public cloud"
>
> **C-Level**, Financial Services, *£100-250m revenue, entire infrastructure hosted in cloud.*

> Challenges included performance problems or outages that interfere with company operations"
>
> **C-Level**, Financial Services, *£500m-1bn, entire infrastructure hosted in cloud.*

> [There is] Risk and complexity associated with moving massive amounts of data to the cloud, including the possibility of corrupted or lost data, and associated penalties"
>
> **Senior Manager**, Business Services, *£50-100m revenue, entire infrastructure hosted in cloud.*

> We lost some valuable data in the process of migration"
>
> **C-Level**, Tech Industry, *£10-50bn revenue, hybrid approach with significant public cloud.*

> One of the biggest challenges was making sure that sensitive financial data was safe, and adhered to regulatory requirements."
>
> **Senior Manager**, Financial Services, *£50-100m revenue, entire infrastructure hosted in cloud.*

Other challenges related to compatibility and lower performance of applications when they were moved from on-premise servers and into the cloud. There are various reasons why this might be the case. Legacy applications are often built to run on older architectures, and so may not be optimised for – or even compatible with – public cloud environments. Some rely on software or use security protocols not supported by cloud providers. Many have complex interdependencies with other software applications that are disrupted in the move to a cloud architecture. All of this may require significant code changes (refactoring) and redefining of security policies, followed by extensive testing in the cloud.

Data may also need to be transformed to meet cloud formats, a complex process which creates opportunities for errors to be introduced, or for data to be lost or corrupted, which may in turn lead to fines. A number of our research cohort specifically mentioned this challenge in follow up questions.

And the whole IT setup is different in the cloud **– necessitating the development of different skillsets, which was highlighted as a challenge by 44% of respondents.** To take just one example, organisations need to move from expertise in server installation and configuration, to understanding cloud-specific services and managing virtual machines. Developing these new skills takes time, and can be overlooked in migration planning if the focus is primarily on technology.

98%

experienced issues with their migration to public cloud

Bringing applications back from the cloud

Having gone through a complex public cloud migration, one might expect organisations to feel pretty invested in the cloud. Yet even after all this hassle, nearly all, 91%, are bringing at least some applications back on-premise, showing that cloud simply isn't right for everything.

Chart 5 If you have since bought any applications out of the public cloud (repatriation) or are planning to do so, what contributed to your organisation making this decision?

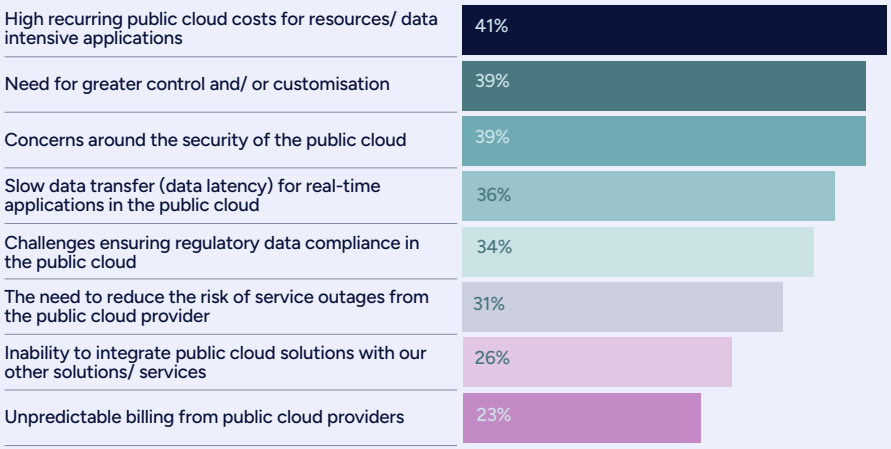
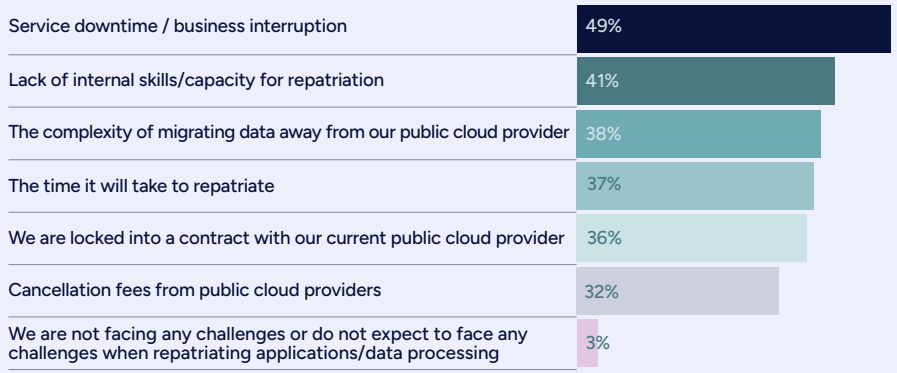


Chart 6 If your organisation has, or is planning to, repatriate applications/ data processing, what are the challenges your organisation is facing or expects to face



> "It was difficult and time consuming to integrate outdated systems with the new cloud architecture"
>
> **Senior Manager**, Business Services, *£250-500m revenue, entire infrastructure hosted in cloud*

> "It has been challenging for public clouds to maintain the processes and workflows the business needs"
>
> **Senior Manager**, Public Sector, *£500m-1bn, hybrid approach with significant public cloud*

The reasons mirror the initial challenges: high cloud costs for certain applications (41%), and the inability to adequately control/customise (39%), or integrate applications within the public cloud architecture (26%). Over a third were taking action out of concerns about security, regulatory compliance, and risk from server outages (*Chart 5*).

But of course, repatriation comes with its own set of challenges *(Chart 6*), from the complexity of moving applications back to servers (38%) to the inability to cancel agreements with cloud vendors that organisations are locked in to (36%). The technical challenges of putting things into the cloud also apply when taking them out.

For those yet to make the move to the cloud – or deciding where to put new applications – this is an important lesson: carefully assess which apps are better in the cloud, and which are better on your own servers, before you make commitments that are hard to get out of.

Will AI change the game for public cloud?

The growth of companies building their own AI applications – which can include such diverse tools as patient health monitoring, investment advice, and building energy use optimisation - may raise further questions around whether deploying applications in the cloud by default makes sense.

52%

said their organisation plans to use more on-premise or colocation data centres to host and deliver their AI applications

AI amplifies many of the issues raised earlier in this report – it requires vast amounts of data storage and processing which could bring enormous costs in a subscription model, it needs real-time responses which are more suited to local servers, and its training data is often sensitive which will make compliance hugely complicated and risky on globally distributed cloud servers.

36% cited the need for faster data transfer for real-time applications as a reason for leaving the cloud.

Our results suggest that this is indeed a growing concern. Of those repatriating applications, 36% cited the need for faster data transfer for real-time applications as a reason for leaving the cloud. What's more, when specifically asked about AI, 52% said their organisation plans to use more on-premise or colocation data centres to host and deliver their AI applications – no doubt recognising the benefits of local servers for processing large amount of sensitive data.

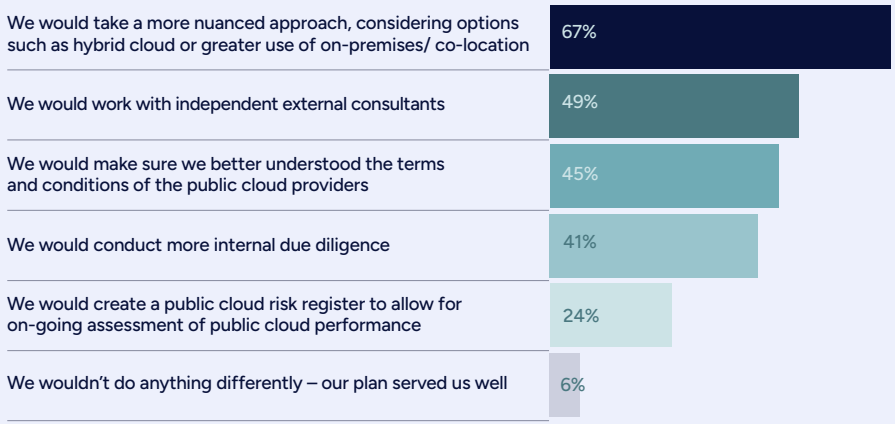
Lessons learned from the journey to the cloud

The findings from this research make the argument for a more nuanced approach to the public cloud. Indeed, two thirds (67%) of companies wished they had taken a hybrid approach which combined public cloud with their own IT infrastructure, and nearly half wished they had done more due diligence and taken more time to understand the cloud providers Ts&Cs (*Chart 7*).

67%

of companies wished they had taken a hybrid approach which combined public cloud with their own IT infrastructure

Chart 7 If your organisation was able to start its public cloud migration process over again, what, if anything, would your organisation do differently?



> "The amount of time it took compared to the estimates is one challenge that comes to mind"
>
> **Senior Manager**, Financial Services, *£1-5bn revenue, hybrid approach with significant public cloud.*

> "We faced unexpected expenses and budget overruns as a result of inaccurate cost projections"
>
> **Senior Manager**, Financial Services, *£100-250m revenue, entire infrastructure hosted in cloud*

There is a clear sense from the responses that planning should have been more rigorous – **only 6% said their plan served them well, meaning 94% wish they had done things differently.**

Taken together, all of this suggests that – whilst people were not unhappy with the cloud – they wish they had kept more applications in their own IT architecture. And perhaps more importantly, they wish they had planned better before taking the leap into the cloud. That is partly about thinking through the right mix of public cloud, private cloud, on-premise IT, and collocation. But it's also about setting themselves up to perform ongoing assessments and make changes where necessary.

Conclusion

What is clear from our research is that most organisations would benefit from taking a hybrid approach to their IT infrastructure.

Public cloud will remain well suited to many use cases, from off-the-shelf productivity tools, to web applications with fluctuating traffic, to spinning up temporary product development environments. On-premise/colocation may be better for bespoke applications which involve proprietary R&D data, need lots or processing power and low latency, or for legacy applications that are designed to work on specific IT architectures.

If there is one takeaway from our research, it is this: plan properly and build in flexibility.

Organisations that wish to do more on their own terms, away from the public cloud, have several options. Organisations with limited computing needs can host servers on their premises, whilst those with more intensive requirements could build and run their own data facilities on site, or at nearby sites, if CAPEX budgets and power availability on site allow. Either can also rent managed/dedicated servers at a local data centre (private cloud), though this can also be costly and cedes some control over their servers. Or they can purchase space in a colocation data centre, where they bring their own servers, and the provider handles everything they need such as physical security, network, power and cooling, supported by Service Level Agreements (SLA's) which offer assurances around uptime and support. These options can all be combined with the public cloud, creating a hybrid hosting solution which delivers the best of all worlds.

Some applications work in the cloud, and some don't. Organisations should work out which mix of cloud and on-premise/colocation is right for them, and invest accordingly. There is no single 'right path' – everyone's journey will be different depending on their needs, and this may change over time as new technologies, like AI, change the calculus.

If there is one takeaway from our research, it is this: plan properly and build in flexibility. Do a thorough evaluation of your existing IT infrastructure to determine what the right solution looks like for your organisation – ideally working with independent experts who have no vested interests. Define what is best in the cloud, and what is best in your own infrastructure, then build a roadmap accordingly. Acknowledge that things may change as you scale and build in checks and processes – and contract terms – that make it easy to adapt when necessary.

About Asanti

Asanti is a data centre colocation provider, created by a team who has over 125 years' industry experience designing, deploying and managing data centres.

We currently operate six UK wide data centres, the locations of which have been strategically chosen based on excellent network coverage and power availability. Their paired locations also make them excellent business-live and disaster recovery options for critical IT infrastructure. **Each location is backed by a 100% uptime SLA and powered by 100% certified green energy.**

Our commitment to innovation means that our secure data centres are optimised for performance, making them ready to host solutions for a range of sectors. Whether those business needs are for traditional IT infrastructure or hybrid cloud solutions.

Flexibility is a key part of what we do, that's why we offer fixed fee as well as PAYG commercial models for both power and connectivity, enabling businesses to explore opportunities to reduce OPEX and deliver more predictable costs.

We are Asanti, and we are purpose built to deliver leading edge data centre solutions to the businesses of today, and tomorrow.

Methodology

Our research was conducted with research company Vanson Bourne in July 2024. The cohort was made up of 100 respondents, of whom 37 were Board member/C-level, and 63 were Senior management. They came from the public sector, including healthcare, and private financial and professional services. All respondents worked for organisations with over 250 employees and £25m in annual revenue.

Of those, 49% hosted their entire IT infrastructure in the public cloud, and 51% used a hybrid approach with public cloud playing a key role. Those with no or minimal public cloud were excluded to ensure the research reflected the views of those with direct experience of the public cloud. All respondents had been using the public cloud for at least six months, with 95% using it for over a year, and three quarters for more than three years.

52% said their organisation plans to use more on-premise or colocation data centres to host and deliver their AI applications