

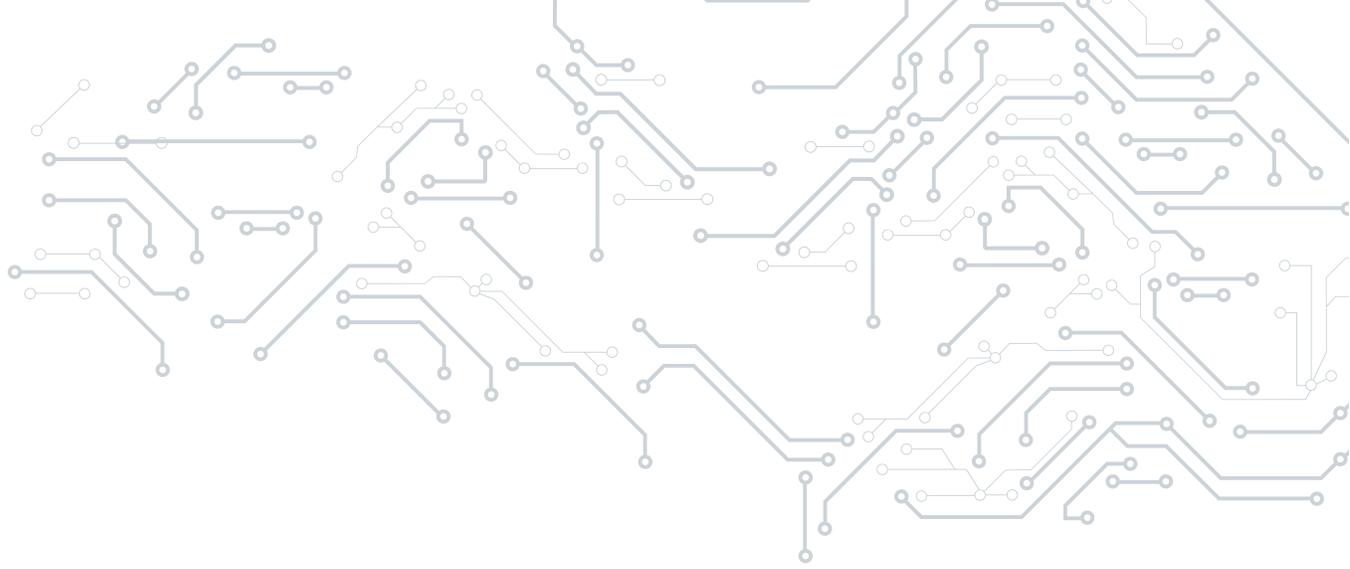


Trends In Hybrid Cloud

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IN ASSOCIATION WITH





About this paper

A Pathfinder paper navigates decision-makers through the issues surrounding a specific technology or business case, explores the business value of adoption, and recommends the range of considerations and concrete next steps in the decision-making process.

About 451 Research

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organisations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

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INTRODUCTION

Cloud has a key role to play as an agent for digital transformation, with the use of multiple cloud services becoming IT's de facto reality. According to surveys conducted by 451 Research, about two-thirds of organisations are using multiple clouds to meet different enterprise needs. While most enterprises are using more than one cloud, the use of hybrid clouds (single applications seamlessly spanning multiple clouds), is still fairly limited.

The movement to hybrid cloud is a complex business. Not surprisingly, some 60% of organisations globally said they plan to seek some sort of third-party assistance with forging multi-cloud strategies, while a minority of organisations said they will take a best-of-breed or do-it-yourself approach.

451 Research believes that multi-clouds and hybrid infrastructure are critical on-ramps to achieve full digital transformation, wherein digital technologies enable innovation rather than just enhance traditional methods and processes.

This report examines key cloud trends, both globally and in the UK in particular. In the report, we discuss the key business drivers and benefits of multi-clouds and hybrid clouds, and we surface trends for individual workloads, as well as some of the challenges to cloud deployment.



Below are some key findings aggregated from surveys undertaken by 451 Research:

The proportion of applications deployed in the cloud is expected to jump from 65% in 2016 to 76% in 2018.

All forms of cloud, both public and private, will register significant deployment gains over the next two years.

In the UK, 65% of organisations plan on using multiple clouds, leaving only one in three focused on a single-cloud environment. However, the use of true hybrid cloud is still fairly limited.

The biggest change we expect over the next two years is the decrease in the number of applications that run in non-cloud environments.

Automation, data migration and cost management have emerged as key challenges of cloud deployment in the UK.

Cloud adoption trends

Cloud usage is widespread in enterprise technology deployments as shown in Figure 1 below, which includes data captured from more than 500 global organisations. We expect the proportion of enterprise applications running

in non-cloud environments to shrink rapidly to less than 24% by 2018. Meanwhile, all forms of cloud, both public and private, will register significant deployment gains in this period.

Figure 1: Proportion of Applications Deployed in Cloud and Non-Cloud Venues

Q: What percentage of your organisation's applications are currently deployed in the following venues? In two years, what percentage of your organisation's applications will be deployed in the following venues? n = 515

Source: 451 Research, Voice of the Enterprise: Cloud Transformation, Vendor Evaluations 2016

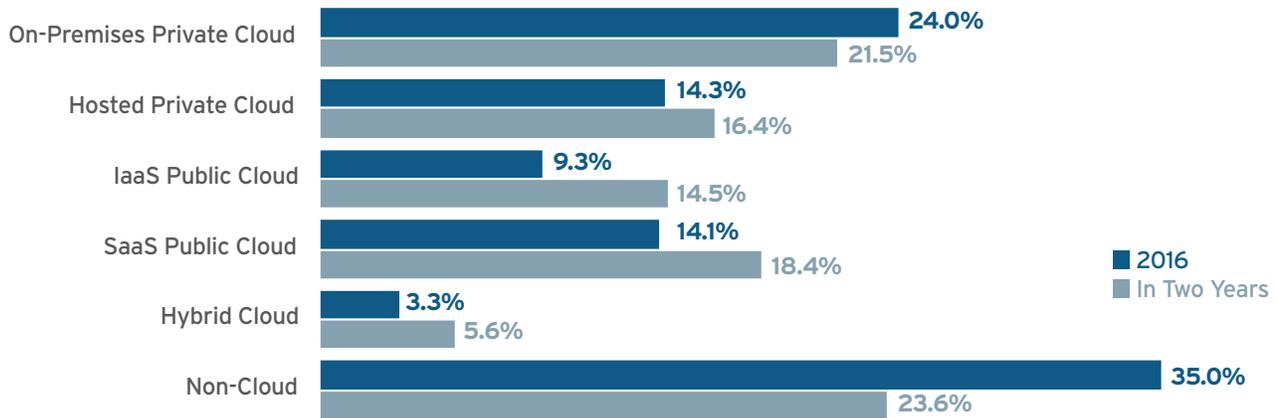
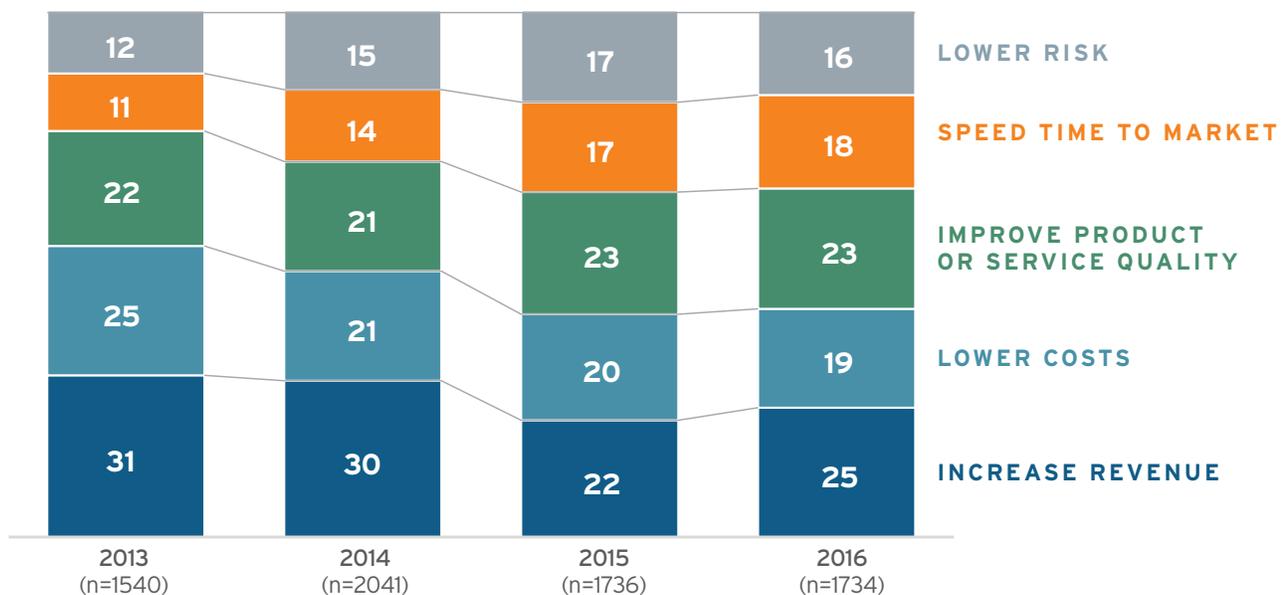


Figure 2 below illustrates the change in business priorities that is driving the shift to cloud. A few years ago, the focus of IT efforts was primarily on supporting business drivers for increased revenue and lower costs, which was to be expected in the post-recessionary era. However, today and for the foreseeable future, organisations will place more emphasis on speeding up time to market for products and services, and improving quality of service.

Traditional non-cloud IT environments are broadly seen as relatively inflexible and difficult to adapt to rapidly changing business conditions. Cloud, on the other hand, is seen as a service delivery model that can offer far greater agility and flexibility to respond to the dynamics of business today, with lower capex.

Figure 2: Shift in Business Goals

Q: Allocate points among the following five goals as they relate to your company or organisation.
 Source: 451 Research, Commissioned Research 2016



THE FUTURE IS MULTI-CLOUD

Both IT and business leaders are stepping up efforts to find the optimal workload-placement scheme in the evolving cloud scene. If planners make the right choices, they can better control and optimise expenses while getting users the data and services they need to grow the business. Also, a workload-specific approach can help bridge the gap that is often found between IT and business leaders.

The trend toward the use of multiple clouds is clear. Figure 3 shows that a majority of organisations in the UK plan on using multiple clouds over the next 24 months. In fact, only one in three or-

ganisations plans to focus on a single cloud environment. The use of multiple clouds is the chosen path for most organisations in the UK.

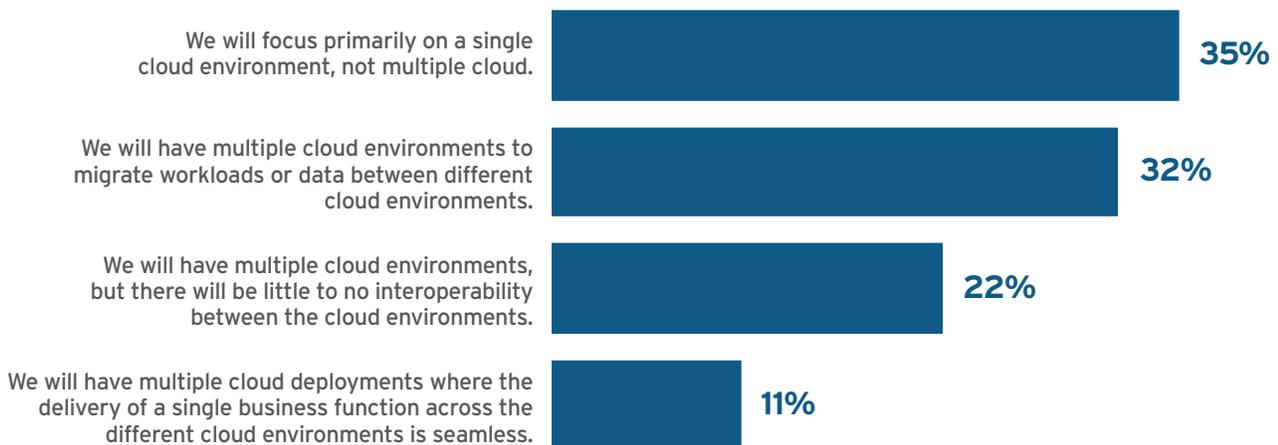
Of the UK organisations pursuing a multi-cloud strategy, about 32% will be migrating workloads or data between different cloud environments. About one in five UK organisations surveyed will have little if any interoperability between their cloud environments. A small, but growing number of cloud users in the UK will use hybrid cloud where a single business function or application is delivered seamlessly across the various cloud environments that are available to them.

Key drivers for multi-clouds and hybrid clouds are agility and flexibility; the potential to maximise ROI for existing IT infrastructure; and the growing desire to adopt a 'capex light' strategy by increasingly hosting new applications in off-premises clouds.

Figure 3: Cloud Usage Expectations - UK

Q: Which of the following best describes how your organisation will use different on-premises and off-premises cloud environments over the next two years? n=150

Source: 451 Research, Commissioned Research Q1 2017



Cloud deployment trends

Organisations are using multiple clouds to meet different needs. However, the use of true hybrid architectures (single applications seamlessly spanning multiple clouds) is still fairly limited (about 11% in the UK) as shown in Figure 3. The complexity added by hybrid cloud may, for now, outweigh its perceived benefits. Nevertheless, moving applications and data between public and private clouds will be a typical use case, and supporting migration will be a necessary capability.

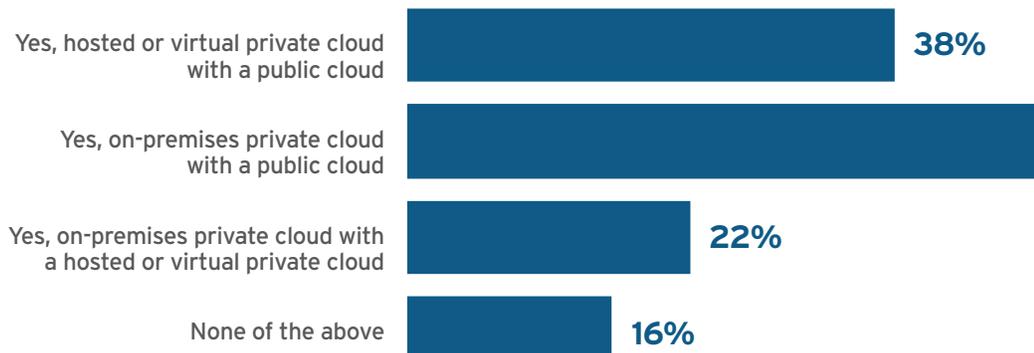
Data from multiple global surveys conducted by 451 Research shows that the most common

hybrid cloud deployments are a combination of on-premises private cloud and public cloud, followed by hosted private cloud with public cloud. In addition, we found that the most common use case for multiple clouds is a one-time deployment to meet a particular application need or service request rather than splitting tasks between clouds or sharing data between them. However, as shown in Figure 4 below, a significant number of organisations in the UK are aggressively pushing strategies to promote greater interoperability among the different clouds.

Figure 4: Level of Interoperability Between Clouds - UK

Q: Has your organisation configured any of the following clouds for seamless interoperability? n=150

Source: 451 Research, Commissioned Research Q1 2017



While drivers may vary from one organisation to another, we have identified a few common factors that are driving workload-placement decisions:

COST

Cost is always part of the decision-making equation. About 61% of organisations we surveyed globally in 2016, including the UK, expect to see a drop in hardware spending with on-premises cloud; savings will accrue from decreased server, storage and network spending. Cost optimisation of on-premises private cloud combined with burst capacity to public cloud may, in many cases, prove to be a more economical and less-disruptive approach than all-in public cloud migration.



AGILITY

In all 18 workload categories we studied in our 2016 Voice of the Enterprise survey, one of the top three (if not the top) reasons for deploying in the cloud was to respond faster to business needs. Also, 35% of organisations said that responding faster to business needs was their most important goal for their IT environment (reducing costs was highlighted by 23%).



CONTROL AND IT CENTRALISATION

These two factors are the top drivers for private cloud environments. Hosted and on-premises private cloud will most likely become the deployment models of choice for traditional business applications moving to the cloud.



SECURITY

Security concerns continue to be one of the top three IT pain points according to our Voice of the Enterprise research. By default, workloads involving highly sensitive data will most likely reside in on-premises environments (cloud or non-cloud).



REGULATION AND COMPLIANCE

CIOs in highly regulated industries continue to proceed with caution when deploying workloads in cloud environments, especially in public clouds. Over time, regulators will become more confident about cloud security.



**DIFFERENT CLOUDS,
DIFFERENT DRIVERS**

The business case for using cloud has economic, organisational and technological dimensions across the different cloud models.

Hardware cost savings factor in prominently with infrastructure as a service (IaaS) and private cloud environments, and are less important from a software-as-a-service (SaaS) perspective. Unsurprisingly, improved security is a key driver for on-premises private cloud; scalability for peak demand is a key requirement for IaaS; and management simplicity is critical for SaaS.

**NON-CLOUD WORKLOADS
PLUMMET**

The biggest change we expect over the next two years is the decrease in the number of applications that are running in non-cloud environments.

Important trends have emerged from the data we have collected on individual applications. On-premises private cloud is a popular destination for most workloads; however, we predict a decline in its use for email and collaborative applications, and an increase in its use for data/analytics and shared IT infrastructure workloads.

For IaaS, the highest-use categories are web/media and application development workloads. Data and analytics workloads represent a promising growth opportunity for all cloud models, but especially so for IaaS. In fact, IaaS growth predictions are high for all workload categories, pointing to growing confidence in the model as a viable enterprise option.

Hosted private cloud is robustly used across a wide variety of workloads, and SaaS shows high rates of usage and strong growth in the email/collaborative and business application workload categories.

Figure 5: Key Factors in Building a Business Case for Cloud

Q: What are the key factors in building a business case for X cloud at your organisation?
Source: 451 Research, Voice of the Enterprise: Cloud Computing Q4 2015

On-Premises Private Cloud

n = 491

1. Improved Security
2. Hardware Cost Savings
3. Improved Availability/Uptime

Hosted Private Cloud

n = 378

1. Hardware Cost Savings
2. Less to Manage Internally
3. Scalability for Peak Demand

IaaS

n = 420

1. Scalability for Peak Demand
2. Hardware Cost Savings
3. Speed/Time to Market

SaaS

n = 739

1. Less to Manage Internally
2. Staff Savings
3. New Functionality

Cloud deployment challenges

451 Research has found that three types of application deployment for cloud will be equally important: deploying new applications, modernising existing applications, and migrating existing applications. Cloud service providers should address all three deployments.

For all its benefits, hybrid cloud is still a complex proposition when it comes to execution. Nev-

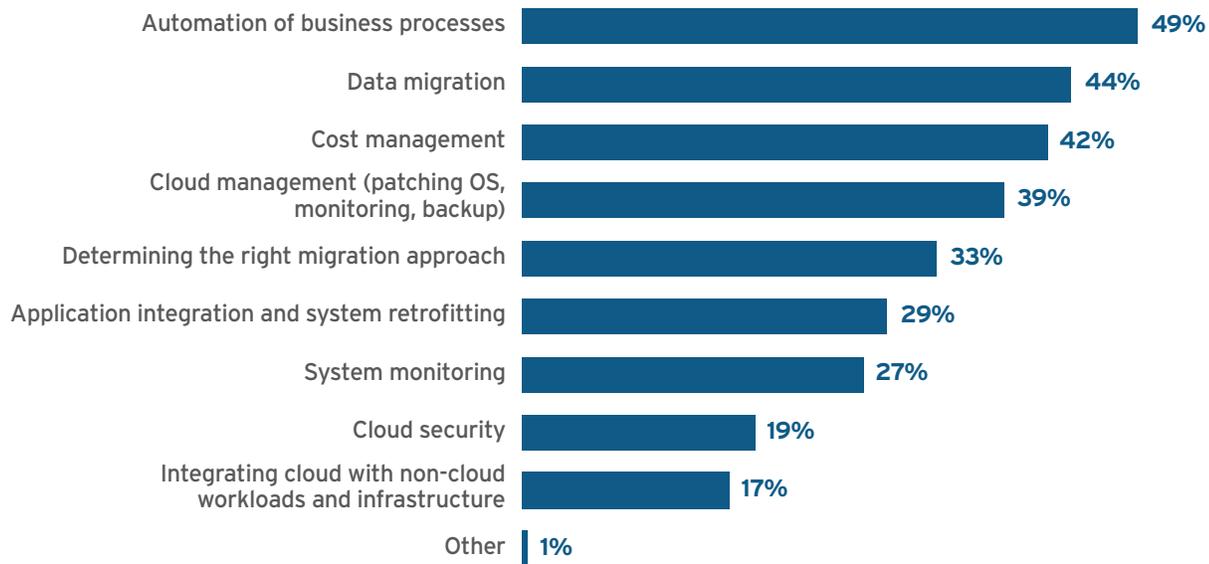
ertheless, cloud vendors and service providers are improving their hybrid capabilities to make consistent deployment across multiple cloud environments easier.

Organisations we surveyed in the UK point to automation, migration and cost management as the three most challenging aspects of cloud deployment.

Figure 6: Cloud Deployment Challenges - UK

Q: What does your organisation consider as the most challenging aspects of cloud deployment? n=150

Source: 451 Research, Commissioned Research Q1 2017



Conclusions and Recommendations

451 Research believes that the increasing use of multiple and hybrid clouds will both simplify and complicate the lives of enterprise CIOs and IT leaders. **However, the ability to mix and match deployment choices will provide the necessary agility, flexibility, control and security – as well as a cost-effective solution – that today’s businesses need to remain competitive.**

As business operations become increasingly digital, a workload-specific strategy will help organisations bridge the gap between IT requirements and line-of-business requirements.

A hybrid approach will enable IT to assume a more strategic and less operational role, optimising access to both internal and external IT resources that make the business run and grow.

Enterprises are increasingly using multiple clouds to meet different requirements. However, having a single application or business function seamlessly and consistently deployed across these environments (true hybrid cloud) is still an aspiration for most. That said, moving applications and data between public and private clouds will at some point be a typical use case, and cloud vendors and service providers are stepping up with hybrid capabilities in an effort to make this easier for end-user organisations.



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