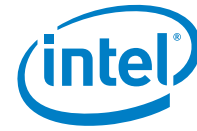


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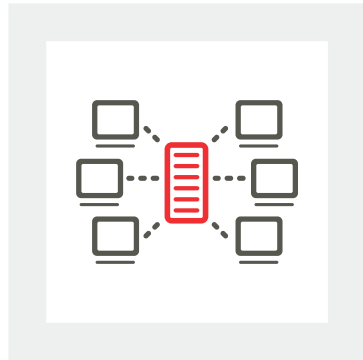
FUJITSU

The state of orchestration: 2017

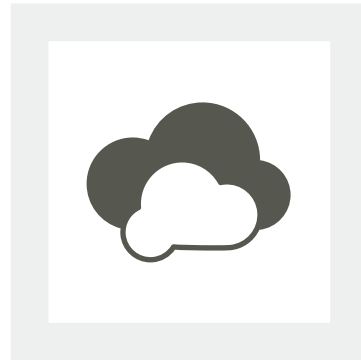
A market report



shaping tomorrow with you



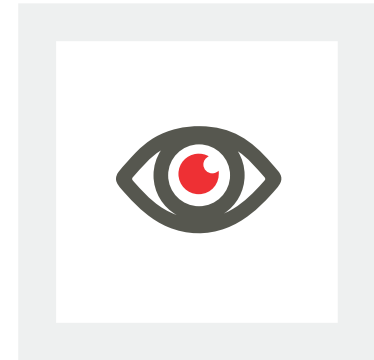
1 Control



2 Appetite
for cloud
orchestration



3 Looking
ahead



4 Conclusion

Executive summary

In 2016, a Fujitsu white paper identified that Hybrid IT—the mix of public, private and managed cloud with traditional and legacy—was ready to become the new norm. Analysts suggested that almost half of large enterprises would have hybrid cloud deployments by the end of 2017. Despite this, enterprises were missing a trick. Few of them were actually doing anything about orchestration, which meant they weren't yet able to take full advantage of the benefits of Hybrid IT. This research report assesses the degree to which this has changed.

Cloud orchestration is used to manage an organization's cloud services. It includes everything from service management, down to the technology layer, providing governance, visibility and control of all services against changing business needs.

Its key findings reinforce the sense that enterprises are—if not ready, at least willing—to take this next step. However, complexity makes it hard for them to do so, with around **55%** feeling that their cloud estate is too complex to manage. Other challenges include security, lack of visibility, integration of cloud services, management of costs, failure of governance and compliance.

In addition, the businesses that we spoke to suggest that there's a tendency to be reactive rather than proactive. With its six key pillars—service, supplier, security, process, compliance and technical—however, orchestration could well prove to be the answer. The barriers that enterprises face in its adoption (choosing the most appropriate vendor (**64%**) and cost implications (**53%**)) appear to be easily surmountable.





71%

see cloud as core in the delivery of services to customers.



79%

want to move workloads between clouds more easily.



92%

either have plans to adopt cloud orchestration within the next 24 months or already use it.

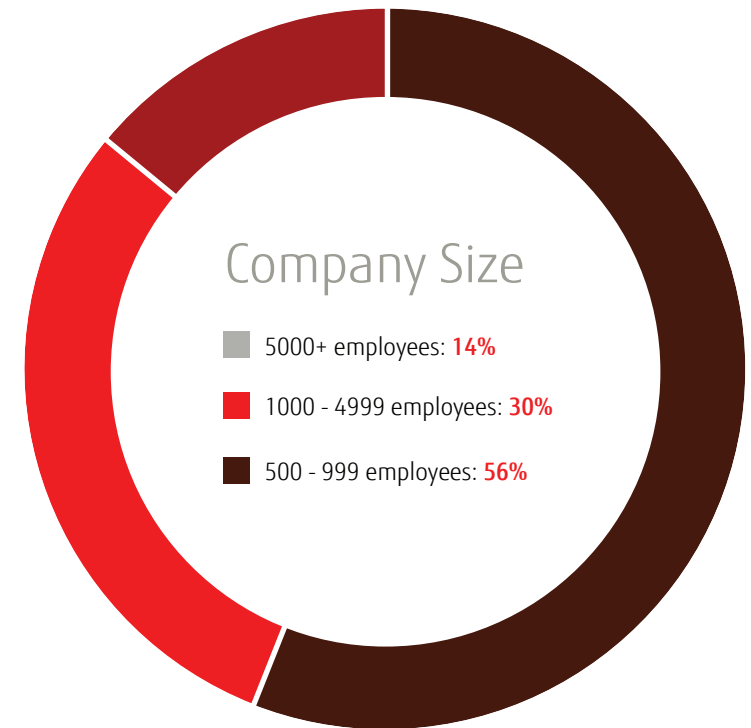
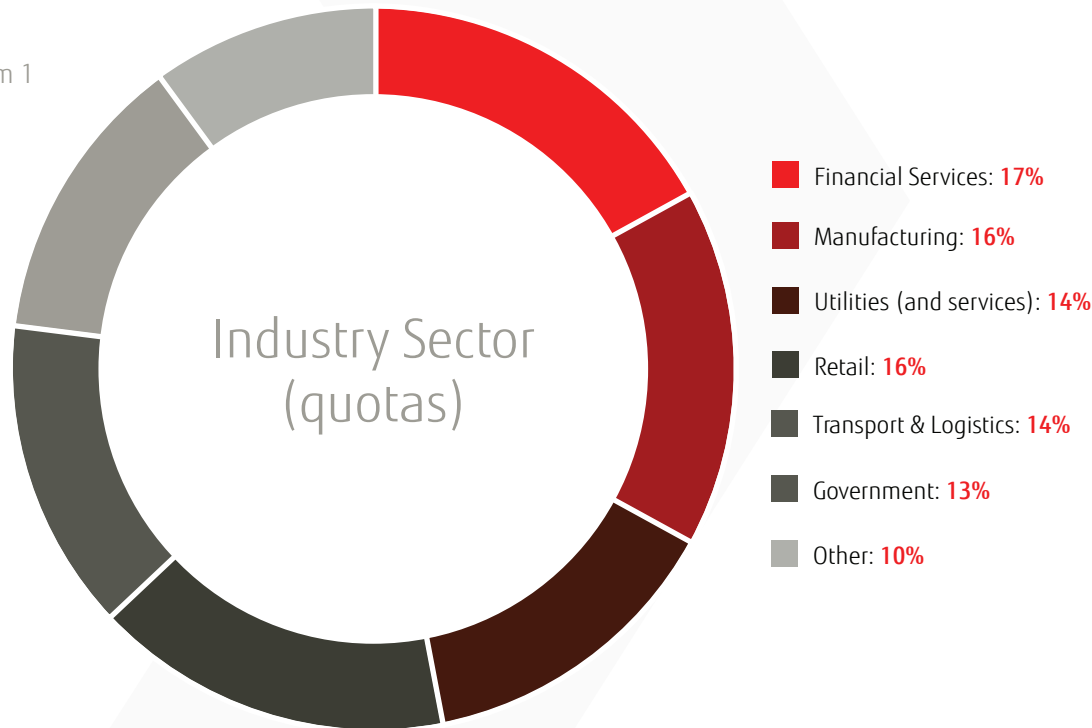
Managing the cloud estate in the form of visibility/control (**59%**) and improved governance (**48%**), and digital transformation (**71%**) are among the key reasons for having orchestration.

This research took place during 2017. **302** IT respondents took part, with responsibility for decisions around IT infrastructure and cloud. These represented organizations with **500+** employees across target sectors.

Participants were from the following locations: UK, US, Australia, Finland, Spain, Germany. There were **50** participants from each of the locations, except for the UK and US, each of which had **51** participants.

The breakdown of participants is shown in Diagram 1.

Diagram 1



1

Control

It doesn't matter whether customers are internal or external. They all expect a seamless digital experience. If an enterprise can't deliver against that expectation, it runs the risks of suffering significant damage to its brand and losing customers. Internally, it can affect morale and productivity.

Being able to manage a Hybrid IT architecture is an important factor in achieving an enterprise's business outcomes. A typical hybrid composition is shown in the responses to the questions asked in Diagram 2. But it's not the only complex game in town. Enterprises recognize that they have a number of management challenges to face, and as Diagram 3 shows, a consistent number (**42-45%**) see each of these as very important.

Typically, they have a choice of significantly more suppliers than before—in some cases more than a hundred vendors. This turns what should be a relatively straightforward task—managing contracts and relationships—into a complex and demanding nightmare. Often, too, it's easy for individual business units or individuals to acquire cloud-based solutions and resources. As a result, they quickly create their own shadow IT. This exacerbates the situation. Keeping the lid on such diversity is a real challenge.

As a result, IT has lost a lot of the control it expected from the hybrid model. Other issues were highlighted in the responses shown in Diagram 4, which looked at overall attitudes, and these are discussed in more detail below. For many companies, the six pillars of orchestration—service, supplier, security, process, compliance and technical—offer the chance to cut complexity and regain control. With this, the enterprise can find that its Hybrid IT ecosystem once again works in harmony.



Placing the research in context:

As the responses in Diagram 2 show, the majority of countries have a similar balance between public, private and hybrid cloud. The notable exception is Australia, which is far more likely to have private cloud at present (42%) and less likely to have a hybrid cloud environment (26%). The research suggests that this gap will not narrow significantly over the next two years.

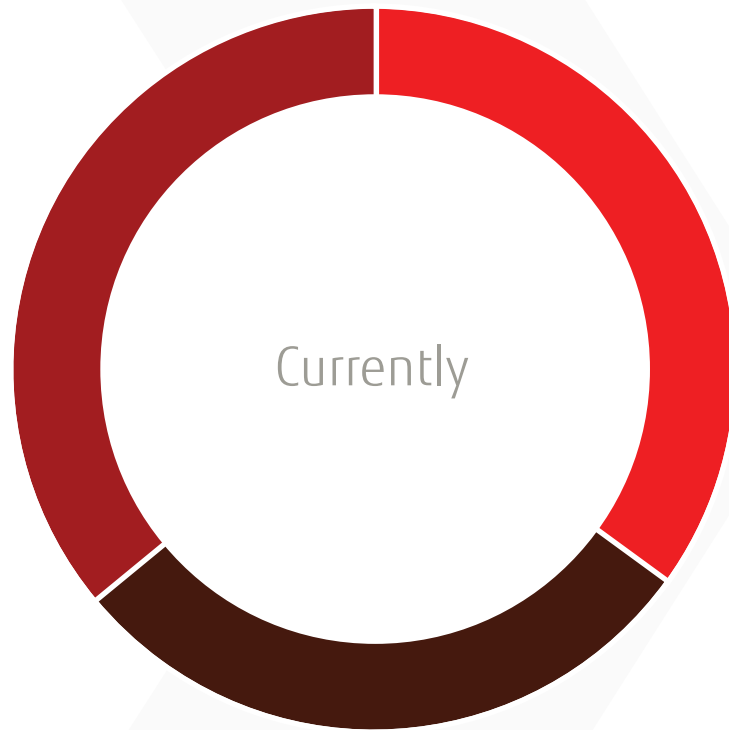
While most countries show consistency in their ranking of importance, Spain (22%) and Finland (30%) show in their answers to the question asked in Diagram 3 that they place less importance on their ability to manage hybrid architecture. At 34%—8 percentage points below the next ranked country—the latter also has a lower percentage of interviewees with a cloud only/cloud first strategy.

This could be because organizations based in these two countries are adopting a single platform strategy—in other words, they are focusing on using a single cloud platform such as Azure or AWS, rather than trying to accommodate a multi-platform, multi-provider, multi-technology strategy. This interpretation correlates with the answers given in Diagram 4 for workload portability: while the US (85%) places a high emphasis on being able to move workloads between different cloud platforms, Spain (80%) and Finland (78%) place a lower importance on this mobility.

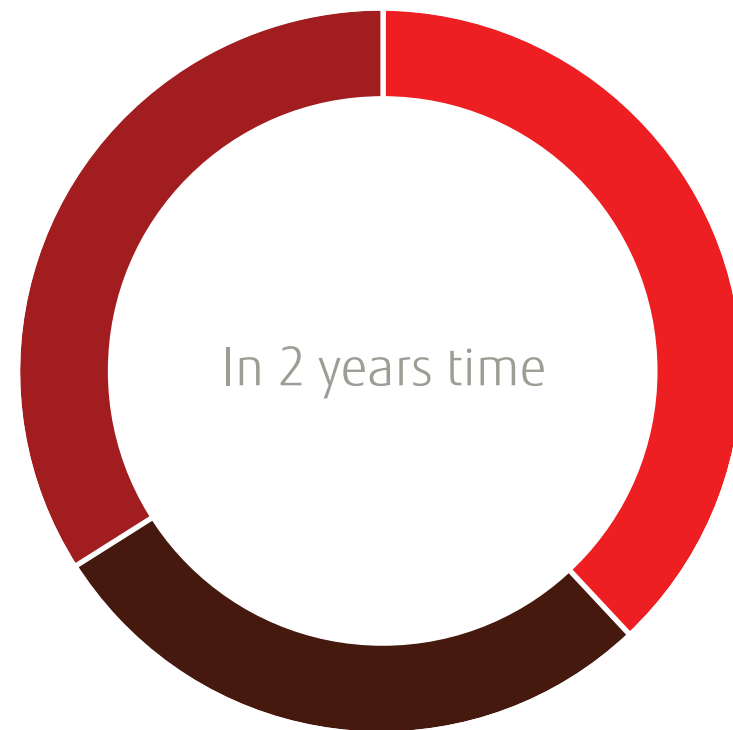


Diagram 2

How do you see your cloud architecture being comprised in 2 years time in comparison to how it is currently (in %)?



- Private cloud: 36%
- Hybrid cloud: 35%
- Public cloud: 29%



- Private cloud: 34%
- Hybrid cloud: 38%
- Public cloud: 28%

Diagram 3

How important are the following in enabling you to deliver a seamless digital experience to customers?

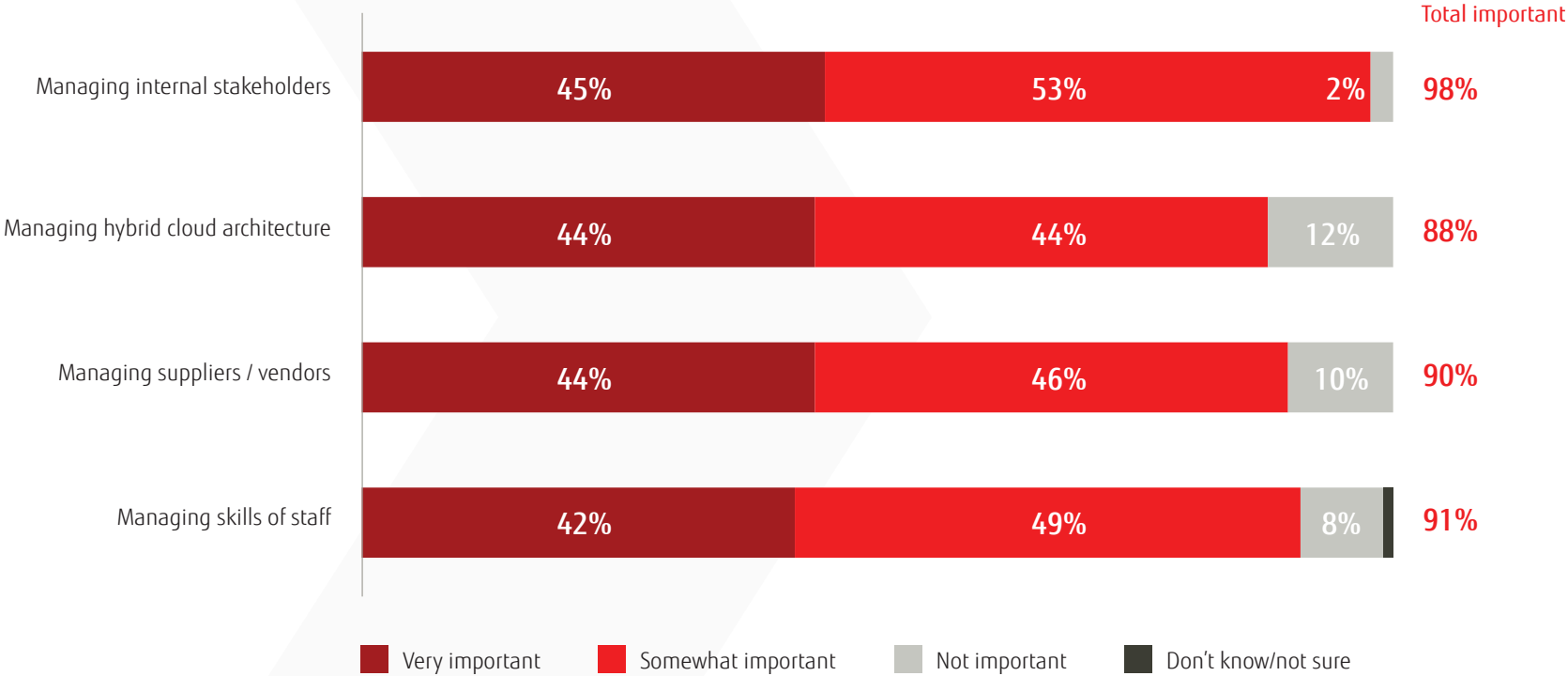
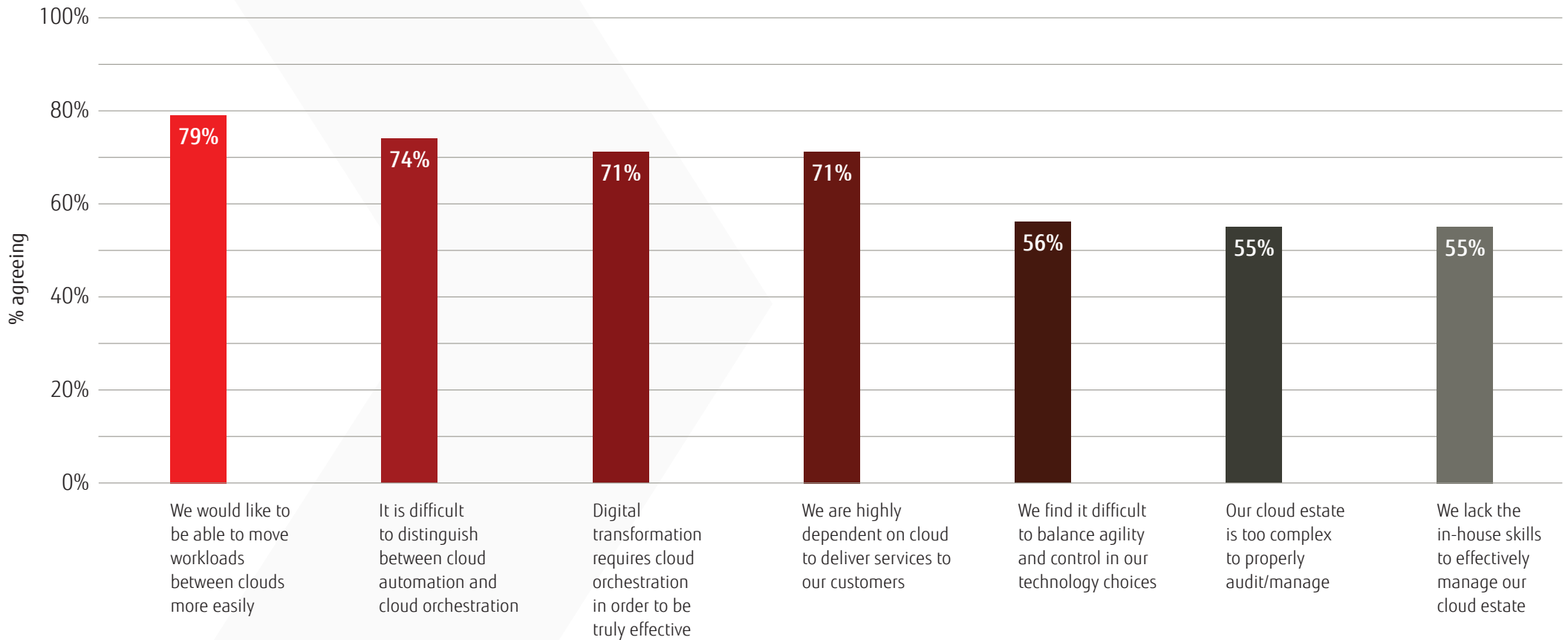


Diagram 4

To what extent do you agree or disagree with the following statements?



Challenges:

The research clearly showed that enterprises recognize a large number of challenges in managing the cloud estate, and this is shown in the responses in Diagram 5. Security, lack of visibility, cost management, integration of cloud services and complexity were all seen as very challenging by a large number of respondents. When the analysis considers those areas that presented *any* kind of challenge, however, the pattern changes significantly. Costs drop down the list of concern, and both governance and compliance become bigger players (Diagram 6).

There were some significant differences between the various geographies. Providing a consistent user experience, for example, was seen as a challenge by **86%** in the US, but by only **48%** in Spain.



Diagram 5

How challenging do you find the following aspects of managing your cloud estate?

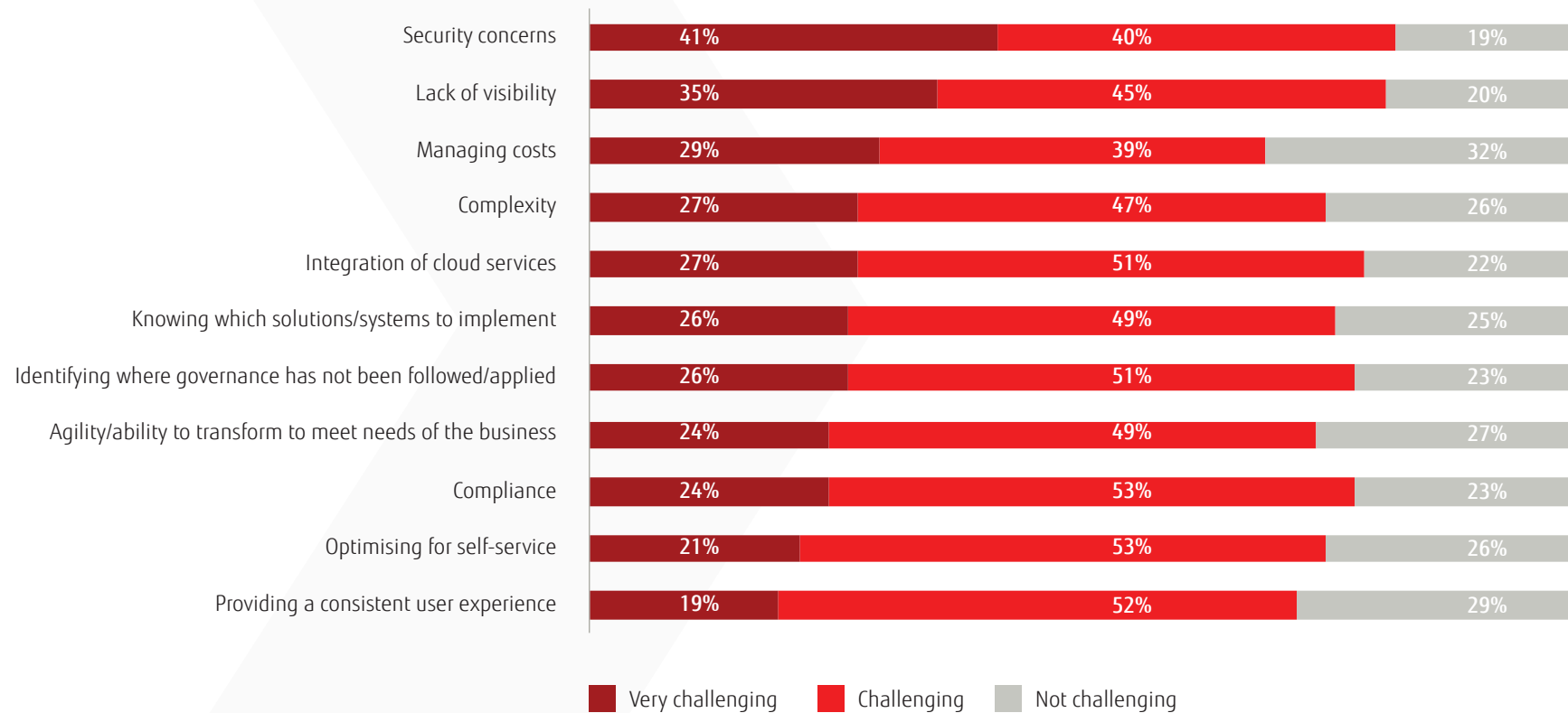
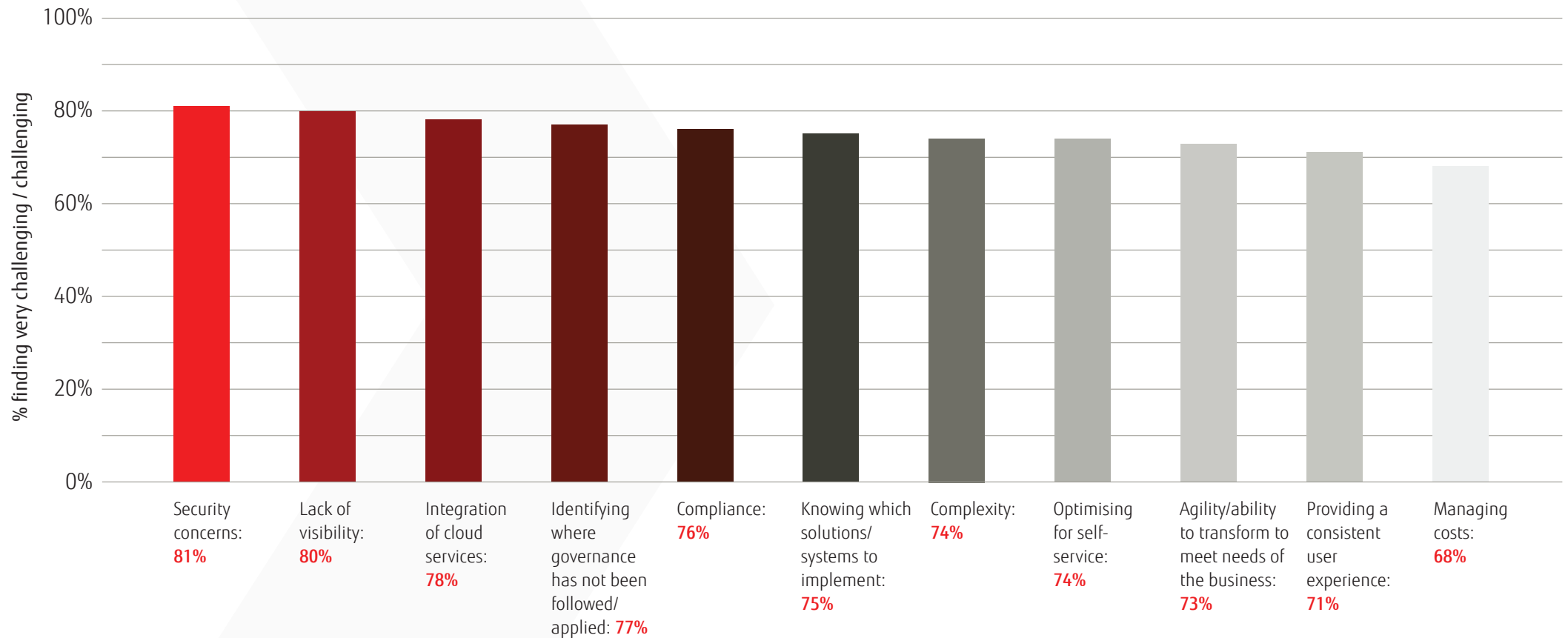


Diagram 6

How challenging do you find the following aspects of managing your cloud estate?



Complexity:

As we have already seen in the responses to the question asked in Diagram 6 overleaf, enterprises see complexity as a major issue. This isn't just because of the nature of Hybrid IT itself. The need to manage numerous suppliers/vendors is also one of the biggest concerns. Diagram 7 shows the suggestion that those companies that rely on software-as-a-service (SaaS) suppliers typically have a greater number of vendors to manage—over 50 in some cases, while infrastructure-as-a-service (IaaS) shows the lowest mode with 1-3 vendors representing 57% of the respondents.

In most geographies, the likelihood is that the number of cloud vendors will increase over the next 12 months (Diagram 8: 73%), although Australian respondents tended to believe that the increase would be less marked.

Diagram 9 highlighted that enterprises often feel that they lack the in-house skills they need to manage their cloud estate successfully, with Spain (32%) showing a greater confidence than the US, for example. At 73%, the latter clearly believes that there is much work to be done if they are to on-board the right skills.

Given that Spanish organizations, unlike those in the US, could appear to be focusing on a single or small number of platforms, this is understandable since their skills shortage will naturally be lessened. However, it could also be due to an underestimation of the complexity of the task which lies ahead.

This is something that we will revisit in the next “State of Orchestration” survey, in which we will track the trends of these answers and the adoption of orchestration.

Diagram 7

Approximately how many separate cloud vendors do you deal with that provide IaaS, PaaS or SaaS to your organization?

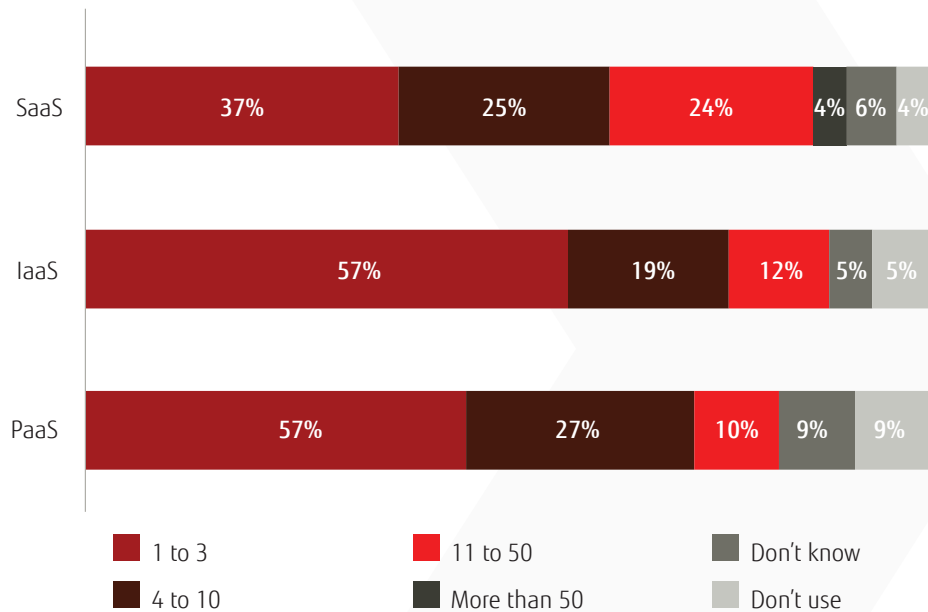


Diagram 8

Do you expect the total number of cloud vendors you use to increase, decrease or stay the same over the next 12 months?

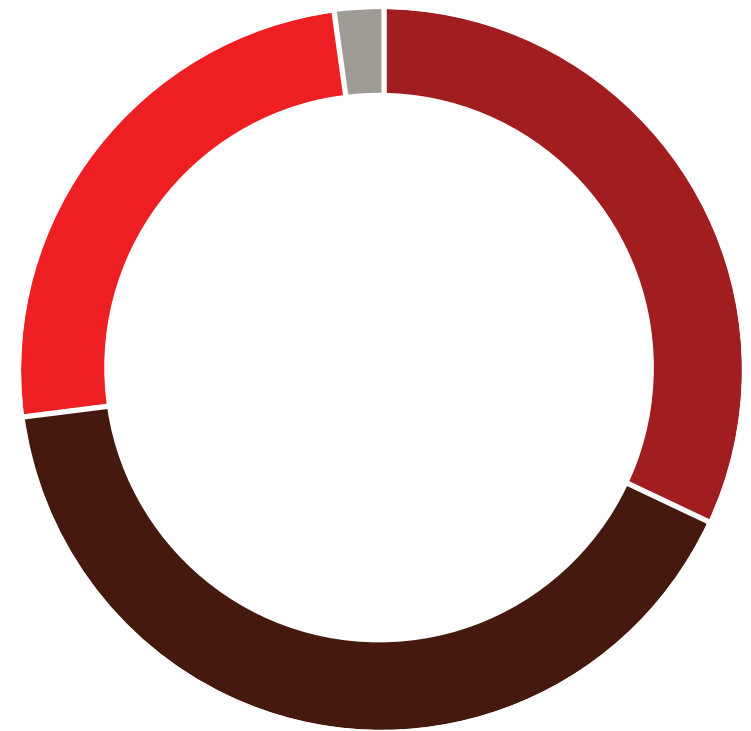
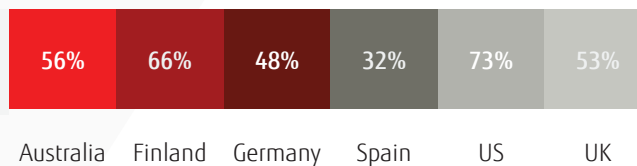


Diagram 9

% Saying they lack in-house skills to effectively manage cloud estate



- Increasing significantly (by more than 20%): 32%
- Increasing moderately (by up to 20%): 41%
- Staying the same: 25%
- Decreasing moderately (by up to 20%): 2%

2 Appetite for cloud orchestration

The American singer and songwriter Tori Amos describes an orchestra as a creature and the conductor as “the dragon tamer”. It’s an apt analogy for the world of Hybrid IT, where orchestration is the key to taming the complex mix of cloud and traditional IT environments and getting real business value out of it, particularly when looking to digitally transform an organization.

So what is Hybrid IT—and, for that matter, what is orchestration?

With Hybrid IT, you can take advantage of both the private and public cloud, whilst still getting value out of your existing legacy systems. It delivers a two-speed approach, bimodal IT, combining cloud—where the focus is on agility, with legacy—where the focus is on stability. Hybrid IT blends the convenience of cloud with the control offered by on-premises IT, effectively delivering the best of both worlds—making it an extremely popular model with enterprises of all sizes.

Cloud orchestration is used to manage an organization’s cloud services. It includes everything from service management, down to the technology layer, providing governance, visibility and control of all services against changing business needs.

Orchestration includes the setting of policies, the deployments of new systems and services along with the ongoing configuration management of their state. By orchestrating cloud services, organizations can take back control of their cloud landscape, bringing operational efficiency and digitization which sparked the move to cloud services in the first place.



Six pillars of Orchestration

Service orchestration

Maintains a seamless service and customer experience to the end user, even in a hybrid environment of robust IT and fast IT.

1

Supplier orchestration

Helps manage a complex supplier ecosystem; even though it offers the potential for self-governance, it reduces the risk of shadow IT.

2

Security orchestration

Helps the ongoing monitoring of all systems and services within the environment to enable faster reaction to security issues.

3

Process orchestration

Joins up the delivery of IT value from end-to-end, presenting complex "digital supply chains" as single, integrated services, seamlessly provided by IT.

4

Compliance orchestration

Allows the setting of a comprehensive set of policies, to detect and prevent any compliance breaches and make sure that companies remain in control of their governance.

5

Technical orchestration

Covers the integration of the different public cloud, private cloud, SaaS and traditional IT environments. APIs, technical security, data portability and dynamic workload management.

6



One factor that needs to be considered when assessing the research results is that the perceived definition of Hybrid IT and orchestration varied widely (Diagram 10). This was most noticeable when comparing Australia and the UK against Finland. Just **14%** of the former saw cloud orchestration as being automation, but almost half (**48%**) of the latter saw it this way. In fact, around **70%** of all respondents believed that it was difficult to differentiate between orchestration and service automation.

However, there is clearly a desire to take advantage of cloud and orchestration. Orchestration's benefits proved to be well recognized (Diagram 11), although different geographies placed different levels of emphasis on the opportunities. Visibility and control placed first in four countries, while user experience (Finland) and cost savings (Spain) were the other leaders. Governance came second in four countries, with the US and Spain proving the exceptions.

Even so, not all participants were currently using orchestration (Diagram 12) and those that were doing so used it for a range of purposes (Diagram 13). Other questions considered the potential for transitioning: Diagram 14 show how many tasks were being done manually, while Diagram 15 considered the need to retain the same tools and processes in both legacy and cloud.

Diagram 10

Which of the following best describes your definition of cloud orchestration?



- Automation: 25%
- Service Management: 20%
- Service Integration and Management: 25%
- All of the above: 30%

Diagram 11

Which of the following best describes your definition of cloud orchestration?

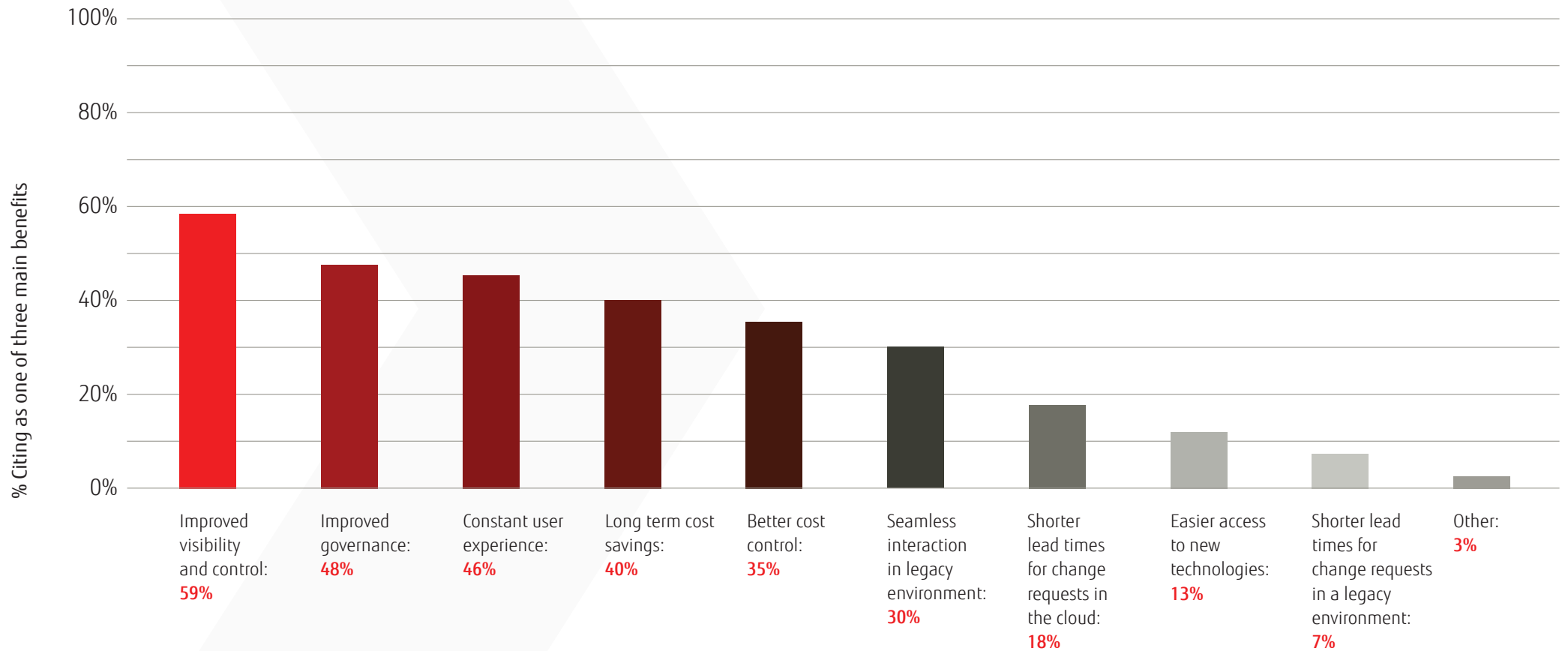


Diagram 12

In what time frame do you think your organization will use cloud orchestration?



- We already use cloud orchestration services extensively: **27%**
- We already use cloud orchestration services in some areas: **33%**
- We plan to use cloud orchestration services in the next 12 months: **22%**
- We plan to use cloud orchestration services in the next 24 months: **10%**
- No plans to use cloud orchestration services as yet: **4%**
- Don't know: **4%**

Diagram 13

What are you currently/what are you looking to orchestrate?

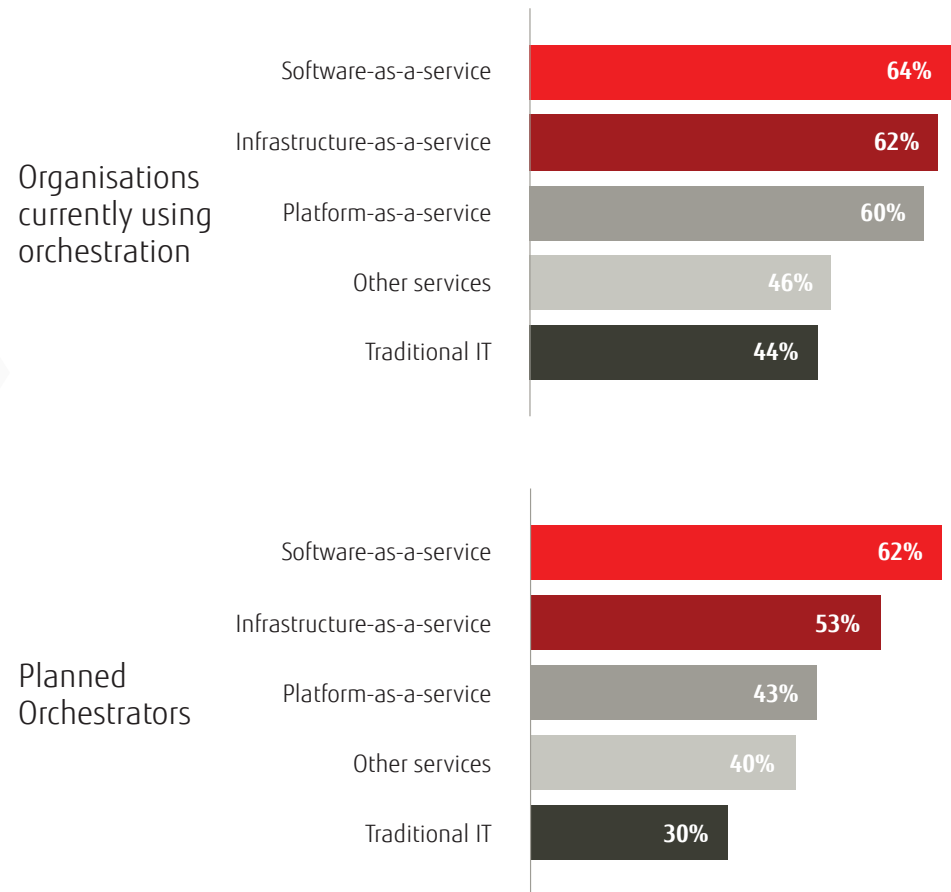


Diagram 14

Currently, approximately what % of each of the following activities is conducted manually (i.e. is not automated or orchestrated in any way)?

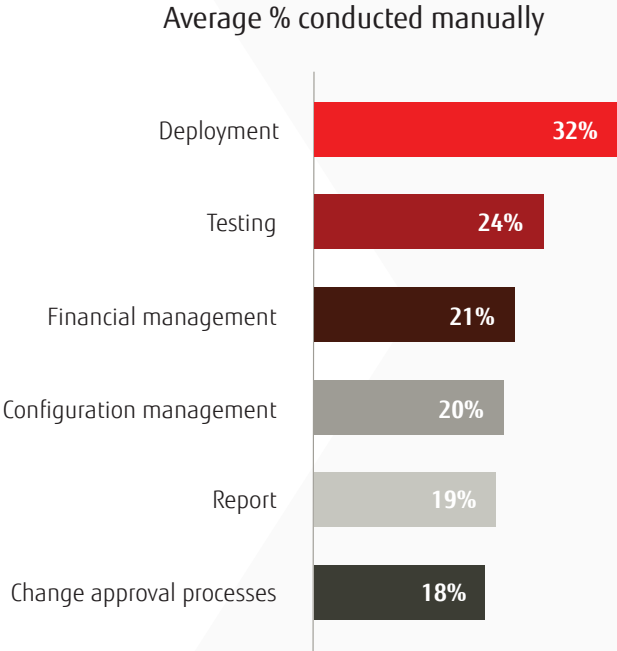
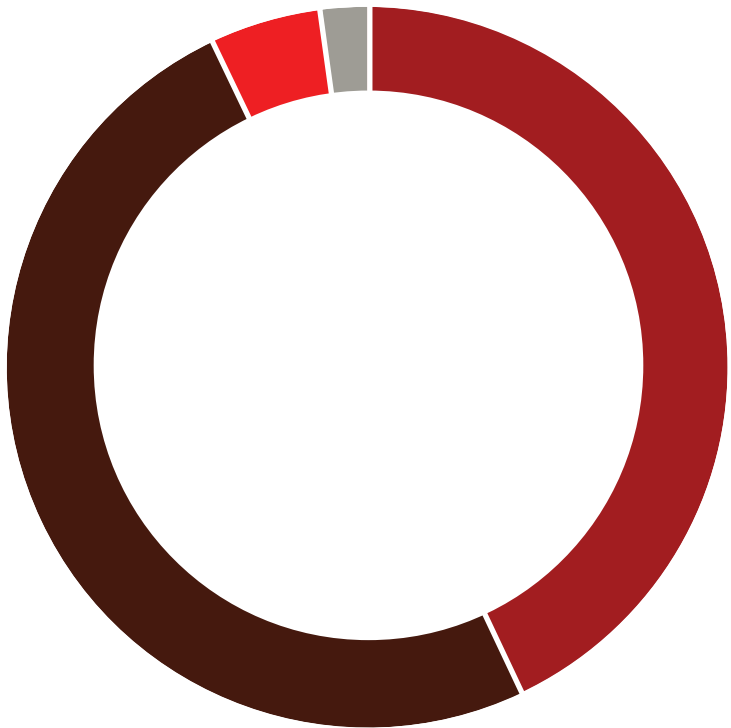


Diagram 15

How important do you think it is to use different tools and processes for both legacy and cloud environments?



- Very important, you need different tools and processes: 43%
- Important: 50%
- Not very important: 5%
- Not important - tools and processes can be the same: 2%

3 Looking ahead

The business value in Orchestration is not only in the individual technologies and services. It's in how it all comes together to deliver a secure, seamless customer experience and help drive the business forward. This places an extreme burden on the shoulders of business and IT leaders... to be clear on their strategic business goals. Throughout the research, respondents were clear who would take the final decision on orchestration, as shown in Diagram 16, and believed that it was essential for leaders to engage with the right supplier for those goals.

However, on this point enterprises perhaps not surprisingly appeared to want the best of both worlds. While responses in Diagram 16 suggested that they recognized the value of using the most appropriate vendor, Diagram 17 showed that they also wanted to avoid a solution that needed to be installed by experts.

There was also a distinct difference in the way in which countries viewed the barriers: although all of them saw vendor appropriateness and cost as the greatest barriers, the UK and US saw cost as the main problem while the others saw vendors as the biggest challenge.

Nearly three-quarters were ready, to the point that they had set up teams, or were running or had run a pilot (Diagram 19). There was however a distinct difference in the state of readiness between Germany, where just **14%** already had multiple DevOps teams, and the US where **53%** were already in that position.



Diagram 16

What barriers/concerns do you have, if any, about cloud orchestration?

Average % barriers/concerns

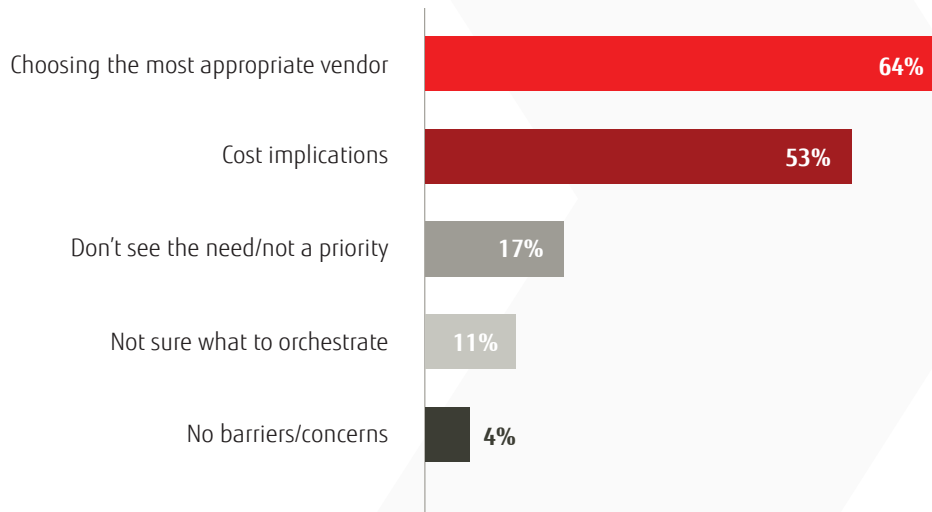


Diagram 17

If you purchased/were to purchase a comprehensive orchestration service, how would you like to interact with it?

% Preferred interaction with cloud orchestration service

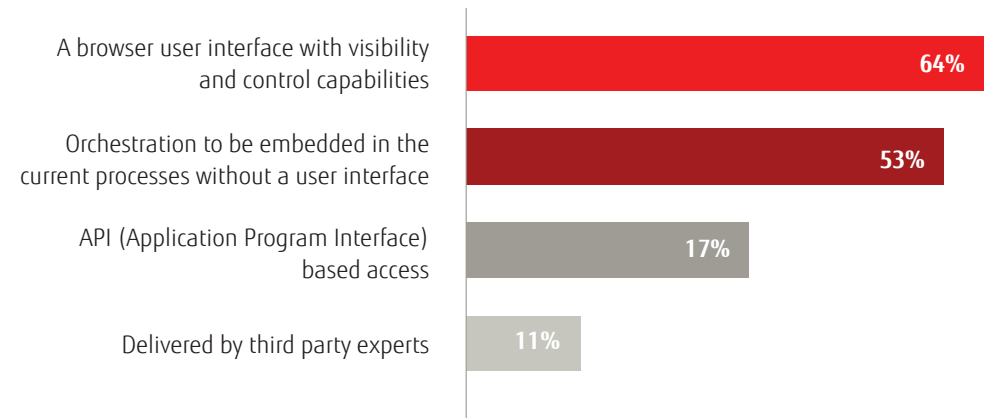


Diagram 18

Who else would be involved in a decision around the most appropriate cloud orchestration solution for your organization?

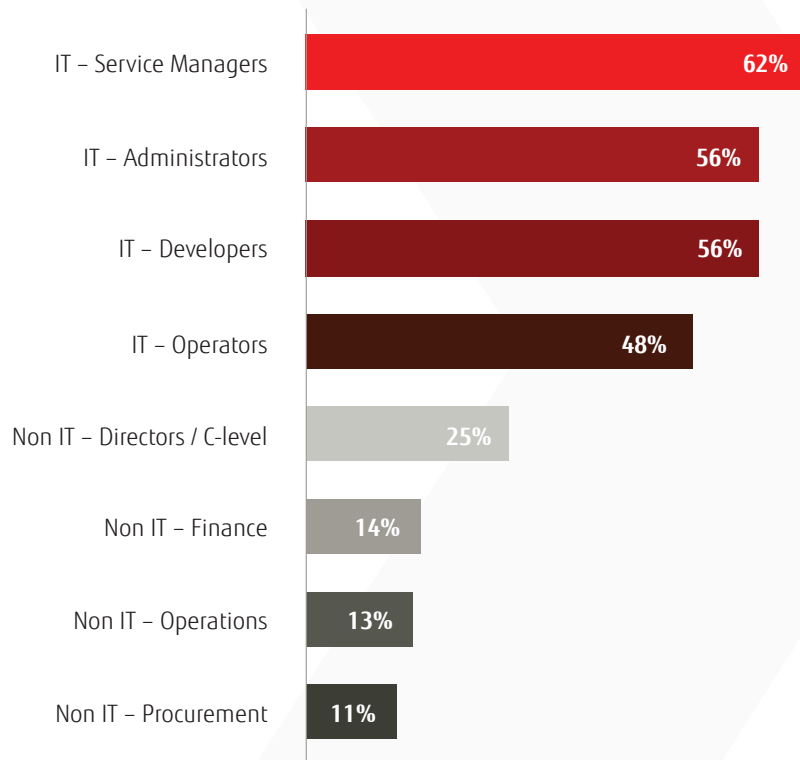
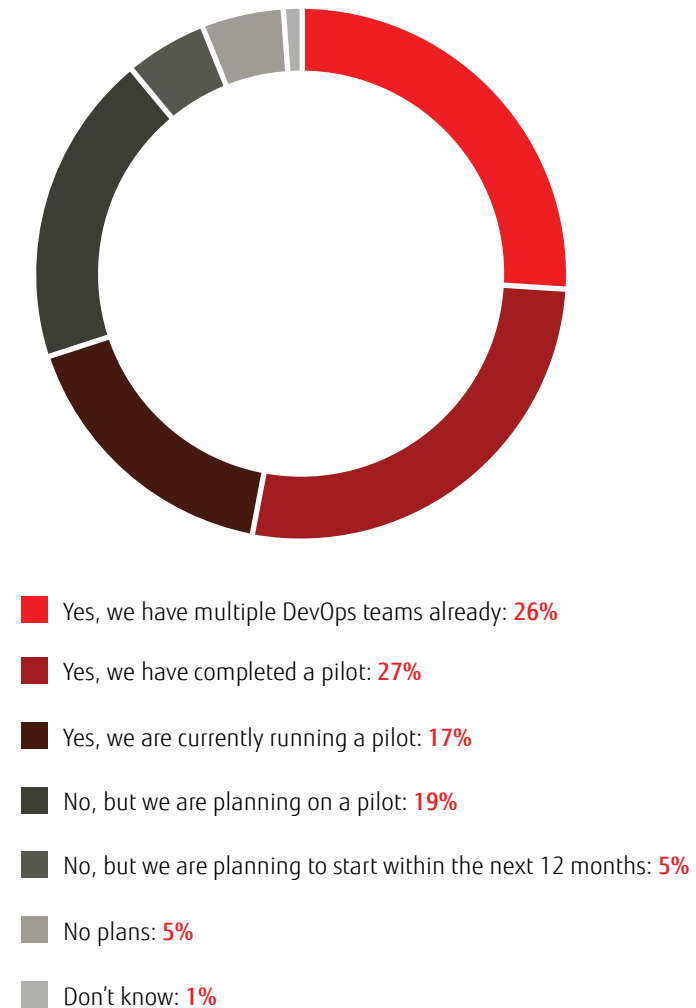


Diagram 19

Is your organization running or planning to run in a DevOps model?



4 Conclusion

Orchestration isn't just a fancy term for automation. It is full service management for Hybrid IT, built to make sure everything works in harmony across complex and expanding environments. And it makes sure this harmony isn't disrupted when enterprises deploy new services and solutions.

Our research shows that many businesses are already talking about orchestration, but very few businesses are putting those ideas into practice, simply because they don't know where to start.

Research shows that the biggest challenge facing you is finding the right cloud service provider (CSP). It's not enough to select one that can implement a successful cloud strategy. The ideal CSP will understand what orchestration is all about, what it can affect, and how it can be overlaid onto the business and a Hybrid IT architecture.

Once you have selected a CSP, your next step should be to sit down together and decide on your objectives and determine a strategy that will get you to your chosen "good place". The final step should be to decide on which of the six forms of orchestration you should implement, and how.



What you should do now

There are a number of resources available to you that will help you make the right decisions for your enterprise. As a first port of call, we suggest that you visit the [Hybrid Hive website](#) where you will find more information regarding Hybrid IT and orchestration.

You can also download a copy of the Hybrid IT brochure on the [Fujitsu Hybrid IT Orchestration web page](#).

For more information, contact us on:
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