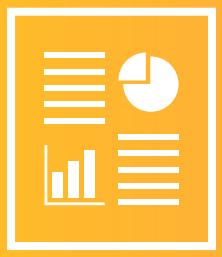


Research Report

FREEFORM DYNAMICS

in association

vmware®

From multiple clouds to multi-cloud

Time to strengthen your cloud operating model

Key Takeaways

Cloud past, present and future

The acceleration of cloud service adoption in response to the Covid-19 pandemic has been widely reported. Less well covered has been the concurrent 'cloudification' of enterprise datacenters, and the growing use of on-premises clouds. The truth is that IT teams did whatever they needed to in order to move quickly, exploiting any and all relevant options available to them. But as they pulled out all of the stops to achieve incredible things over a short space of time, activity wasn't always as well coordinated as it could have been. The imperative now is to address any resulting disjoints and inefficiencies, while laying strong foundations for a multi-cloud future. Against this background, the research summarized below highlights that those with a stronger set of cloud operating model capabilities are, on average, already gaining a significant advantage over their mainstream peers.

01

Recently accelerated cloud adoption is set to continue

When 774 IT leaders were asked about the impact of the Covid-19 pandemic on their their use of cloud platforms and services, 85% said adoption rates had accelerated. As we look forward, growth is set to continue, as cloud is prioritized for new workloads and legacy applications are migrated.

02

The next big shift is from multiple clouds to multi-cloud

Rapid response to the pandemic aggravated the problem of piecemeal cloud adoption that had already been building. As a result, many are now sitting on diverse cloud estates that are hard and inefficient to manage. The imperative now is to shift to a more coherent 'multi-cloud' approach.

03

But readiness for multi-cloud varies considerably

Success with multi-cloud requires a joined up approach that considers financial, application, and people/skills requirements, as well as process and technology. In effect, you need what some call a 'cloud operating model', but fewer than one in ten IT teams claim to have what's necessary in place.

04

Those who have made progress are reaping the rewards

A group of 'multi-cloud leaders' - the top 25% of our study sample based on a range of multi-cloud readiness indicators - are convincingly outperforming their mainstream peers in areas such as visibility, efficiency, risk management and the unlocking of business advantage from their cloud investments.

05

Moving forward with confidence

Technology is key, and thinking in terms of a multi-cloud control plane is useful here. Given the multi-faceted nature of multi-cloud, however, an inclusive approach to defining requirements is also necessary that deals with the needs and wants of business people, developers and application teams.

Cloud momentum set to continue

Acceleration of an existing trend

It's hardly news that many IT teams accelerated their adoption of cloud platforms and services during the recent healthcare crisis. Indeed, 85% of the 774 IT leaders taking part in a global cross-industry survey completed in May 2022 confirmed this was part of their response to the Covid-19 pandemic. The truth, however, is that the trend towards increased use of public cloud services and the 'cloudification' of on-premises infrastructure was already well underway, as was the growing need to mix and match different clouds and platforms. And as the world starts to get back to 'normal', the cloud habit is clearly set to continue.

85%

Saw adoption of cloud platforms accelerate during the pandemic

How much of a role do the following play in your IT activities and plans?

Traditional on-premises (or privately hosted) infrastructure

94% Report significant use

↑ 26% ↔ 41% ↓ 27%

Cloud-style on-premises (or privately hosted) infrastructure

91% Report significant use

↑ 45% ↔ 38% ↓ 8%

Public cloud infrastructure and/or platform level services

92% Report significant use

↑ 44% ↔ 36% ↓ 12%

↑ Growing
↔ Steady
↓ Declining

The ability to mix and match clouds and platforms (multi-cloud)

87% Report significant use

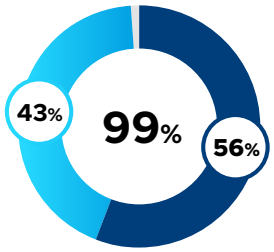
↑ 41% ↔ 39% ↓ 7%

In addition to the numbers shown, around 9% declared limited but growing multi-cloud adoption

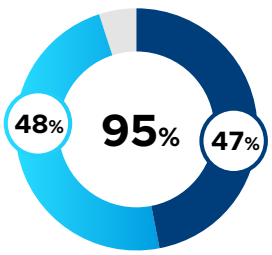
So is it just a case of full speed ahead?

While this all looks very positive, the significant increase we've seen in the pace of cloud adoption does raise the question of how well IT teams are geared up for future activity. After all, when you're up against it and having to make rapid decisions to deal with immediate needs, there's not always time to consider longer-term consequences.

How much do the following apply to your organization?



We prioritize the use of cloud platforms for new applications



We are proactively migrating legacy apps to cloud platforms

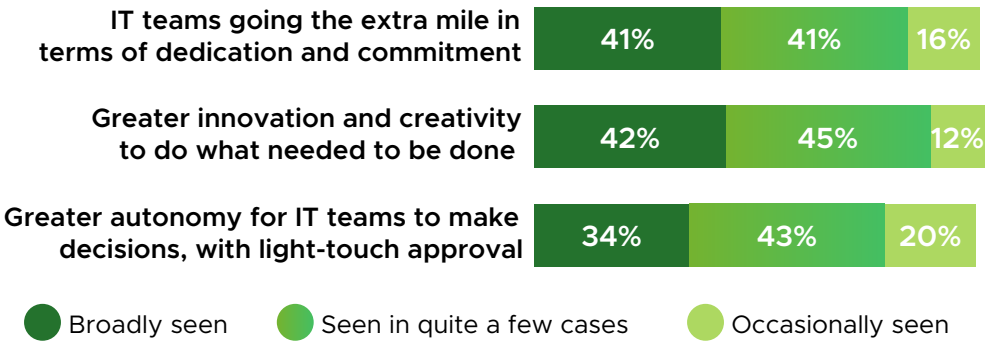
Fully applies
Partially applies

Time to take a step back

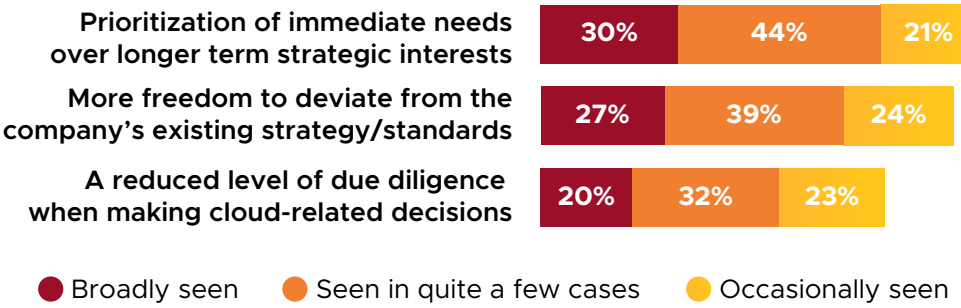
The pandemic represented a double-edged sword for cloud adoption

Accelerated cloud adoption over the past couple of years went hand-in-hand with IT teams really stepping up to deal with an urgent set of challenges. So many IT pros took the initiative and did what was necessary, often in very creative and innovative ways. The greater autonomy they enjoyed allowed them to move quickly, which in turn enabled many businesses to pivot to things like home working and digital customer engagement almost overnight. But the flip-side of all this was frequently an unavoidable deviation from controls and standards, and a degree of disruption to cloud-related strategies and plans.

How much have you seen the following in relation to your use of cloud over the past two years?



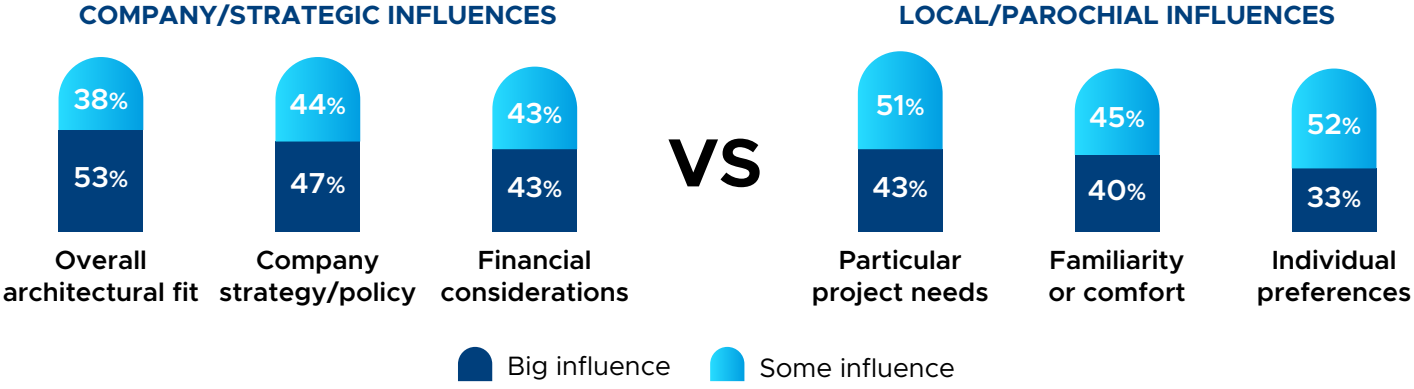
How much have you seen the following in relation to your use of cloud over the past two years?



4 in 5 have seen at least some disruption to their cloud strategy, roadmaps and plans

If you recognize this picture and are working to get things back on track, however, aiming to revert to how things were immediately pre-pandemic may be a mistake. The truth is that a tussle between opposing pulls was already ongoing, e.g. teams making decisions based on personal preference or familiarity often worked against higher-level strategic, architectural and financial interests.

How much have these influenced cloud-related decisions in your company to date?

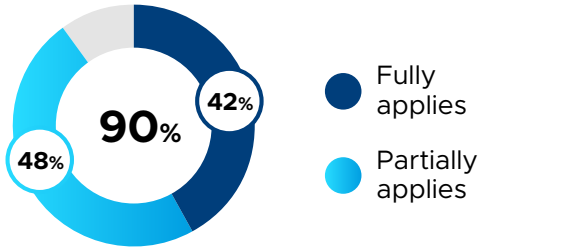


From multiple clouds to multi-cloud

Cloud platform and service proliferation

As a result of a genuine diversity of needs, along with the adoption behavior and associated compromises we've been discussing, the majority of IT teams acknowledge the way in which cloud platforms and services have proliferated over time. This isn't necessarily an issue if you have a good view of what's in place and how well it's working, and are able to manage service levels, costs, overheads and risks effectively. But how well are such requirements covered in practice?

How much does the following apply?

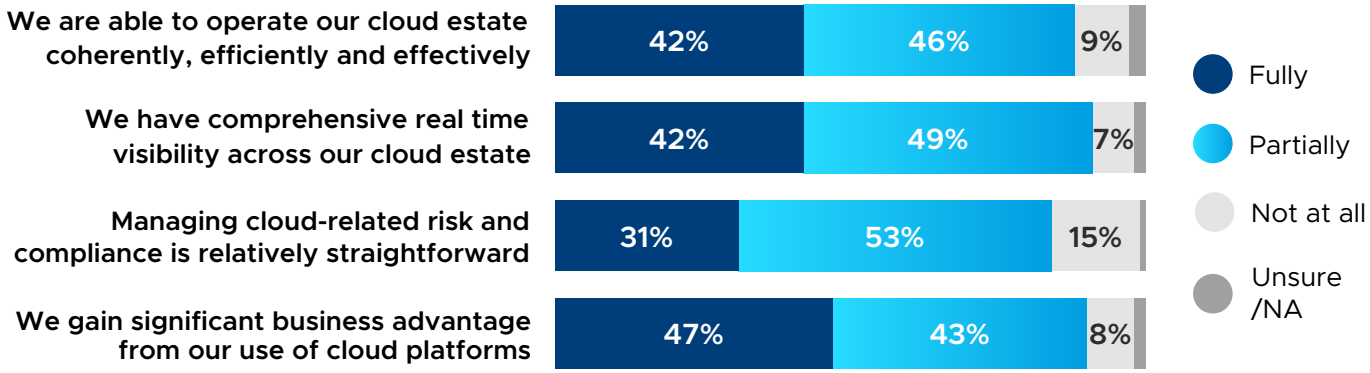


We have now accumulated a large number of cloud platforms and services

A mixed picture

While many participating in our study expressed confidence in their ability to operate and manage their cloud estate effectively, others were less certain. And the same can be said about the level of business advantage they enjoy from their use of cloud platforms.

How much do the following apply to your organization?



Charts like these that summarize responses across a large data set can be useful to form a high-level view, but they don't reveal the multitude of stories that go to make them up.

Some IT teams are great at managing risk, for example, but at the expense of efficiency, and the opposite is true for others. There are then examples of companies that have prioritized shorter-term business advantage without worrying too much about longer-term consequences, which is reflected in their responses. We also saw indications of this in some of the data presented earlier.

Of course, in an ideal world, you would be reporting good results across all four of the outcome categories shown above (and others for which these are proxies), which it could be argued represents the difference between an effective multi-cloud approach and simply using multiple clouds. With this in mind, it's notable that fewer than 1 in 10 organizations checked 'Fully applies' across the board.

FEWER than 1 in 10 checked **'Fully applies'** across the board

Improving on this situation requires thinking holistically, and we'll come onto that shortly. Before we get to this, however, it's worth reviewing some of the latest ideas in cloud management fundamentals as it's helpful to understand the tools we have to work with nowadays.

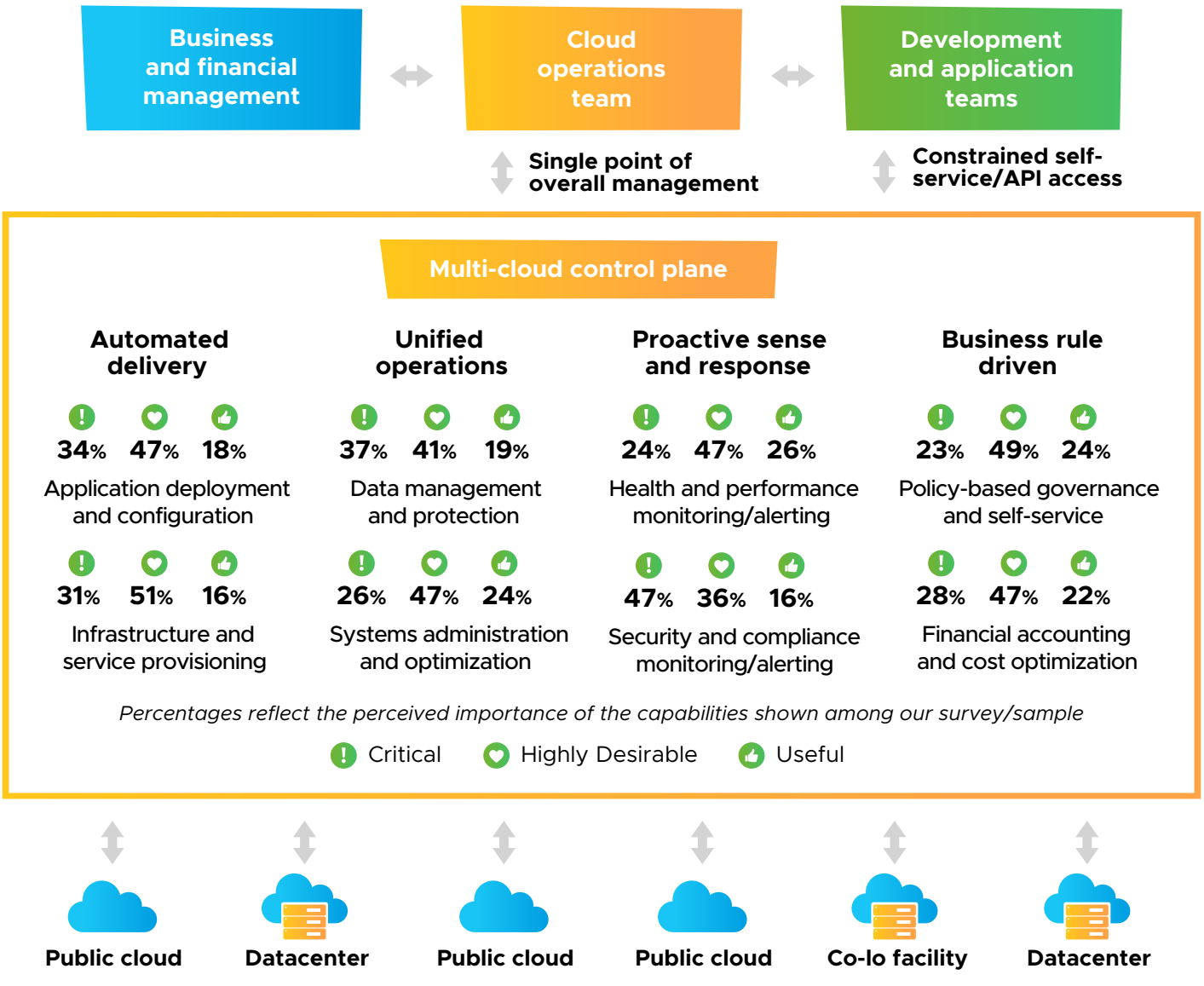
Latest ideas in cloud management

The concept of a multi-cloud control plane

A significant contributor to the visibility, efficiency and control issues we have just been discussing is the fact that every cloud platform and service comes with its own set of native admin facilities. If you solely rely on these, you can easily become overwhelmed by complexity and inconsistency as your multi-cloud estate grows and diversifies, especially if multiple teams are doing their own thing.

In response to this, solutions have emerged that enable you to put a 'control plane' in place that sits over all of the on-premises clouds and and public cloud services you use. Core functions are then abstracted so key aspects of delivery, operations, monitoring and governance can be dealt with in a unified and consistent manner. Cloud operations teams can then maintain order and efficiency, while development and application teams gain easy and convenient access to the resources they need, e.g. through self-service portals or API calls embedded in automation scripts (with policies enforced along the way). An effective control plane will also enable operational staff to provide business and financial managers with a holistic view of costs, service levels and other key metrics.

The schematic below provides a visual overview of the approach, along with data points confirming the importance of specific control plane functions based on responses from our study participants.



Plotting the right way forward

You can't just buy success

It would be nice to think that all of the challenges we have been discussing could be addressed by simply putting the right technology in place. Indeed, there's no shortage of suppliers offering 'magic bullet' solutions in this space. These are frequently referred to as 'hybrid-cloud', 'multi-cloud' or even 'hybrid/multi-cloud' platforms, and the implication is often that you need to invest in a whole new solution category to achieve success. It's an understandable tactic for technology marketing and sales people to use as they seek to sell you more and enhance their leverage in your organization, but this is unlikely to be the best way for you to think about it as the customer.

Earlier on, we deliberately referred to the 'control-plane' concept as an 'approach' rather than a solution for a couple of reasons. Firstly, while integrated platforms are available from vendors like VMware to cover many (if not most) of your likely requirements, other solutions may be needed to fill remaining functional gaps, e.g. in areas such as enhanced data management and protection.

The second reason not think in terms of a solution category is because the chances are that you already have at least some of the components you need in place. This will especially be true if your existing virtualization environment is relatively up to date. Platforms in this space have supported the creation of private clouds for quite a while now, with ongoing evolution to embrace hybrid-cloud and multi-cloud requirements to varying degrees depending on the supplier.

With these points in mind, our advice is therefore to review what you have, identify the gaps, and explore the options available to extend or add capabilities before looking for a whole new solution.

None of the above means there isn't value in speaking with suppliers about their bigger-picture visions and propositions as this can help you get your thoughts straight. You do, however, need to develop your own view of what the bigger picture should look like in a way that makes sense in the context of your organization and its priorities.

Developing your own big-picture view

A good place to start is to think in terms of a cloud operating model, within which you can consider everything that impacts success as you blend different cloud options in a way that's effective, manageable, safe and efficient. This inevitably takes the discussion beyond technology.

Creating harmony and coherency, for example, will involve reviewing and often transforming the way in which development, application and operations teams work both individually and together. Responsibilities, workflows and lines of demarcation may change, new skills may be required, with cultural and mindset adjustments made where necessary.

But you can only make decisions around people, processes and technology if you have clear view of what you're trying to achieve. The hub for any operating model is therefore a central overall strategy, layered so you can drill into more detailed areas. Examples here include financial strategy (to optimize costs and value for money), cloud strategy (to optimize your mix of platforms and services, and how your estate is operated), and application strategy (to define workload placement policy, migration plans, etc).

Example Cloud Operating Model

Based on a straw-man used by VMware, our research sponsor, though typical in scope to the alternatives increasingly presented and discussed across the industry.

Reviewing current capability

The readiness perspective

One of the challenges when conducting research, especially in the IT industry, is making sure the terminology you use is properly and consistently understood by those participating. When designing this particular study, we therefore avoided the term 'operating model' as we knew there was a risk of it being interpreted in different ways by different respondents. Instead we framed questions around the concept of readiness for a multi-cloud future, touching on each operating model element individually, with explanatory notes to avoid ambiguity and confusion as much as possible. This allowed us to assimilate a more reliable view of how close respondents were to having a strong and comprehensive operating model in place to address current and future needs.

Multi-cloud readiness

Building a coherent operating model

Overall strategy
39% 48% 13% 0%
Objectives, systems modernization and migration roadmap, ESG, etc

Financial strategy
29% 47% 23% 1%
Governance, modeling, tracking, reporting, charge-back, etc

IT team capabilities
38% 40% 22% 0%
Technical skills, soft skills, training and development plans, etc

Cloud ops strategy
36% 42% 21% 1%
Workload/data placement, service delivery KPIs/controls, etc

Process framework
29% 46% 23% 1%
Business alignment, DevOps cycle, service management, etc

Application strategy
33% 50% 16% 1%
Architecture, standards, integration, security models, etc

Enabling technology
35% 46% 18% 1%
Platforms, services, monitoring and management tools, etc

Strong and future proof | OK for now | Lacking or falling short | Don't know

Readiness assessment

As before, the stories and patterns behind these summary level numbers vary considerably, with only 2% of respondents claiming to be 'Strong and future proof' across the board. To put this another way, only 1 in 50 said they had everything needed in place for a comprehensive operating model.

The obvious next question is how much any of this matters, and the short answer is 'a lot'. The closer you are to full multi-cloud readiness based on our operating model framework, the more likely you are to be achieving success. Let's take a look.

ONLY 2%

Claimed to be **'Strong and future proof'** across the board

The proof of the pudding

The multi-cloud readiness advantage

While relatively few organizations exhibit full multi-cloud readiness, some very useful insights emerge when we group study participants according to their overall readiness scores. During our analysis, we pooled the highest scoring 25% of respondents into a segment we labeled 'multi-cloud leaders' - essentially the cream of our sample from a readiness perspective.

Convert survey responses to numeric values then group respondents according to their total scores

Multi-cloud leaders

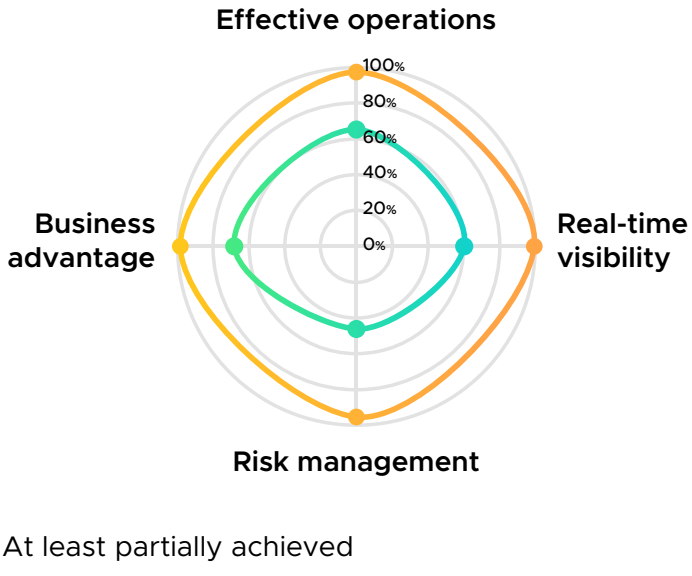
25% of overall sample

Mainstream group

75% of overall sample

From here we were able to look at how our leader group differed from the mainstream in relation to the outcome indicators we highlighted earlier (descriptions have been abbreviated for clarity).

Mainstream group **The multi-cloud readiness advantage** **Multi-cloud leaders**



Fully achieved At least partially achieved

The greater the area within the outer (yellow/orange) curve, the broader the scope of achievement. The green curve then illustrates the proportion of respondents within each group that claim achievement at the highest level. This representation allows us to see straight away that our multi-cloud leaders are much more likely to be achieving good outcomes. The other important observation from this graphic is that visibility and risk management are the two areas in which least readiness exists, even within our leader group. This is not surprising given how these are related.

Overall though, it's pretty clear that organizations with a stronger set of cloud operating model capabilities are, on average, already gaining a significant advantage over their mainstream peers.

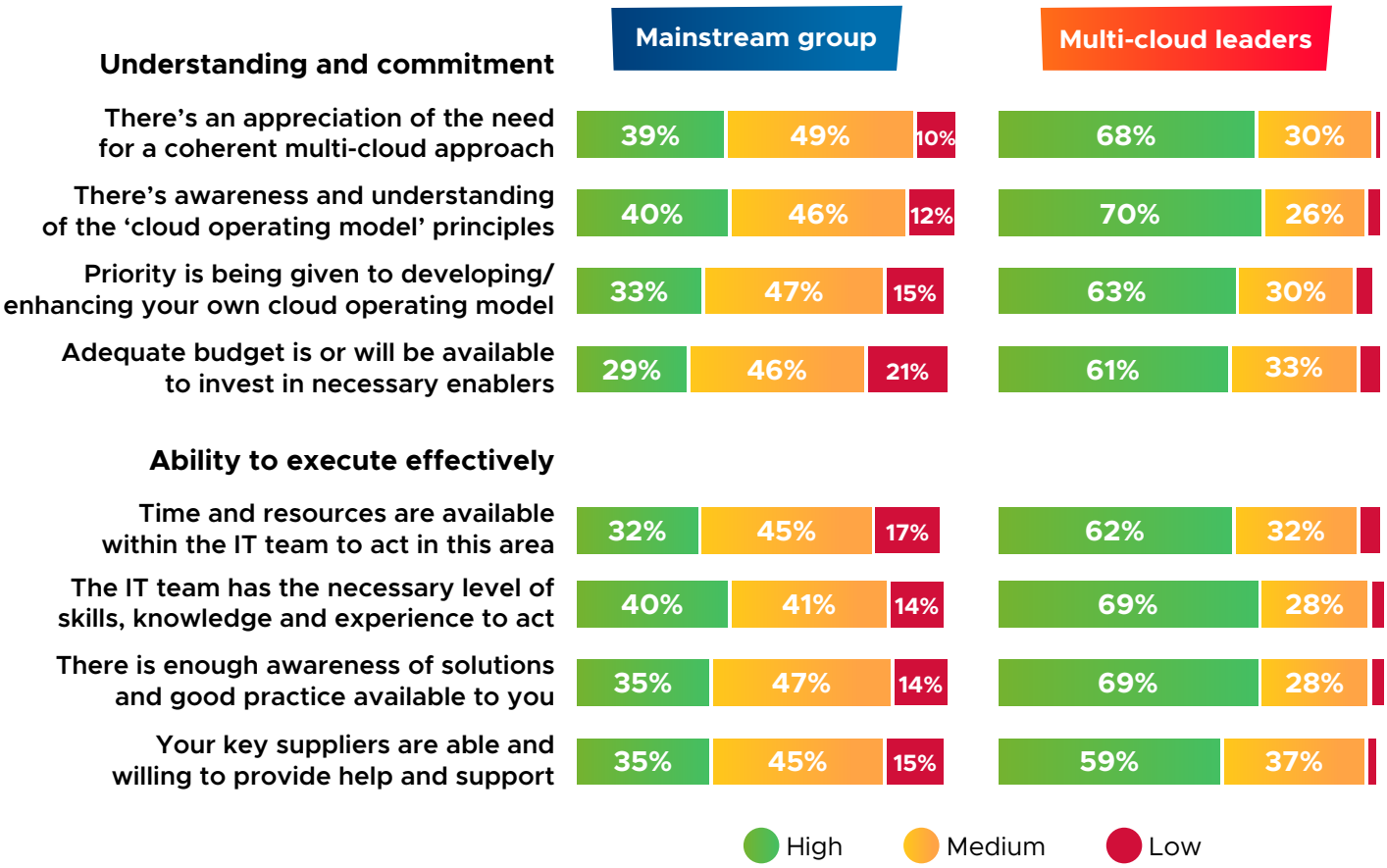
Moving forward with confidence

You need to get everyone on board

Zooming back out to the bigger picture, it's critical to recognize that the broader multi-cloud discussion needs to be an inclusive one, and not just based on the needs and wants of the cloud operations team. This is why your cloud operating model has to embrace the business, financial, skills, process and application elements of your overall strategy. It's also why the practical aspects of cost, risk and delivery management need to be part of your multi-cloud control plane.

With this in mind, objectives will be more meaningful, commitment higher and the chances of success greater if business and financial stakeholders are involved, along with development, DevOps and application teams. The overarching objective is to get everyone on board and to cover all interests, and it's probably no coincidence multi-cloud leaders are ahead of the game here.

Thinking about your organization and those involved in its decision making, how confident are you in the following?



Working with partners

The items listed above under 'Ability to execute effectively' are clearly related. When you're short on time, skills and awareness of best practices, it makes sense to look for help from partners. Beyond offering technology-based solutions and services, suppliers can often contribute education and insights based on their experience working with many customers. This can be invaluable when you're looking to enhance understanding and commitment among your various stakeholders, and when developing your ability to execute. Confidence in suppliers is far from universal, however, not least because even now, many IT vendors are still on a steep learning curve in the multi-cloud space. Some also have a narrow focus on what they are able to deliver, which makes them less useful than partners who bring a big-picture perspective if you are seeking more strategic advice.

Final Thoughts

It's totally understandable how we got to where we are

Even before the recent flurry of increased cloud adoption, many IT teams were aware of a creeping set of problems associated with the piecemeal adoption of cloud. As project and application teams diverged with respect to the cloud platforms and public cloud services they chose to use, it became harder to keep track of what was in place and to manage the overall cloud estate effectively. Accelerated activity in response to the pandemic then aggravated the situation for many.

Against this background we've heard criticism of IT teams for shortsightedness and the way they've allowed operational overheads, costs and risks to escalate, but such views are both unhelpful and unfair. A significant contributor to cloud platform and service proliferation and divergence is the way in which supplier offerings evolved so rapidly. From features and functions, through pricing and contract terms, to the breadth and richness of cloud ecosystems, we've seen a lot of change. Put this together with constantly evolving business and application requirements and the disruption of the past two years, and it's unreasonable to have expected any organization to have defined and stuck with a fixed set of cloud options.

Readiness for the future starts with a clear set of objectives

Given that the market is still far from mature, and ongoing business uncertainty is now part of the new normal, it makes little sense to assume that your organization will ever be able to settle on a fixed set of platforms and services. Sure, you should look for opportunities to consolidate and rationalize, and set some standards and defaults, but too much constraint will close down opportunities and could put your organization at a competitive disadvantage.

As an example, if an alternative provider to the one you're currently using in a particular area introduces a new set of new game-changing capabilities, you'll want the ability to make a switch with minimal cost and disruption. And there will be lots of other reasons to switch clouds over time, such as applications evolving in unexpected ways, providers updating their pricing models and fees, or governments making regulatory changes that impact data sovereignty requirements.

The objective is therefore not to standardize and lock down, but to create an environment in which on-premises cloud platforms and public cloud services can be mixed, match and switched with relative ease while maintaining visibility and manageability, and controlling costs and risks.

You already have an operating model, but it probably needs strengthening

The term 'operating model' can sound a bit grand or theoretical - the kind of thing an expensive management consultant might advocate. But the reality is that whatever you call it, you already have a set of conventions in place for how you exploit the various cloud options available to you. Even if it boils down to a free-for-all in which developers and others grab whatever technology and resources they need when they need them, and you periodically review things when someone screams about costs or something bad happens, that's a model of sorts. More likely, as the research data shows, you probably have controls, tools and procedures in place, but their strength varies.

If this sounds familiar, we hope the stylized operating model we have presented in this report, and examples of functionality you might include in a cloud control plane, will provide you with a starting point to stand back and review your own readiness for a multi-cloud future.

Focus on principles, and what's right for you

The last thought we'll leave you with is that the language and terminology used by you, your suppliers and your advisors are secondary to the core principles we have been discussing - think holistically, and act in a proactive and inclusive manner to create an environment that strikes the right balance between control and flexibility. What that means for you is down to you to decide. What's most important is to embrace the principles of multi-cloud and start to live by them.

Further information

About the research

The research upon which this report is based was designed and executed by Freeform Dynamics with sponsorship from VMware. Data was gathered from 774 IT leaders working in medium to large sized organizations (minimum 500 employees) across 10 countries (USA, Canada, UK, France, Germany, Italy, Spain, Australia, Japan and Singapore). Participants were drawn from a cross section of private sector industries and the study was completed in May 2022.

About Freeform Dynamics

Freeform Dynamics is an IT industry analyst firm. Through our research and insights, we help busy IT and business professionals get up to speed on the latest technology developments and make better-informed decisions.

For more information, visit www.freeformdynamics.com.

About VMware

VMware is a leading provider of multi-cloud services for all apps, enabling digital innovation with enterprise control.

The VMware Cloud Operating Model is a framework that binds your business application and cloud strategies together to accelerate agility, optimize performance, and control your multi-cloud environment. It brings people, process, and technology together for consistent service delivery, operations, and governance wherever workloads reside, for today and the future.

For more information, please see: vmware.com/cloud-solutions/multi-cloud-ops.