



THE RISE OF HYBRID IT

In The Cloud Era, Enterprises Are Stepping Away
From Keeping Data Under Their Own Roofs And
Putting It Where It Delivers Most Value

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01

Background Information

To gain insights into the changing data centre and IT infrastructure strategies of European CIOs and Enterprise IT departments, influenced by increasing cloud adoption, IDG Connect surveyed 625 IT decision-makers about their current set-up and future plans. The respondents came from an equal spread across Europe including the UK, France, Germany, Spain, Austria, Switzerland, Ireland, the Netherlands, Belgium, Denmark and Sweden.

Our research focused purely on private-sector companies with 100-plus employees, most of which were medium-sized or large enterprises. We only questioned people with business, operations or IT management titles, all of whom were directly involved in IT decision making – 60% were decision makers. We excluded those who had fully outsourced IT, as well as people working in the IT industry (hardware, software and service providers).

With the aim of discovering how European enterprises plan to process, store and manage their workloads, we studied the state of cloud adoption, sourcing models, data centre decision-making criteria in the cloud era, the impact of virtualisation and the role of networking in cloud infrastructure.

Given the many and various terms for describing the various IT infrastructure sourcing models, we have used the following definitions:

- **Corporate data centres (including server rooms):** data centres either managed (a) in-house or (b) by a third-party.
- **Private cloud:** data centres operated with cloud-style provisioning and management tools under the control of the organisations themselves or a third-party.
- **Public cloud:** services delivered by a third-party application or technology platform provider, usually over the public internet.
- **Hybrid IT:** blended approach, mixing and matching the above tactics to gain the respective benefits of agility, cost effectiveness from a public cloud solution for some workloads and security/governance/control of an on-premise data centre for other workloads.



02

Introduction

Business is changing fast and IT strategies are keeping pace with those changes. Enterprises are buffeted from all angles by change, as online services displace physical transactions, globalisation creates new pricing pressure, and as governance and security challenges increase.

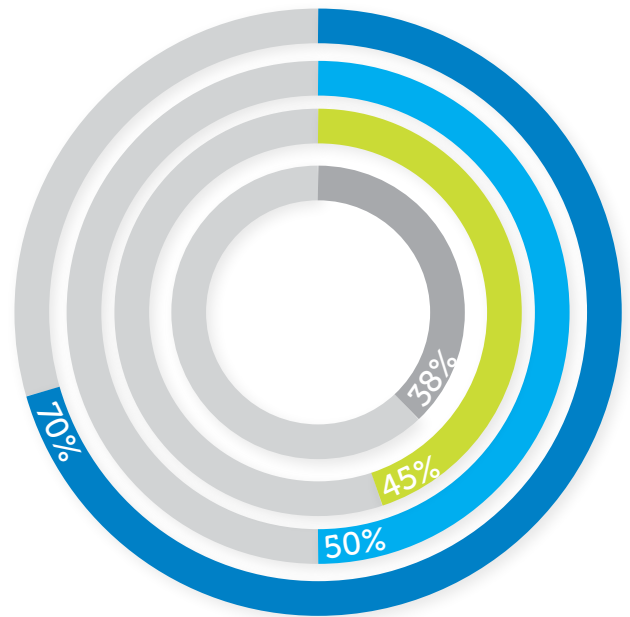
The IT sector has responded with new computing models as cloud computing makes it easier to try and test new ideas, to lower the cost of deployment and speed up time to market. Complementary changes in social networking, mobile device proliferation, broadband adoption, Internet-of-Things, and data analytics increase business opportunity but also require new approaches to data management.

Today, a key source of competitive advantage available to companies will lie in their IT infrastructure deployments and the business and analytical insight that those deployments will enable. However, strategic decisions on IT procurement, operations and partnering will involve balancing risk and reward, internal controls and trust in third-parties, current IT infrastructure and ideal setups. In this survey we set out to discover how European enterprise IT decision-makers currently run IT, their likely evolutions and what is driving those decisions.

03 IT Deployment Models Are Changing

How do you predominantly run your current IT infrastructure operations?

- CORPORATE DATA CENTRES
- PRIVATE CLOUD
- HYBRID IT
- PUBLIC CLOUD



When we asked our audience how they currently run their IT infrastructure operations, seven in ten said they use corporate data centres, half (50%) said they use private cloud and 38% said they use public cloud. But what is perhaps most notable is the how organisations are blending their approaches, with **45% stating that they use a hybrid approach combining data centres with either private or public cloud.**

This mixed picture is indicative of a market in flux. Over the history of IT, those that have not turned to outsourcing partners have typically run their own operations and those operations have grown organically as more servers, storage, networking and applications were accumulated over the years.

We all know that cloud computing provides a new and, for many, compelling alternative in terms of business agility, reduced upfront costs, 'elastic' compute capacity, fast project take-off, reduced administration overheads and a strong platform for test/development.

But a pure cloud deployment model has most appeal for companies with little or no legacy infrastructure. For all other companies, a hybrid IT model has most appeal because organisations can combine the need (or preference) to keep some services on-premise,

within their corporate firewalls with the advantages of cloud for applications and services that are not highly differentiated.

The hybrid approach promises a “best of both worlds” answer to the conundrum of modern information management with options that can be aligned to specific tasks.

Hybrid architectures should also incorporate the ability to switch dynamically between models so that IT leaders can have, for example, cloud-based 'burst mode' options to access added compute capacity where needed.

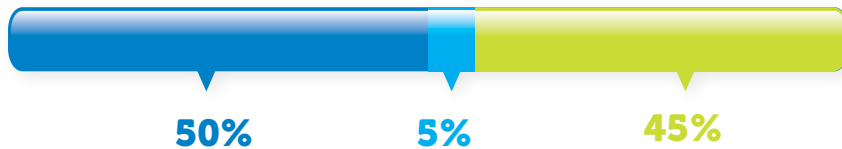
Often the decisions as to where data resides will be tactical or strategic. That is, a workload that is mission-critical or holding highly sensitive information might be kept inside the corporate firewall. An application that is largely undifferentiated might sit in the public cloud, on the other hand. A company might test an application on a private cloud and then switch to a public cloud platform for cost efficiency or back. It is possible to see this new hybrid IT model as some sort of virtual Tetris game where workloads move in and out of areas.

As we shall see in our next section, this hybrid approach is likely to become ever more popular.

04 Firms and Workloads Are Headed For Hybrid Approaches

How companies are deploying IT?

2014



2016



- EXCLUSIVELY DATA CENTRE
- EXCLUSIVELY CLOUD
- HYBRID IT

Having established an idea of which computing models are being used – corporate data centres versus public and/or private cloud infrastructure – in the previous section, we followed up by examining the models that are being proportionally used by workloads, adding up to 100 per cent per respondent.

Respondents said more than half of workloads (60%) run in corporate data centres, whether managed by themselves or by service providers. Private clouds account for 29% of workload deployments while the public cloud accounts for a little over a tenth of workloads (11%).

When asked about the distribution of those workloads in 18 to 24 months' time, responses suggest we will see organisations moving from corporate data centres (down from 38% to 34%) to private cloud. **Perhaps surprisingly, the percentage of workloads in public cloud is not expected to rise in the next 18-24 months.**

Or, looked at from the point of view of what companies are doing, the 50% that are exclusively data centre in 2014 will shrink to 16% in 2016 while hybrid IT swells from 45% to 80% and exclusively cloud stands almost still at 5%.

The proportion of workloads put in the public cloud is however expected to rise over a longer period of time. **Projecting five years, more than half of those polled (51%) said they would consider putting more workloads into the public cloud if their concerns are addressed.**

On-premise data centre operations are expected to remain a highly significant component of the way companies manage their mission-critical, sensitive data, whether managed internally or by a service provider.

The inevitable answer, therefore, when the question of how workloads will be managed in the near- to mid-future is via a combination of corporate data centres, private and public cloud. In other words, we are headed for a hybrid future.

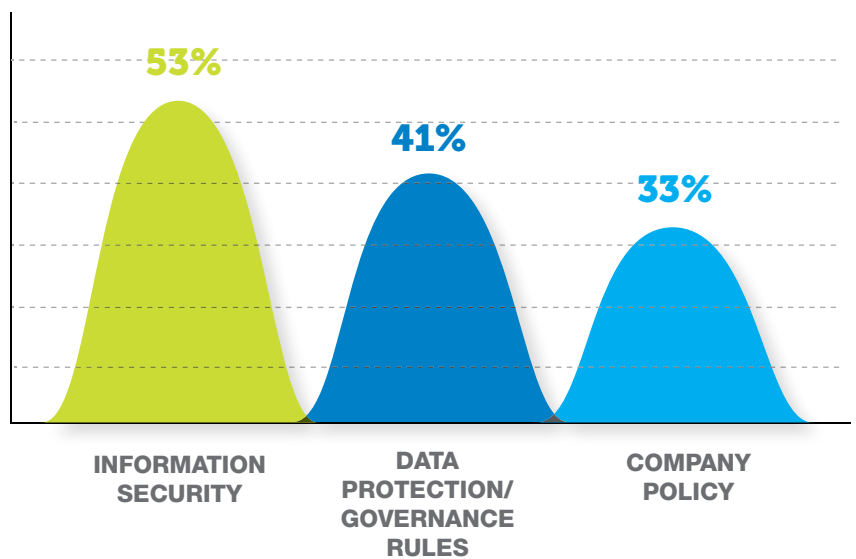
With all the line noise surrounding public cloud, it might be surprising to hear that there is significant conservatism about migrating workloads to public cloud – our next section helps to explain the likely reasons for this.



05 Security and Governance Lead Reasons for Keeping Workloads On-Premise



What are your reasons for keeping workloads within your data centre?



Asked for reasons as to why they keep workloads within their own data centres, perhaps predictably IT decision-makers answered information security first (53%) and its close cousins data protection and governance rules second (41%).

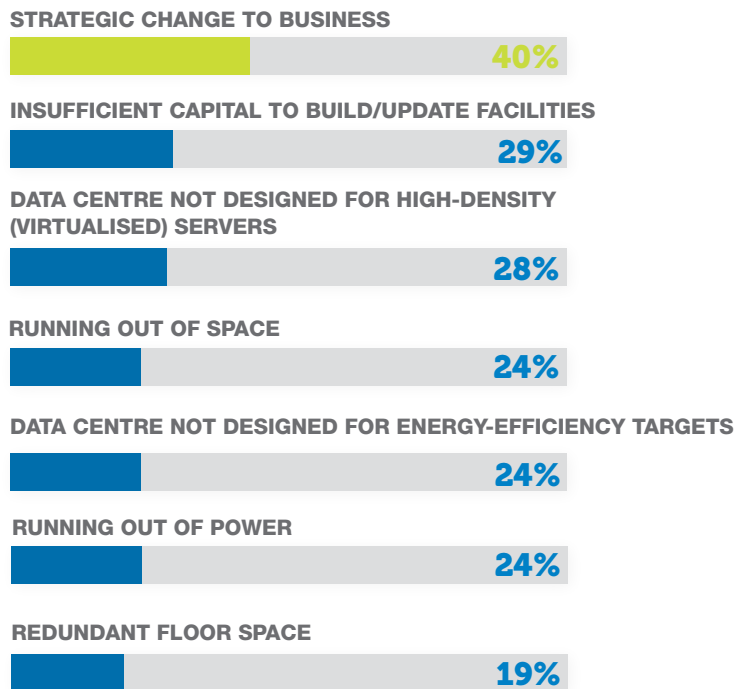
This has been a consistent response for many years and especially in the internet age. Enterprises fear data loss and damage to IT systems caused by malware and they fear the (often very public) repercussions of compromises as applied by lawmakers, regulators and others, as well as media sanction.

Other answers that featured strongly were company policy (for example, to avoid dependency on a single vendor) which garnered 33%. Other “soft” answers

include a preference for running private cloud now before moving to public cloud (24%), the desire to “touch and feel” servers (24%), a lack of readiness to make a big change (21%) and the belief that their required service level availability terms could not be guaranteed in the cloud (19%).

But “hard” issues also play a role. **Network connectivity issues were cited by 25% of those polled while 22% referred to application performance deterioration caused by latency, jitter or throughput issues.** A potential solution for these networking issues is outlined on Page 8 (Enterprises Are Going Direct to Connect Data Centres to Cloud’).

Events that Would Lead To Outsourcing the Data Centre



In the cloud era, the use of third-party data centres or colocation is growing, as organisations are increasingly accepting that running in-house data centres is no longer the optimal solution.

A fundamental change to business operations or tactical direction is the main reason for companies to externalise their data centre.

Four in 10 (40%) named an inflexion point such as corporate restructuring, change of business premises or a merger, demerger or acquisition. Clearly, when going through such periods of change companies will often have to seek quick alternatives that provide them with more agility and in these moments they look kindly upon third-party specialists.

Economic factors are also often tipping points. Lack of capital to build, expand or update existing facilities was the second most popular response with 29%. For many years, some executives have seen corporate data centres as a black hole for costs and, with ICT budgets often shrinking or flat, electricity prices near an all-time high and property rents often rising, hard decisions need to be made.

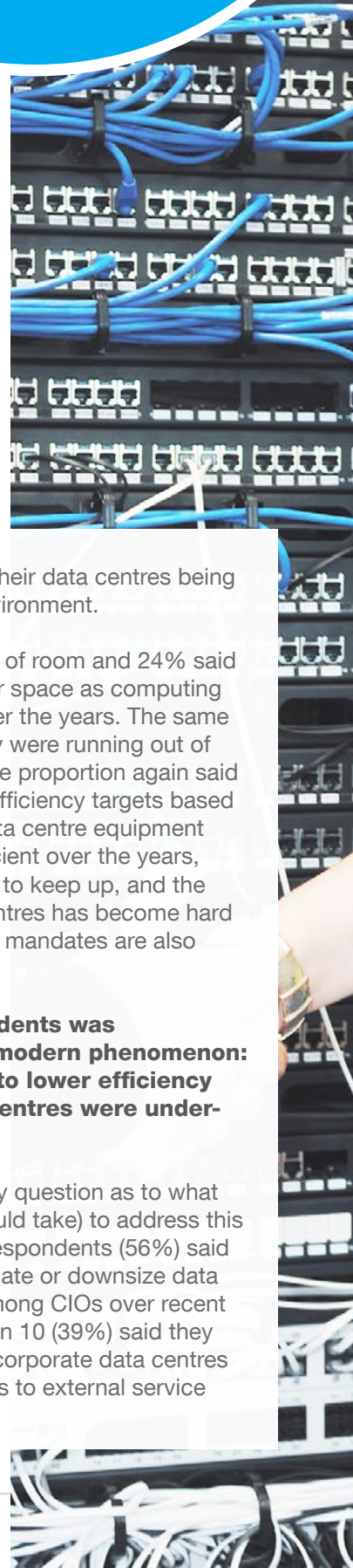
The changing demands placed on the data centre in the cloud era is also having a significant impact with 28% saying that their data centres were not designed for the modern world of high-density, heavily virtualised servers. As we will see on Page 12, the largest companies (with over 5,000 employees) have

a disproportionate sense of their data centres being not optimised for today's environment.

A related issue is simple lack of room and 24% said they were running out of floor space as computing demands have ballooned over the years. The same percentage number said they were running out of electrical power and the same proportion again said it was difficult to hit energy-efficiency targets based on current designs. While data centre equipment has become much more efficient over the years, many enterprises have failed to keep up, and the cost of power to run data centres has become hard to swallow for CFOs. 'Green' mandates are also becoming more common.

Almost one in five respondents was experiencing a relatively modern phenomenon: cloud migrations had led to lower efficiency because corporate data centres were under-utilised.

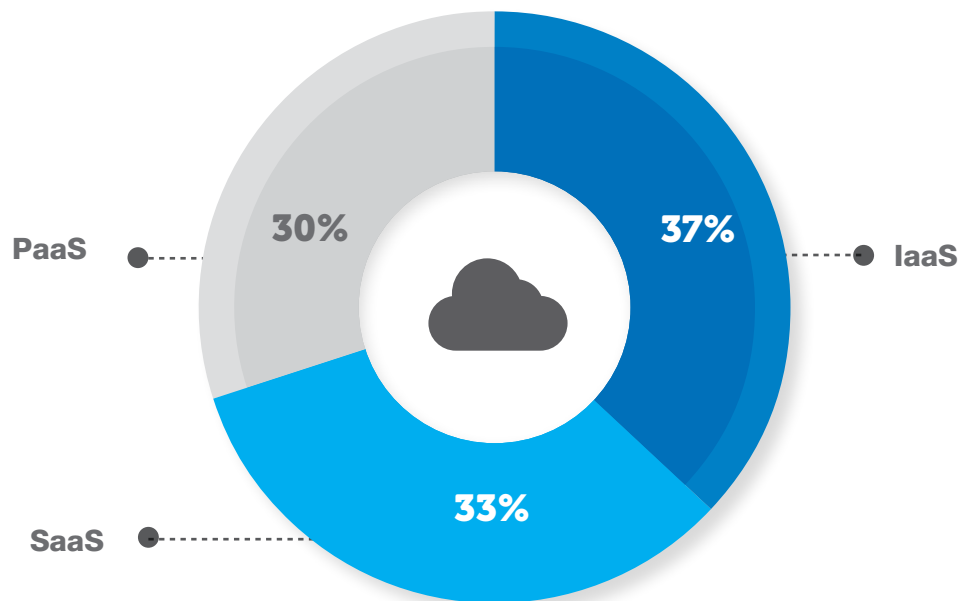
When asked a supplementary question as to what action they had taken (or would take) to address this situation, more than half of respondents (56%) said they had decided to consolidate or downsize data centres — a classic tactic among CIOs over recent years. However, almost four in 10 (39%) said they had closed, or would close, corporate data centres and move critical applications to external service providers.



07

PaaS is Gaining Traction

Which Cloud Deployment Models Do You Rely On?

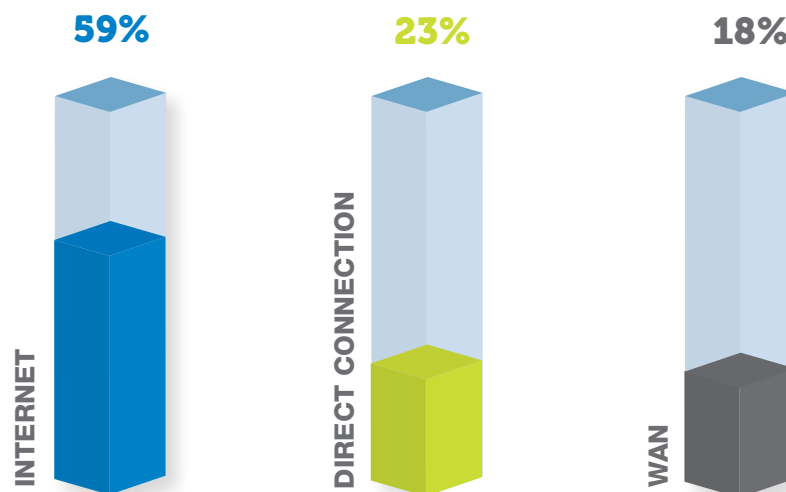


When asked about the cloud deployment models respondents' organisations rely on, the answers were quite evenly distributed. 37 per cent use infrastructure as a service (IaaS), the model covering the servers, storage, virtual machines and network management tools needed to run infrastructure. Next, 33 per cent pointed to software as a service (SaaS), referring to the applications such as CRM, messaging systems or other tools typically used to support productivity and collaboration. Finally, 30 per cent selected platform as a service (PaaS). This underlines the fact that the cloud is being used across the board, for provisioning, productivity and as an operating platform.

The role of PaaS might appear high compared to recent industry research but this may be down to a simple matter of definitions. 'PaaS' is usually intended to refer to one of the big cloud platforms: Amazon AWS, Microsoft Azure or Google App/Compute Engine, for example. However, these cloud providers increasingly offer complementary PaaS and IaaS offerings.

Also, it's important to state that these approaches will have different levels of importance attached to them. Our findings suggest that **while IaaS and SaaS are key spending areas, PaaS, with its broad area of responsibility, is often the deployment model ICT buyers literally rely on to run their business applications.**

How Is Your Data Centre Connected to the Cloud?



We asked our audience how their corporate data centre is, or will be, connected to the cloud.

A majority of respondents (59%) use the Internet to connect data centres to the cloud. This does however mean that **41% of enterprises feel that the Internet is no longer good enough, and bypass the Internet based on security and performance concerns.**

Almost a fifth use a WAN extension and almost a quarter (23%) say they use, or will use, a direct connection like AWS Direct Connect, Google Cloud Interconnect or Microsoft's Azure ExpressRoute.

The relatively high percentage opting for the new-ish model of using direct, private connections is perhaps surprising, given that these are currently only available in a few of the countries polled. However, they have had significant media coverage and it is likely that many of those who answered positively on deployment of these services are looking to the future.

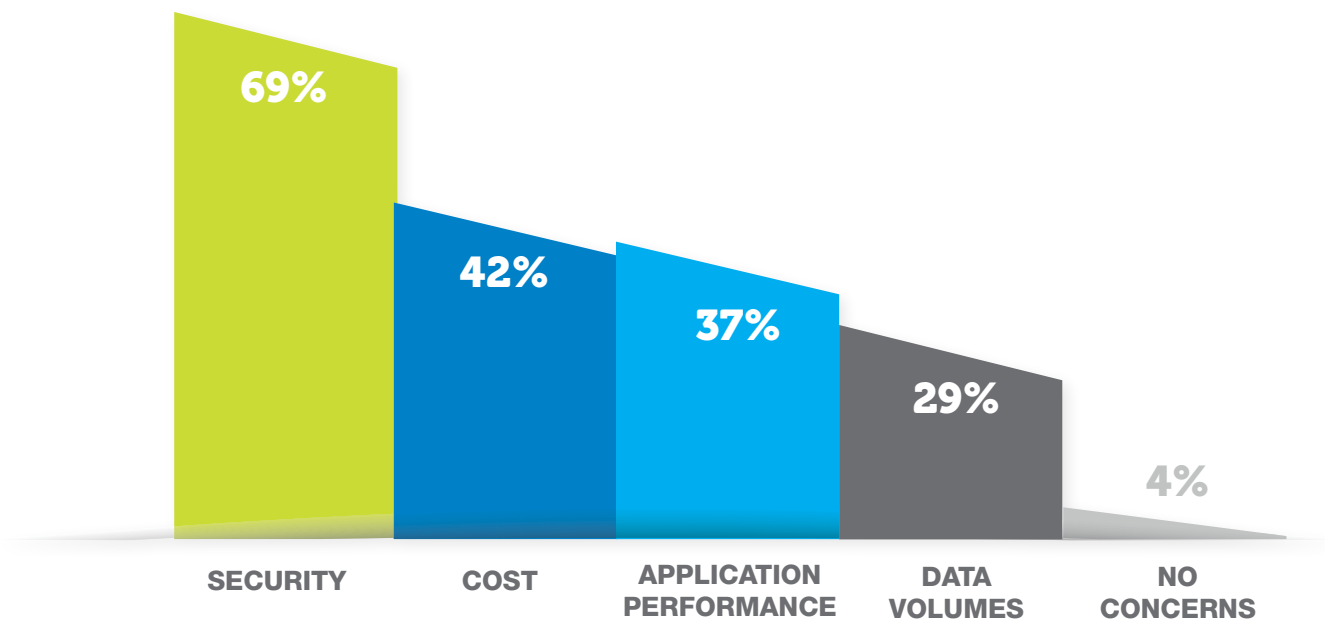
Why the excitement over these private connections? Because these links promise improved security, greater reliability, lower latency and faster services than internet connections. Colocation data centres will play an increasingly important role connecting enterprises to multiple cloud platforms through direct connections as well as networks and Internet.

09

Security Is Biggest Fear Over Cloud Connectivity



Network Concerns When Connecting to the Cloud



Cloud computing concerns very often involve security so it's no surprise that, asked about their network concerns when connecting to cloud-based applications, respondents nominated security as the number-one concern at 69%.

The next most popular answer was cost (42%), followed by application performance (37%), and high data volumes impacting services (29%).

Clearly, while cloud service providers say that their services can match on-premises services, IT decision-makers still have their doubts about bandwidth, latency and potential impact on service delivery. Just 4% said they had no concerns.

However, more than three-quarters of those surveyed (77%) said they would move more workloads to public or private cloud if their issues could be addressed. How many more? As the previous section on direct connections suggests, performance and reliability improvements would be a major advantage for buyers.

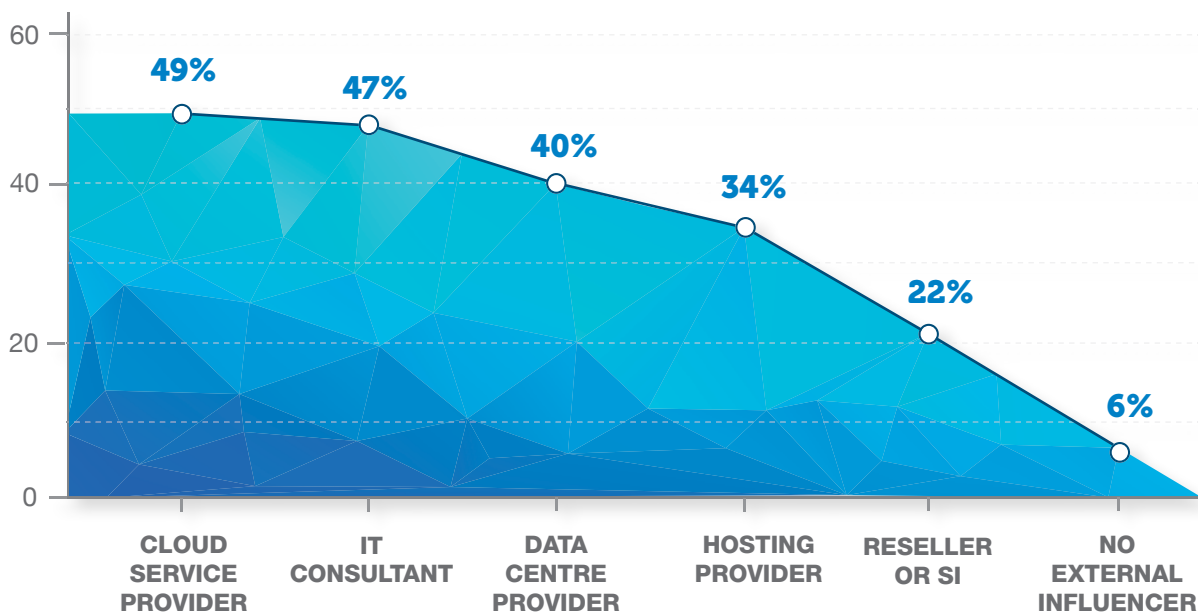
Our research suggests that 42% of workloads would go to the private or public cloud if network issues were no longer a factor.



10

Cloud Providers are Most-Used Advisors on Infrastructure Strategy

External Influencers Involved in Future IT Infrastructure Strategy



When it comes to seeking counsel, **cloud service providers are the most called on source of external advice for companies considering IT infrastructure decisions.** Almost half of all respondents nominate them as advisors.

This is a striking finding and shows the way in which the new breed of service providers has changed thinking on data centre strategy. The cloud providers understand the new architectures and are holding sway when enterprises reach a crossroads in their infrastructure plans.

However, the world hasn't turned completely upside-down and the cloud providers are followed closely by

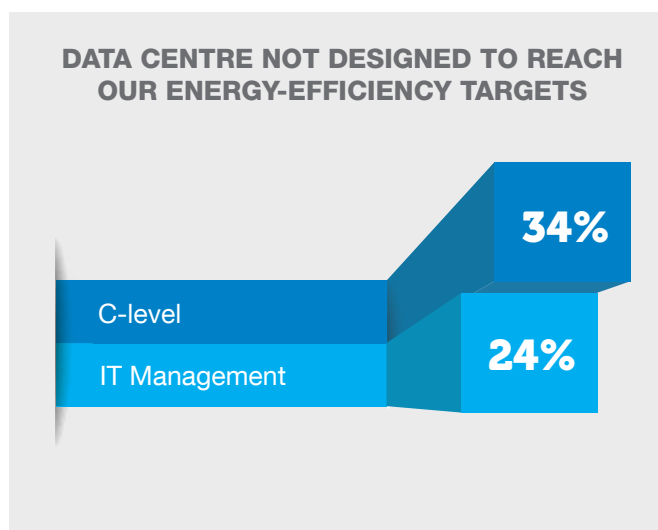
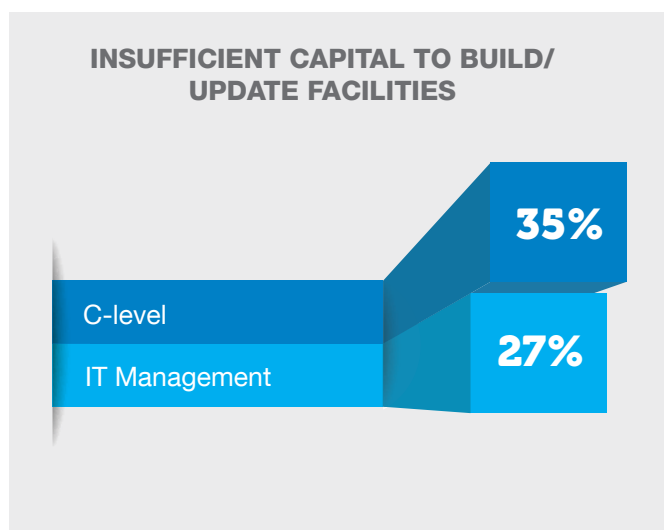
IT consultants before a gap to data centre providers, hosting providers and systems integrators. Systems integrators may discover that in order to remain relevant they will need to focus their attention on knotty questions of infrastructure more than ever before. If they do this then they stand a chance to remain relevant as companies wrestle with linking current infrastructure with assets that increasingly sit in various cloud models. Just 6% said they needed no external counsel.

Expect heavy marketing as all of the above contingents go head-to-head to win mindshare among customers at critical junctures in their planning.

11 Thinking On Cloud is More Conservative Than You Might Imagine



Events Leading to Outsourcing the Data Centre



We broke down audience responses to compare and contrast C-level executives and IT management. When we compared the responses, there was some variance among the audience constituencies.

One example came when we asked the audience to state how they currently run IT operations. Three-quarters of C-level executives (75%) said they run corporate data centres or server rooms compared to 69% of IT leaders, pointing to a possible perception gap between the two camps.

The numbers change radically if we fast-forward to where these people feel they will be in five years with **63% of the C-level audience and 53% of IT managers saying they expect to consider moving more workloads to the public cloud**. Still, this does not reflect the sort of wholesale paradigm

shift predicted by some cloud advocates. It may be that, like the shift from mainframes to client/server, reality lags behind media hype, and the move, genuine though it is, takes longer to materialise.

Even more interesting were the responses relating to events that led (or would lead) to outsourcing the data centre. Here, insufficient capital to expand or build new data centre facilities was cited by 35% of the C-suite, compared to just 27% of those in IT management. This underlines the way that costs associated with IT are becoming more widely understood by company leaders. By the same token, it was also notable that CxOs also saw energy-efficiency as a bigger catalyst for using a 3rd party data centre (34% versus 24%). With energy tariffs and ground rents running high and with green mandates in place, the data centre is clearly impinging on the consciousness of executives that might never previously have given these spaces a second thought.



12 Big Firms Must Deal With IT Legacy

33%

of companies with 5,000+ staff have corporate data centres or server rooms

Examining the splits between larger and smaller companies provides some very interesting insights.

The corporate data centre is the most common IT infrastructure model across organisation sizes. However, the highest percentage figures come from the largest organisations, with 77% in companies with 1,000-4,999 staff, and 73% in companies with 5,000+ employees. Here, the common notion of the largest companies - with their legacy issues and need to avoid risks - being sometimes slow to move is confirmed.

When asked about reasons for keeping IT inside the firewall, large companies were disproportionately more likely to cite data protection and governance with half of those working at companies with more than 5,000 staff giving this response.

Conversely, the most likely to opt for a pure cloud infrastructure are the smallest businesses surveyed, with 32% of the sub-500-employee group and 37% of the 500-999-employee set. This underlines the point that organisations with little legacy infrastructure in

place are most likely to go all-out for cloud computing and its advantages of fast setup and low upfront cost. Turning to events most likely to lead to outsourcing, insufficient capital is cited by far more companies (38%) in the 1,000-4,999 category. This could be evidence that larger organisations are making a conscious decision to lease data centre space rather than building them themselves, or it could point to there being a 'cash crunch' in companies that are seeing the need to scale quickly.

Another significantly different response in the largest companies (5,000+ staff) is that they are the most likely (33%) to see their data centres as not being capable of adapting to the new world of dense, heavily virtualised servers. Clearly this is a case of aging infrastructure and server rooms no longer being ready for the latest approaches. With real estate at a premium, even strong, financially healthy companies will think twice before committing to internal expansion.

13 Conclusion



The overall finding that emerged from our research was that European enterprises are blending their IT infrastructure sourcing models to be able to address opportunities and minimise risks. Whereas 10 years ago, client/server deployments located on the premises of European enterprises would dominate, today the picture is very mixed and multi-sourcing has fast become the norm in architecting modern IT infrastructures.

For one thing, **enterprises have a far broader range of options.** They can, of course, continue to take an approach where hardware, software and data assets are closely controlled within the corporate firewall by internal staff. Alternatively, they can choose to use a third-party to manage those assets but they may also elect to use a public cloud model or a private cloud to gain some of the benefits of the above.

A combination of these tactical options are being exploited to help companies through uncertain times. As Europe awaits confirmation that a long recession has gone for the foreseeable future and pursues the agility to deal with a globalising and increasingly digital economy, organisations opt to tap into the cloud, managed services and other models that provide operational excellence and commercial flexibility.

It is clear from this and other surveys that **enterprise cloud adoption has well and truly arrived** with 50% of companies running private cloud and 38% using public cloud services. However, that still leaves plenty of companies yet to start the journey with just 11% of respondents' workloads in the public cloud today. Our research shows that public cloud adoption in the next 18 months will be flat, based on concerns over, for example, network security, cost, data sovereignty and performance. But distribution of workloads will change dramatically from being 50% exclusively data centre in 2014 to 16% in 2016 while hybrid IT balloons from 45% to 80%.

With these issues resolved, **cloud adoption is likely to rise further.** Increased awareness and subsequent adoption of capabilities such as public cloud "direct connects" are likely to ameliorate enterprise concern over security, cost and performance of network connections and could further accelerate public cloud adoption.

However, it is not expected that we will ever see 100% public cloud adoption. Based on our research, **it is highly likely that hybrid IT will be central for years to come** with IT buyers multi-sourcing a mixture of approaches and deploying services across computing models.

Network connectivity is clearly a major factor. If this were fixed the number of workloads moving to private or public cloud would leap from 24% to 42%.

Leaps in improvement in connectivity, value and clarity over data sovereignty rules could change the picture again but the likelihood remains that European enterprises will 'drive in the middle lane', keeping faith with tried and trusted deployment models and only edging into the new world of cloud with minimal risk exposure.

So for enterprise IT planning, we recommend planning for a hybrid future. Locating your private cloud applications in a facility with proximity to the public cloud "direct connect access points" is key, not only in ensuring security and performance but also in optimising network costs. New enabling technologies such as public cloud direct connects and the facilities in which they are housed are undoubtedly driving the "Rise of Hybrid IT".

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