The state of orchestration 2018/19

A market report

Managing your perfect balance to make the most of multi-cloud

FUJITSU

shaping tomorrow with you

Contents

Expert's introduction

Orchestration gives you the chance to get the most out of Hybrid IT. But how do you build a successful orchestration strategy?

We've spoken to hundreds of technical and service leaders across a broad range of sectors. They've given some key insights about orchestrating cloud services in complex landscapes. And we've used those insights to create our second annual report on the state of orchestration.

Read on, and you'll find out how orchestration has evolved over the last 12 months. You'll read first-hand accounts of how two large, complex organizations are managing it. And you'll learn the five key building blocks you need to make it work for your business.

Thank you to all those who responded for enriching our report. We hope you find these insights useful in shaping your future strategies.

NICK HERBERT, HEAD OF OFFERINGS, HYBRID IT

Nick Herbert is in charge of the strategic direction and establishment of Fujitsu's international Hybrid IT services and offerings. With his extensive service strategy and design background, Nick helps customers through their journey to a more agile and business-driven delivery.

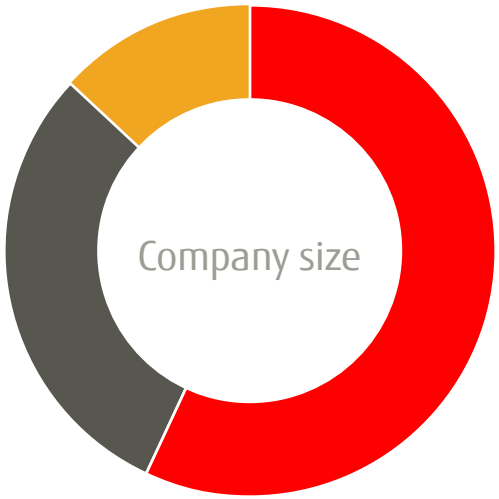
Methods

» The human, process and organizational shift to a cloud-enabled approach with agile delivery methods and end-to-end lifecycle management is a fundamental cultural shift.«

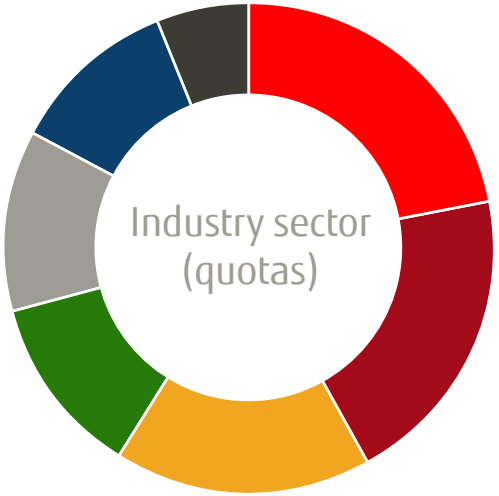
FUJITSU TECHNICAL & DELIVERY LEADERSHIP ON BEHALF OF A EUROPEAN GOVERNMENT. DEPT.

This research took place in 2018. 253 key IT decision-makers with responsibility for infrastructure and cloud took part. These senior players work for organizations with 500+ employees in: transport and logistics; utilities and services; government; retail; financial services; and manufacturing.

Participants were from the UK, US, Australia, Finland, Spain, and Germany. There were 40 to 45 participants from each location.



- 500-999 employees: 57%
- 1000-4999 employees: 30%
- 5000+ employees: 13%



- Manufacturing: 22%
- Financial Services: 20%
- Retail: 17%
- Government: 12%
- Utilities (and services): 12%
- Transport and Logistics: 11%
- Other: 6%

The orchestration landscape today

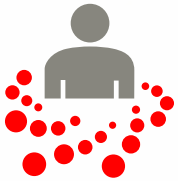
An overview of our findings:

Almost two-thirds (**64%**) of organizations think **multi-cloud will play a bigger part in their cloud architecture** over the next two years. **23%** believe it will stay at the same level. And only **12%** see it becoming less significant.

On average, our respondents' **multi-cloud environments were 58% private cloud and 42% public cloud**. In two years' time, this is expected to be much the same with a modest uplift in public cloud (**44%**), leaving private cloud with a **56%** share.

91% of the people we asked **want to move workloads between clouds more easily** (up from **79%** in 2017).

An overview of our findings:



82% say they need to be able to **orchestrate their cloud environment more effectively.**

57% think keeping up with customer demands is tougher than 12 months ago. The same proportion say that managing internal stakeholders is more challenging. Creating new digital services is another area of increased challenge (**54%**), followed by managing suppliers (**47%**) and managing multi-cloud architectures (**46%**).

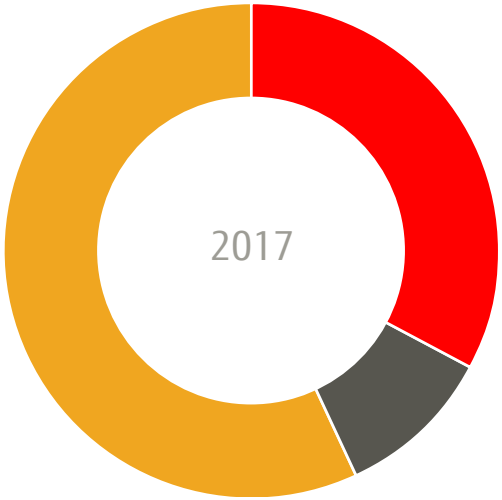
76% think digital transformation needs cloud orchestration to be truly effective (up from **71%** in 2017).

Multi-cloud dependency is increasing

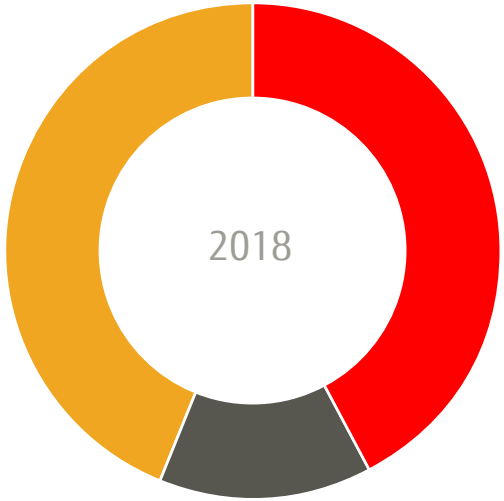
» Most organizations we've met over the last year cite flexibility, cost, existing investments, regulations and network performance as some of the most prominent reasons for their multi-cloud strategies.«

FUJITSU ANALYSIS

Dependence on cloud services has increased dramatically over the last year.

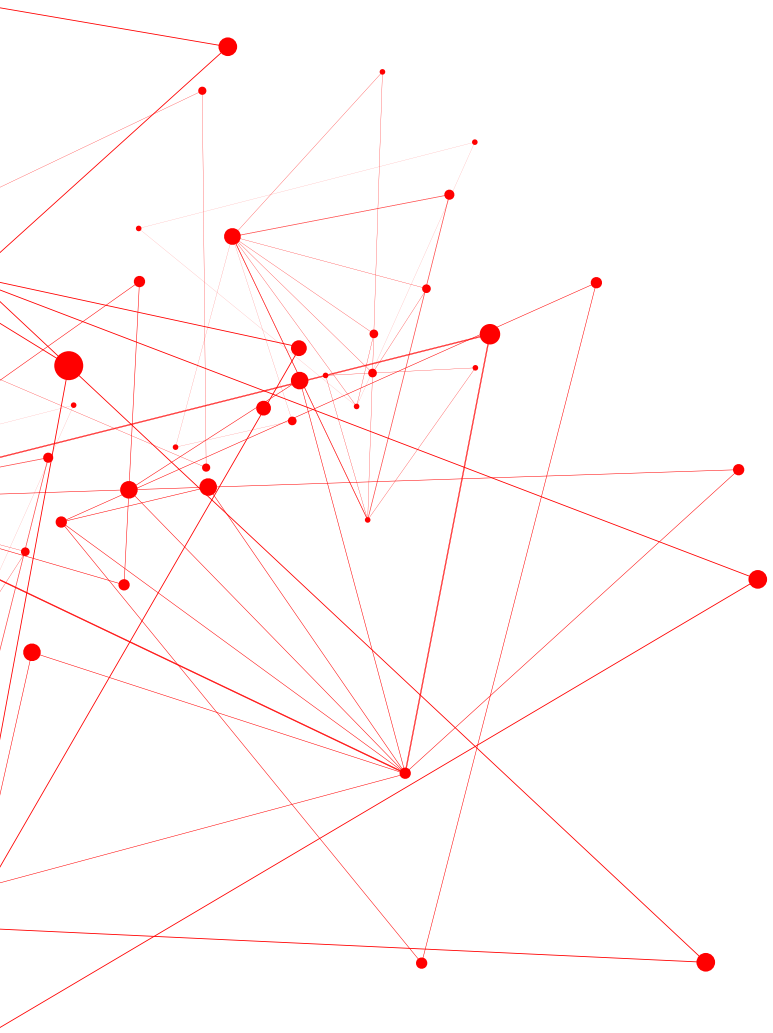


- **39%** cloud is our first choice
- **12%** cloud only, no exceptions
- **67%** highly dependent on cloud to deliver services to customers



- **65%** cloud is our first choice
- **21%** cloud only, no exceptions
- **67%** highly dependent on cloud to deliver services to customers

The market as we see it



We can see that more and more cloud strategies are moving from "cloud-first" to "cloud-only". Organizations that rely on a cloud-only strategy to deliver their services have doubled in the last twelve months.

It's important to remember that this includes both public and private delivery models. In fact, the average proportion of private cloud in multi-cloud environments jumped from **36%** to **42%** in the last twelve months.

This echoes the strategies of most of the organizations we've met over the last year. The main reasons they chose multi-cloud strategies were flexibility, cost, existing investments, regulations and network performance.

86% of the market reports a cloud-first or cloud-only policy. So, cloud is clearly still the core foundation of IT and business strategies. This is mainly down to several pressures: the demand to make everything digital; having to work more efficiently; trying new things to give customers what they want; and adapting to changes in compliance regimes or technology.

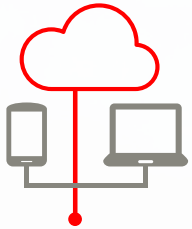
Multi-cloud is here to stay

An overview of our findings:

On average, organizations are using **nine** cloud vendors—although **a third** are using more than ten. In organizations that describe themselves as "cloud-only", the average number of cloud vendors increases to as many as 13.

Our respondents say the toughest aspects of managing their cloud estate are security concerns (95%), knowing which solutions to implement (84%), integration of cloud services (84%) and providing a consistent user experience (82%). This last aspect jumped ahead of lack of visibility, governance and compliance, which took fourth spot in 2017.

An overview of our findings:



68% say that changes to cloud services typically happen every few days or less. While organizations must be agile to respond to change, they're divided as to whether this has a low (**36%**) or high (**32%**) service impact.

In 2017, **73%** of respondents expected the number of cloud vendors to increase. Over the next two years, two-thirds expect to use more SaaS vendors (**67%**). Half expect to use more IaaS vendors (**51%**) and PaaS vendors (**48%**). Very few expect to use fewer vendors.

More than half (**54%**) see their cloud estate as too complex to properly audit or manage. This almost matches 2017's figure of **55%**. **53%** say they lack the in-house skills to effectively manage their cloud estate (**55%** in 2017).

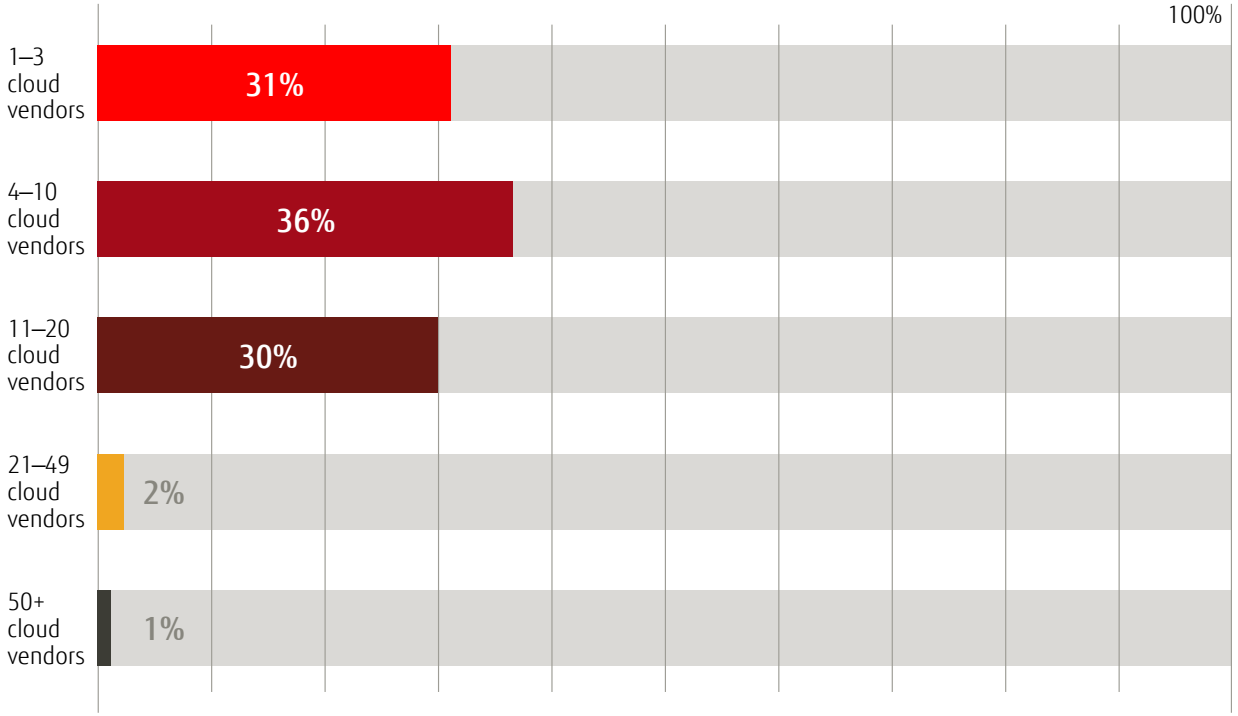
The complexity challenge

» Choice is overwhelming. Acquisitions of small boutique suppliers are increasing. And the landscape is constantly evolving.«

FUJITSU ANALYSIS

73% of our 2017 respondents have increased their number of cloud vendors over the last year.

Number of separate cloud vendors in 2018



An expert analysis of multi-cloud

» We have a huge growth agenda. So, everything needs to be done at a level which we haven't considered before. This includes global scale, which means we need to consider clouds like Alibaba which bring a new complexity.«

WHITBREAD

Companies that only use one cloud are rare. Because, however you want to use the cloud, you'll generally end up with a multi-cloud solution.

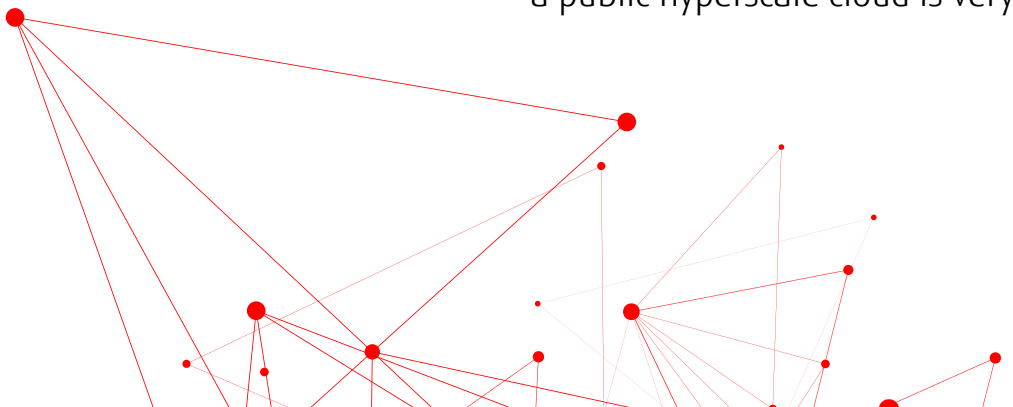
You could focus on all delivery models–IaaS, PaaS and SaaS. But if you use common SaaS services like ServiceNow or Salesforce.com, you'll still find yourself in the multi-cloud category.

This is supported by the fact that organizations make SaaS a priority. Which suggests they're looking beyond infrastructure as a commodity.

Alternatively, you could restrict the topic to IaaS platforms. Here you're either driven by features, geography, private/public, data residency, or simply a political and human divide on the "best" platform. Regardless, you'll often get to the same multi-cloud answer.

We've seen a big uptake in public cloud over the last 12 months. But we've also seen a growing focus on private cloud. Especially from large enterprises.

Creating a balanced strategy between a private cloud–such as VMware–with a public hyperscale cloud is very popular.



For example, we expect to see growth in VMWare cloud on AWS over the next 12 months. More enterprises will look to exploit this technology, to help their cloud architectures work in harmony. Having AWS services available on a VMware private cloud only makes this platform partnership even more powerful.

Choice is overwhelming. Acquisitions of small boutique suppliers are increasing, And the landscape is always evolving. On top of that, some suppliers still haven't adopted cloud utility-based commercial terms. This adds an extra layer of complexity in an industry which should be providing simplicity as a service.

The increasingly frequent changes to cloud services makes one thing clear. Businesses have to be agile if they want to respond quickly.

Orchestration should make your life simpler; it should give you governance, visibility, and control.

Orchestration gaining traction

An overview of our findings:

61% of respondents have orchestrated their cloud managed services, while the figure is **57%** for security and **56%** for change and release. Fewer businesses are orchestrating compliance (**47%**) or cost control (**47%**). Although plans for orchestration in the next two years are highest here: **43%** plan to orchestrate cost control, while **42%** plan to orchestrate compliance.

Orchestrated technologies are IaaS (**57%**), SaaS (**52%**) and PaaS (**51%**) with traditional IT orchestrated for **49%** of respondents. Respondents are most likely to make orchestration plans for PaaS in the next two years (**40%**).

Respondents said the key benefits of orchestration are better visibility and control (**62%**), as they did in 2017 (**59%**). This is followed by long term cost savings (**49%**) and a consistent user experience (**46%**). Cost savings have jumped up the list of benefits ahead of governance, which featured as a top three benefit in 2017.

An overview of our findings:

Preferred approaches for orchestration are:

- Focus on making best use of platforms and services (total: **85%**).
- Use one orchestration tool (**53%**) rather than more (**40%**).
- Keep orchestration tools independent (**69%**) rather than adopting a tool from a hyperscale vendor (**23%**).

Levels of automation for technology and service-related activities vary widely:

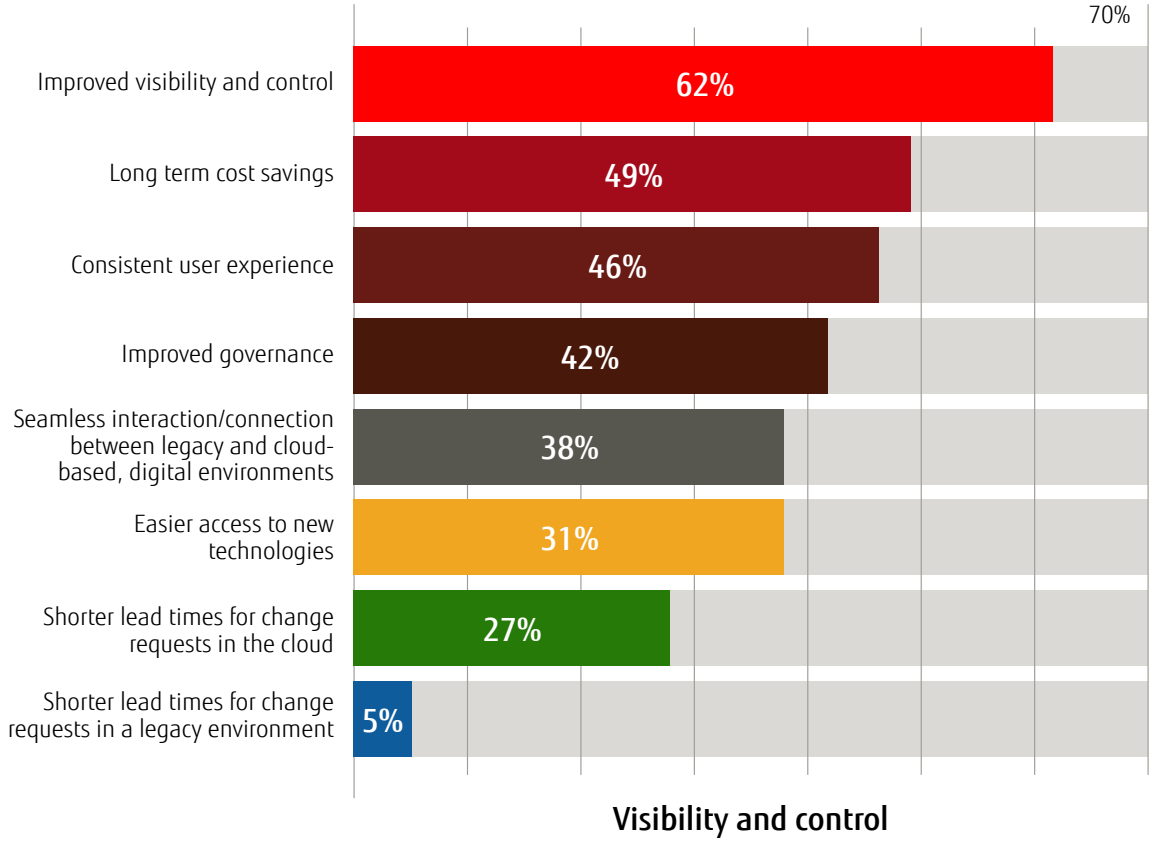
- Technology-related activities that are most likely to be completely or mostly manual are deployment (**45%**) and testing (**44%**). The figure is much less for configuration (**32%**), where **30%** of respondents say this is mostly or completely automated.
- Service or process-related activities that are most likely to be completely or mostly manual are reporting (**42%**), followed by change approval processes (**39%**). Reporting is also the area most likely to be completely or mostly automated (**32%**) with relatively few saying it is equally automated and manual. More are likely to describe financial management as equally manual and automated (**42%**).

Main benefits of orchestration

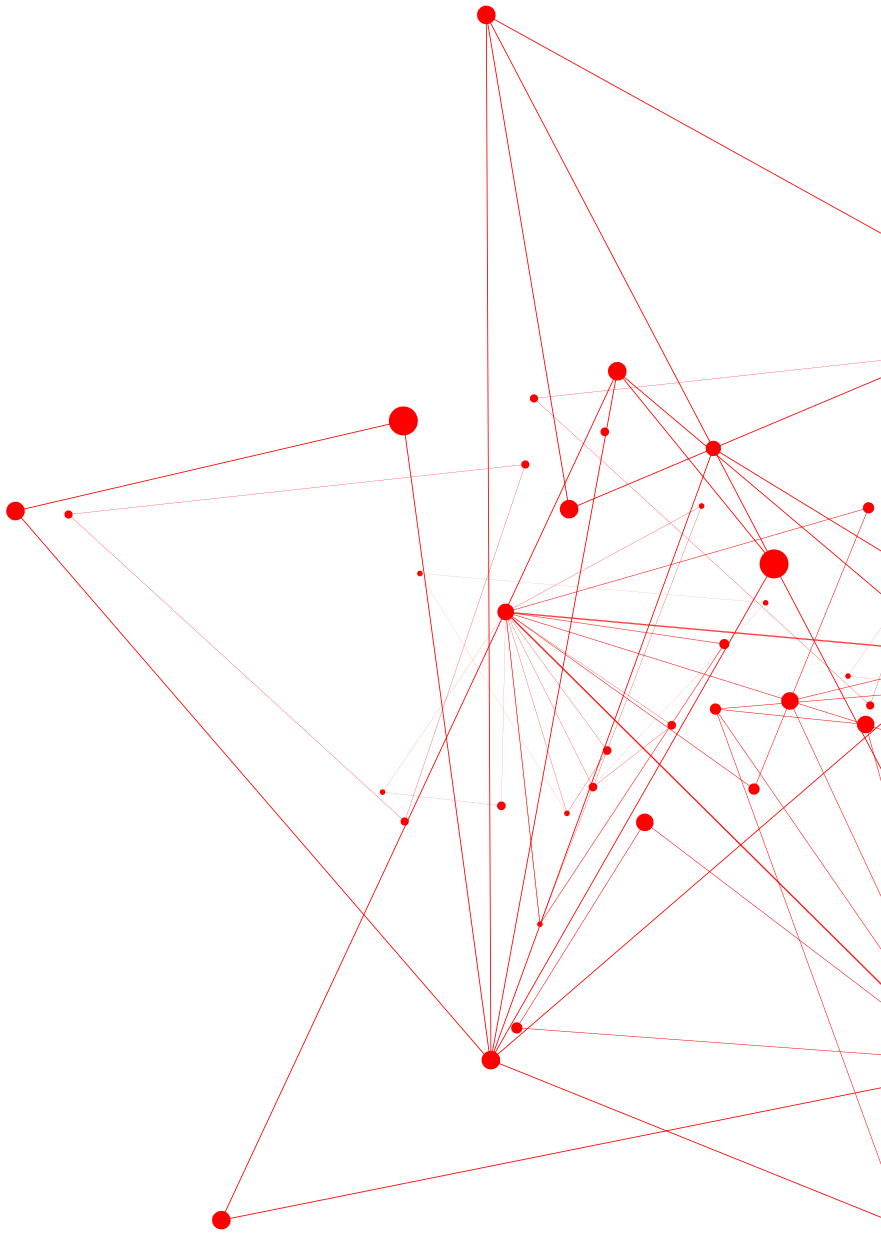
» It's great to organizations embracing frequent change. But they've clearly got a long way to go before this fast pace becomes a true agile benefit, rather than a disruption that regularly affects services.«

FUJITSU ANALYSIS

'Improved visibility and control" retains its top spot from 2017, when it received 62% of the vote.



Widespread adoption of orchestration



Organizations often have a lot to manage. To start, you've got hundreds or thousands of instances, services, subscriptions, and users. Then there's complex, self-organizing teams juggling several priorities. Add these together, and it can be a huge challenge to stay in control of everything that's going on.

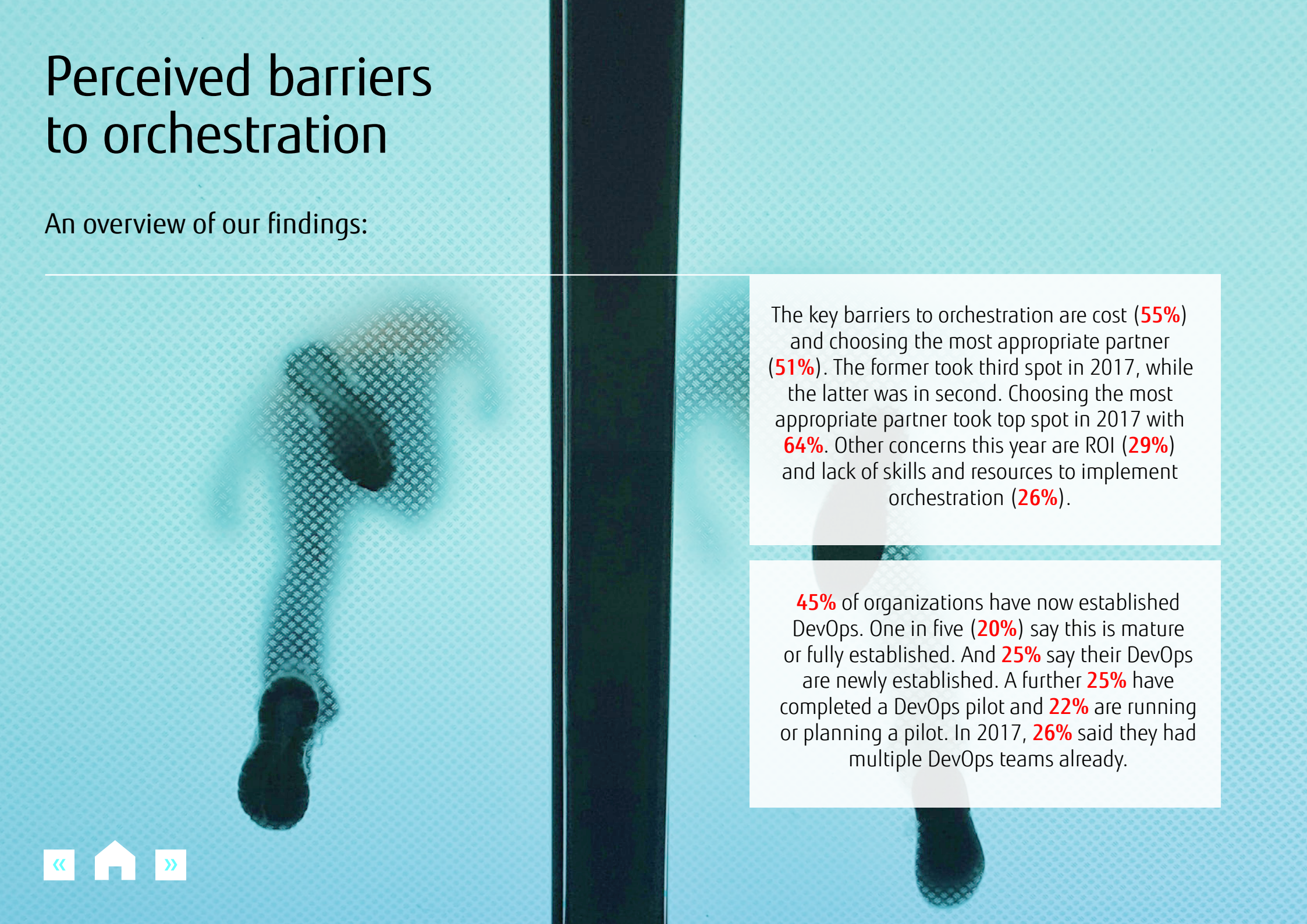
You'll probably have different systems to give you the information you need, rather than a single view of your end-to-end estate. But it's important to make these systems part of your orchestration strategy. This way, you get the right insights. And you reap the benefits of an orchestrated, optimized cloud environment.

There's another level of complexity in these environments; keeping up with changing business and customer needs. More than two-thirds (68%) of organizations say changes occur frequently. And half of these changes are deemed to have a high negative service impact.

It's great to see organizations embracing frequent change. But they've clearly got a long way to go before this rapid pace becomes a true agile benefit, rather than a disruption that regularly affects services.

Perceived barriers to orchestration

An overview of our findings:



The key barriers to orchestration are cost (**55%**) and choosing the most appropriate partner (**51%**). The former took third spot in 2017, while the latter was in second. Choosing the most appropriate partner took top spot in 2017 with **64%**. Other concerns this year are ROI (**29%**) and lack of skills and resources to implement orchestration (**26%**).

45% of organizations have now established DevOps. One in five (**20%**) say this is mature or fully established. And **25%** say their DevOps are newly established. A further **25%** have completed a DevOps pilot and **22%** are running or planning a pilot. In 2017, **26%** said they had multiple DevOps teams already.

An overview of our findings:

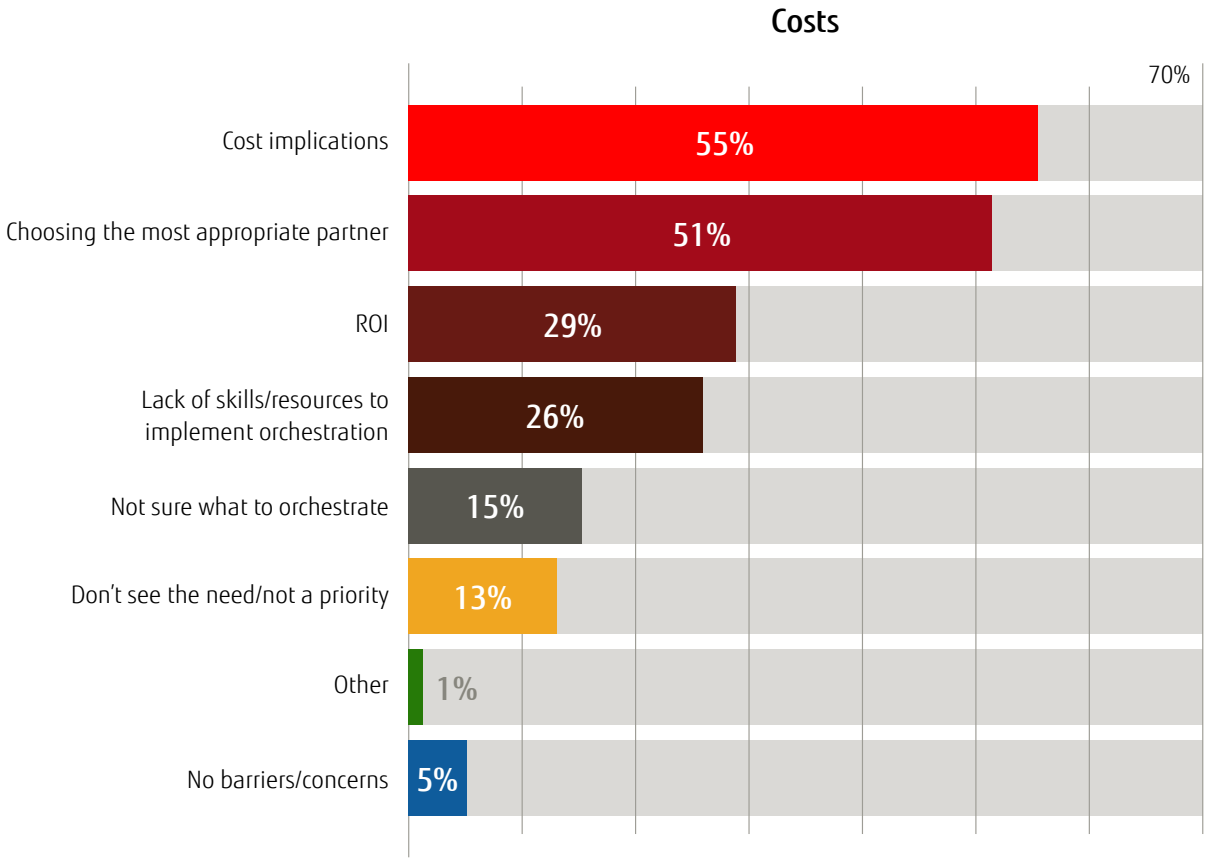
The key reasons for pursuing a DevOps model are: to better cope with continuous change and improvements (**42%**); to become faster and more able to support business change (**37%**); and to decrease costs (**36%**). One in three are doing it to keep up with competitors or because "everyone else is doing it" (**34%**).

Our research shows that the following scenarios are likely to occur over the next five years:

- **86%** expect autonomous service management decisions with minimal human intervention.
- **82%** expect autonomous technical operations.
- **83%** expect widespread orchestration of cloud-native, digital technologies.
- **81%** expect more businesses will use containers to make orchestration more effective.
- **78%** think enterprises will use DevOps at scale.
- **75%** think more businesses will use microservices architecture.

A closer look at cost

When done well, orchestration leads to lower costs and more financial control. But cost still ranks as the biggest barrier to orchestration.



Looking ahead

DevOps is key to transforming service delivery. We're seeing more organizations combining their agile and DevOps teams to expand their vision across the enterprise.

The minority have implemented this at scale. Meanwhile, the majority are experimenting and trying to restructure their organization around a new concept.

Creating accountable teams with minimal waste in hierarchical management and reporting systems, while minimizing the wait time and confusion that results from multiple hand-offs, are key drivers for change.

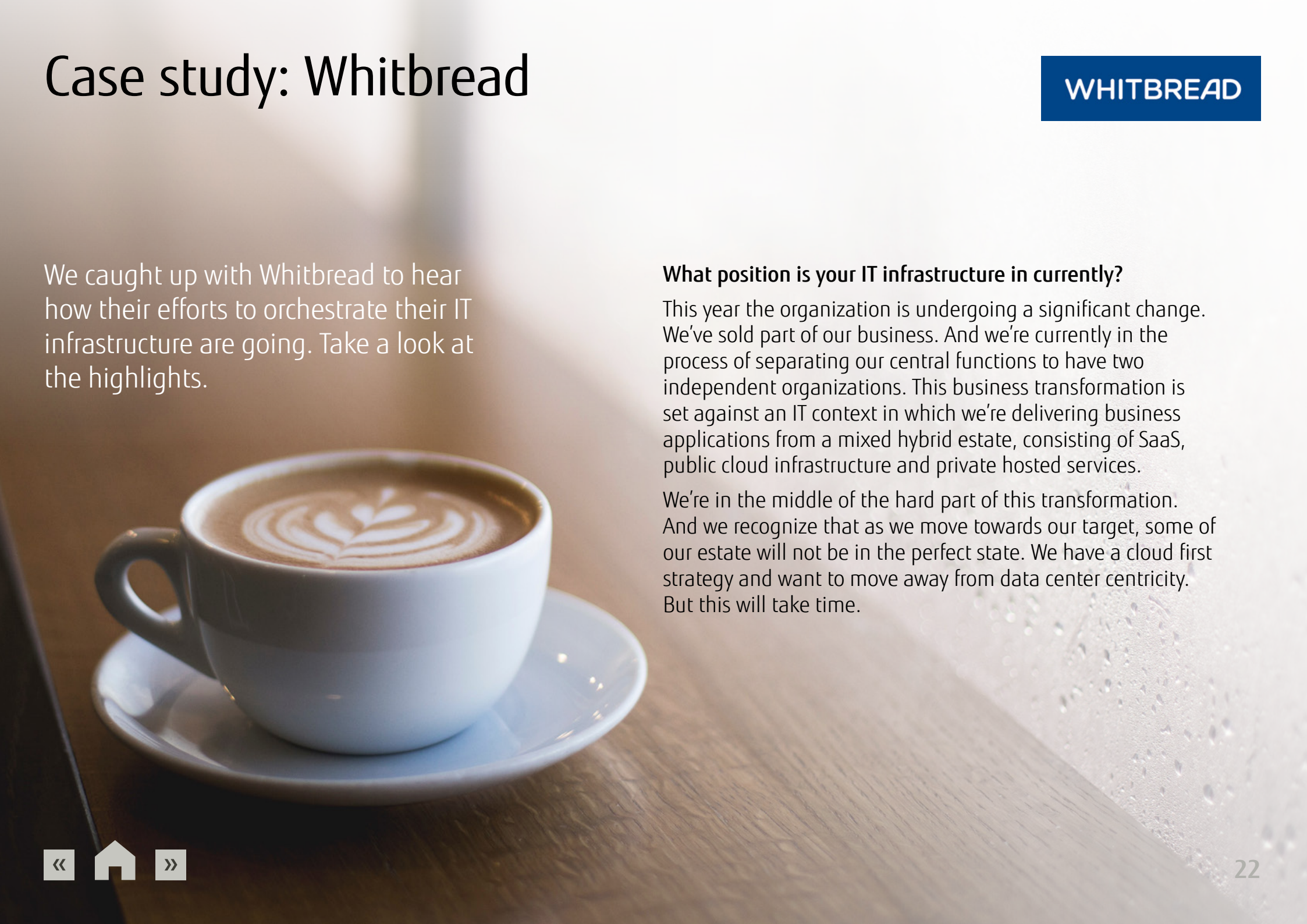
The most efficient teams are small. And they're responsible for the full lifecycle of systems–from concept through to implementation, management and optimization. For many small teams to work in harmony, you need to know your core values and principles to promote cohesion.

It's crucial to have a strong strategic foundation before self-organization can materialize. Without this, your teams will be paralyzed with indecision. Or you'll unwittingly make things more complex. Disjointed teams with separate approaches and principles can cause utter chaos.

Case study: Whitbread

WHITBREAD

We caught up with Whitbread to hear how their efforts to orchestrate their IT infrastructure are going. Take a look at the highlights.



What position is your IT infrastructure in currently?

This year the organization is undergoing a significant change. We've sold part of our business. And we're currently in the process of separating our central functions to have two independent organizations. This business transformation is set against an IT context in which we're delivering business applications from a mixed hybrid estate, consisting of SaaS, public cloud infrastructure and private hosted services.

We're in the middle of the hard part of this transformation. And we recognize that as we move towards our target, some of our estate will not be in the perfect state. We have a cloud first strategy and want to move away from data center centricity. But this will take time.

What are the challenges you've experienced with orchestration and management along your journey so far?

We've had our eyes on the difficult and obvious challenges, such as the regulation shift of GDPR, which has not been simple. We've also experienced a lack of maturity in the supplier side of cloud-enabled services. Some have "cloud services" but with traditional commercials. We've seen vendors pitching licensing models that have no "subscription" concept and require upfront investments against a predicted usage forecast, which is often impossible to predict. These suppliers expect the customer to take on the risk of the forecast and this is unworkable in a cloud utility model.

As we've moved into cloud centric services, it has become apparent that a typical cloud business case doesn't take into account the overhead of the full picture. This includes operational change like patching and update cycles, and the business change, such as collaborative working and continual changes.

When you break that down, it's a cadence change for IT but importantly for the business too. It's a collaborative effort between IT and the business: you need a multi-functional team to ensure that the business service is designed, delivered and optimized.

Even simple things, like the resources required to manage the patching and UAT of the continuous change profile of cloud enabled systems, need to be considered and planned.

Looking ahead, what are your top priorities?

First of all I'd say improving visibility to gain an appreciation of what we have, what capacity we have and what our forward plan is. Then I'd say supporting business growth. We have a huge growth agenda. So, everything needs to be done at a level which we haven't considered before. This includes global scale, which means we need to consider clouds like Alibaba which bring a new complexity.

After that, it's appropriate resourcing—ensuring we have a model that does not require an army to manage it, or to manmark the suppliers and pick through the service reporting with a fine-tooth comb. Finally, it's vital we have a predictable cost model around the services and support of cloud environments.

Case study: Government department

We also sat down with Fujitsu's Technical & Delivery leadership at a large, critical European Government Department. They gave their thoughts on their on-going orchestration.

How are you approaching your customer's infrastructure at the moment?

So that we can fit in with our customer's transformation strategy, we're adopting a cloud first policy for its future IT.

Whenever there's change in mission critical public services landscapes, it opens up both a large-scale opportunity and a significant challenge. Finding the right balance is key. Consistency is critical. Today, service integration makes it possible for customers to make the right choice and come up with intelligent decisions.

If you look back, historically many of the services that we delivered were about maintaining a classic infrastructure and keeping it predictable. We have to do that at the same time as the existing systems, methods, and norms deliver continuous service, even if they're not up to date.

What are your core concerns?

A cloud-enabled future presents a chance to manage change. The options can seem endless. But it needs discipline to make sure service is coherent and recognize that budgets aren't bottomless.

We're obsessed with making sure our integrated delivery model stays valid. Especially since we have to factor in the ever-changing demand in our customer's environment. Planning for, creating the capacity to tolerate, and driving a normalized comfort with continuous change is our real challenge. That's especially the case since our customer needs secure environments and transparent, auditable controls.

What are your plans going forward?

We'll definitely be looking as how we can apply more effort to clear design principles. We'll have to understand the benefits and parameters of an orchestrated service model. We'll also look at creating a hybrid estate that covers everything from mainframes, to cloud native services via private cloud platforms and multi-managed hyperscale.

Recommendations: Fujitsu's five key building blocks for successful orchestration

1

Develop a service transformation program. And combine it with your technical transformations to deliver better services, not just new tech.

2

Exploit the power and capabilities within your cloud services.

3

Avoid chaos by creating a strong set of values and principles. This will give your organization a core foundation. And it will enable teams to become self-organizing.

4

Create a business-oriented IT strategy that looks at the services you need and how technology underpins them.

5

Recognize the human aspect in all this. It's crucial that your business culture evolves to support your business and technical strategy.

Final thoughts

From this report, we've seen that putting multi-cloud first, reducing and managing complexity, gaining visibility and control, and how you organize and operate to deliver faster are still critical topics. They've become more prominent over the last 12 months, as enterprises embrace cloud-native services to gain availability be more innovative while lowering costs.

There are several other benefits to multi-cloud architectures. It can help you reduce costs by 30-70%, for instance, by giving you more visibility and control. It enables you to understand the extent of development environments and self-service contracts in your business.

But to really work as efficiently as possible, make savings and get better at creating new products and services? You've got to think about more than just infrastructure. You need to look at the holistic TCO gains you can get by speeding up projects and development.

An effective multi-cloud strategy requires you to think about all aspects of your organization. Don't forget: the cloud is still a physical set of platforms someone else is managing, with a flexible commercial mode.

As we embrace the next paradigm of computing in the cloud, it's worth remembering the basics. Manage services well. Think about how to overcome complexity. And keep an eye on security and compliance. Because multi-cloud is here to stay. And it offers lots of exciting opportunities.

We hope you enjoy the new-found flexibility and agility it offers.

BRAD MALLARD,
CTO OF DIGITAL TECHNOLOGY SERVICES, FUJITSU EMEIA

An inspirational, innovative and influential leader, **Brad Mallard** has over 20 years' experience of strategic technology roles. Over the years, he's worked with and for some of the largest organizations across EMEIA. He's expert at communicating and driving change across cultures and geographies.

What next?

There are a number of resources available that will help you make the right decisions about orchestration for your enterprise. As a first port of call, we suggest that you visit the Hybrid Hive blog site, 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:

AskfujitsuHQ@ts.fujitsu.com

FUJITSU

www.fujitsu.com/global

shaping tomorrow with you