CLOUD INDUSTRY FORUM

Cloud UK

White Paper Twenty

Cloud: Driving Business Transformation

20

White Paper No. 20 - March 2017

Executive summary

Cloud is, at its heart, as much about transforming people and processes as it is about technology

Last year's report, *Cloud and the digital imperative*, warned that organisations must explore and exploit digital technologies and overhaul their processes from the ground up if they are to succeed in today's rapidly changing economy. That prognosis applies just as much – if not more so – in 2017 as it did last year.

We are entering an unprecedented time of change as digital technologies reshape industries, products and services, and customers' expectations. This change has not gone unnoticed by UK-based organisations and two in five respondents that we spoke to for this research project expect their organisation's sector and business model to be disrupted within the next two years.

In response to this threat of disruption, many organisations are putting in place Digital Transformation strategies, and while it is the minority that has implemented a Digital Transformation strategy today, three quarters expect to have done so by 2019.

As the term suggests, technology is pivotal to Digital Transformation, but first and foremost it's about organisational change and how organisations can reengineer themselves to take advantage of new digital technologies. Although true Digital Transformation is still in its early stages, we have already had a glimpse of what's in-store as new start-ups challenge well-established incumbents with radically new products and business models.

Questions remain, however, around how successfully UK-based organisations will be able to weather the storms of disruption, and respondents identify a wide range of barriers to their Digital Transformation efforts – chief among them, the perennial issues of privacy and security concerns, legacy IT, and a lack of executive sponsorship and skills. Moreover, having a strategy is one thing, but how this translates in practice on the ground is another.

Cloud is, at its heart, as much about transforming people and processes as it is about technology – and is therefore a critical component of Digital Transformation. How, then, are organisations using cloud services, and what impact, if any, is the delivery model having on the way that they operate?

The Cloud Industry Forum (CIF) commissioned this research, the sixth major end user-focused research project in this series, to better understand how UK-based organisations are using cloud services, their impact on businesses and the workforce and subsequently how well-placed they are to deal with increasing levels of digital disruption.

To reflect and understand the changing nature of IT procurement and the evolving role of the IT department, we have for the first time included business decision-makers (BDM) in our sample, split equally with IT decision-makers (ITDM). In doing so, we have gained a good picture of how cloud is impacting these historically loosely-linked groups and the data indicates that the two worlds are rapidly converging.

This intelligence paper explores these issues at length and sets out to comment on the following:

Snapshot of key findings

Digital Transformation:

- 44% of respondents currently have a Digital Transformation strategy and a further 32% say that their organisation intends to have one;
- Nearly six in ten (57%) say that making better use of technology is the key objective for their organisation's Digital Transformation strategy;
- Other key objectives are to achieve better use of data and analytics (47%) and to improve business agility (47%);
- 93% face barriers towards Digital Transformation, the most common being privacy/security concerns (48%) and existing investments in legacy systems (47%).

Use of cloud services:

- Around nine in ten (88%) respondents' organisations use cloud, each using an average of three cloud-based services;
- Nearly six in ten (58%) would describe their organisation's primary approach to IT as being that of a hybrid approach, while 15% primarily operate in the cloud;
- Around two in three (67%) cloud users expect to increase their adoption of cloud services over the next 12 months, and over half (54%) foresee that their organisation will move its entire IT estate to remotely hosted cloud services;
- The most commonly used cloud-based services currently are those for traditional webhosting (65%), but with a marked growth of PaaS (53%), and office productivity tools (50%).

Cloud migration:

- On average, it took 15 months to migrate applications to the cloud;
- Nine in ten (90%) experienced difficulties when migrating to a cloud solution, with the complexity of migration (43%) being the most likely difficulty. Other challenges include a lack of internal skills/knowledge (32%) and a dependency on Internet access (31%).

Cloud benefits:

- The top three reasons for initially adopting these services in their organisation were flexibility of delivery (74%), operational cost savings (72%) and scalability (65%);
- Over a third (36%) state that replacing legacy IT technologies was the main business objective driving investment initiatives in cloud within their organisation. Around three in ten list other business objectives as enabling innovation (29%) and business agility (27%);
- Seven in ten (70%) respondents are either currently seeing or anticipate seeing their organisation have a competitive advantage from utilising cloud services.

Inhibitors and security concerns

- More than three in five (62%) respondents are concerned with data privacy, while 44% feel the same for security concerns;
- The biggest inhibitor to moving more apps and/or infrastructure to the cloud, according to respondents, is a lack of budget (35%);
- Around three in ten states other inhibitors as business security and privacy concerns (30%), integration challenges with legacy systems (29%) and existing investments in legacy systems (27%).

Methodology and sampling

In February 2017, Vanson Bourne conducted the seventh major body of research on behalf of CIF to determine the level of cloud adoption among participants and to gain insights into attitudes, experiences and trends across the UK end user community.

The research polled 250 senior IT and business decision-makers in large enterprises, small to medium-sized businesses (SMBs) and public sector organisations. The organisations represented all had UK-based operations.

Respondents came from a broad range of industry verticals, including manufacturing, financial services, retail, professional services, and health. The public sector was also well represented, comprising 20% of the overall sample.

In which sector does your organisation primarily operate?

The research polled 250 senior IT and business decision-makers in large enterprises, small to medium-sized businesses (SMBs) and public sector organisations

Definitions:

Cloud computing

There have been many definitions of cloud computing since the term was first coined in the 1990s. It has, to an extent, become a catch-all term for hosted IT services of any type, including, but not limited to, multi-tenanted services accessed via the internet.

However, for the purposes of this report, we have used the National Institute of Standards and Technology's (NIST) definition of cloud, which is as follows:

Cloud computing is a term that relates to the IT infrastructure and environment required to develop/host/run IT services and applications on demand, with consumption-based pricing, as a resilient service. Communicating over the internet and requiring little or no client end components, it provides resources and services to store data and run applications, from many devices, anytime, anywhere, as-a-service. The services can, in turn, be scaled up and down as needed to meet a customer's variable operational needs, ensuring maximum cost efficiency.

Digital Transformation

Digital Transformation is about more than just turning analogue processes into digital ones; it relates to the ground-up critical examination of an organisation to look at how it does things and reimagine how it interacts and engages with its employees, partners and customers. As the name suggests, technology is central to Digital Transformation, but it is first and foremost about business change and how businesses can reorientate themselves to take advantage of digital technologies.

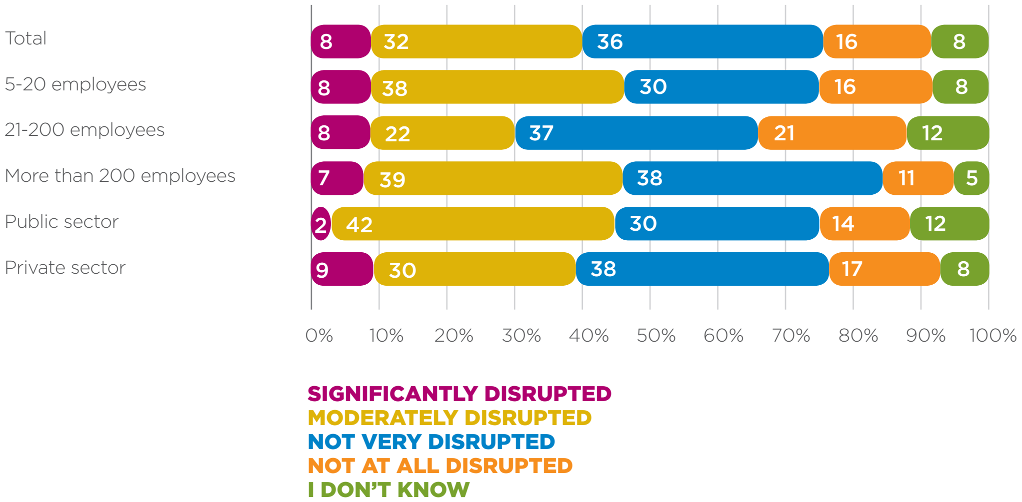
1. Digital Transformation

Two years ago, the central theme of the World Economic Forum was the Fourth Industrial Revolution, which posits that the dual forces of extreme automation and extreme connectivity are fuelling completely new approaches to doing business and mass disruption.

We wanted to understand how keenly UK-based organisations felt the threat of that disruption, what steps they were taking to counter it and the challenges that they faced along the way.

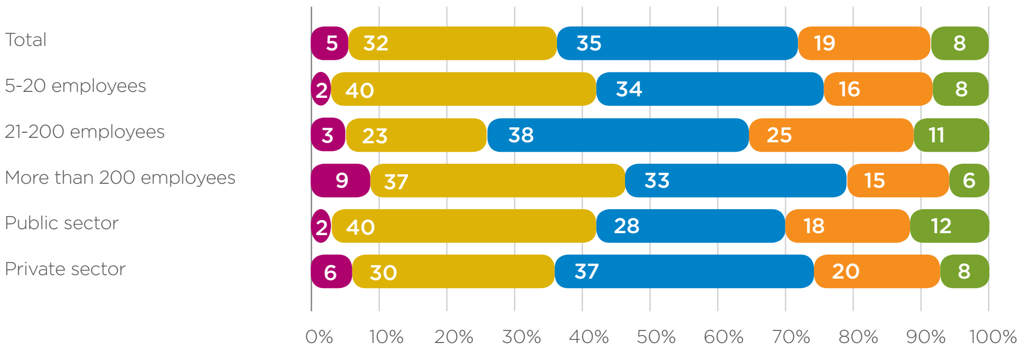
It is clear that many believe that there are some big changes on the horizon. Two in five respondents expect their organisation's sector to be moderately or significantly disrupted by Digital Transformation within the next two years, and a similar proportion (37%) expect the same for their organisation's business model.

To what extent do you think that your organisation's sector will be disrupted by Digital Transformation in the next two years?



Two in five respondents expect their organisation's sector to be moderately or significantly disrupted by Digital Transformation within the next two years

To what extent do you think that your organisation's business model will be disrupted by Digital Transformation in the next two years?



Against this backdrop, it should come as little surprise that many organisations have transformation in their sights. Some 44% of organisations surveyed have already implemented, or are in the process of implementing, a Digital Transformation strategy, and a further 32% expect to have done so within the next two years.

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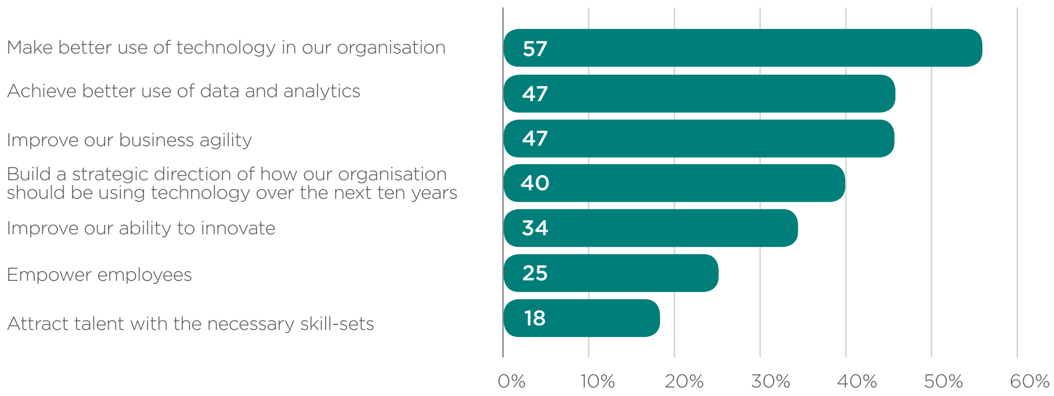
Does your organisation have a Digital Transformation strategy?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Yes, we have a Digital Transformation strategy in place	**16%**	14%	13%	19%	14%	16%
Yes, we are currently implementing our Digital Transformation strategy	**28%**	14%	20%	42%	30%	27%
No, but we intend to have one in the next 12 months	**22%**	30%	22%	17%	28%	20%
No, but we intend to have one in the next 24 months	**10%**	14%	13%	5%	2%	12%
No, and we do not intend to have one in the near future	**18%**	28%	22%	9%	14%	19%
I don't know	**6%**	0%	10%	8%	12%	6%

The core objectives of these strategies? Six in ten state that their Digital Transformation efforts are designed to make better use of technology within their organisations, and around half want to achieve better use of data and analytics, and improve business agility.

What are the key objectives for your organisation's digital transformation strategy?



It is worth noting here the relatively small proportion of respondents, which state that their Digital Transformation strategies are designed to attract, retain and/or empower their employees. As we explore later in this report, ever fiercer competition for appropriately-skilled members of staff will make this area a key battleground in the years to come.

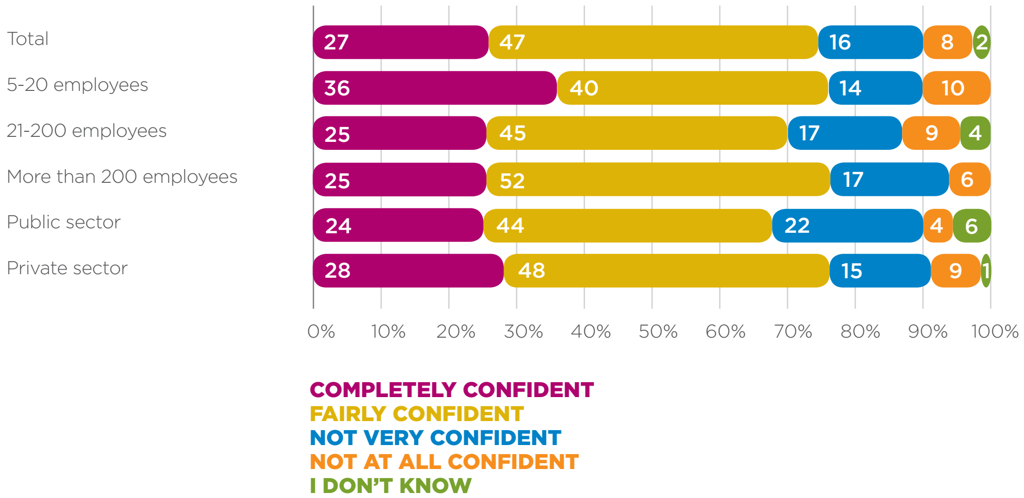
Skills and leadership

Although Digital Transformation is most likely to be driven by the CIO/Head of IT (37%) or CEO/MD (32%), large-scale organisational change requires the buy-in and support from all members of the senior leadership team if it is to be successful.

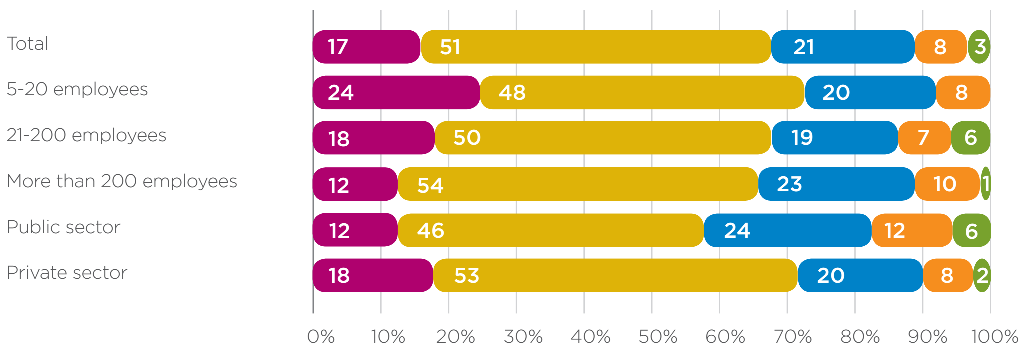
However, while respondents believe that their senior leadership teams generally recognise the need to deliver Digital Transformation, they are less confident in their ability to actually deliver it – particularly in the public sector.

Around a quarter have complete confidence that their leadership team recognises the need for Digital Transformation – and only 17% are completely confident that they will be able to pull it off. Worryingly, just 12% of respondents from the largest organisations in the sample and 12% from the public sector are completely confident that the leadership team will be able to deliver Digital Transformation.

How confident are you that your leadership team recognises the need to deliver Digital Transformation?



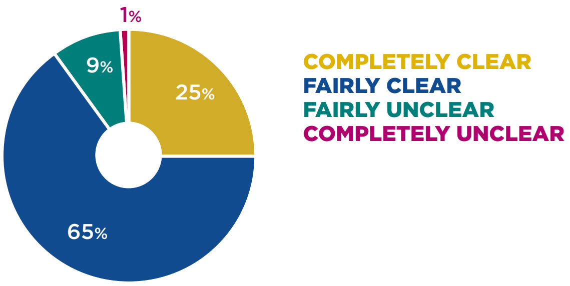
How confident are you that your leadership team has the ability to deliver Digital Transformation?



Respondents believe that their senior leadership teams generally recognise the need to deliver Digital Transformation, but they are less confident in their ability to actually deliver it

These reported deficiencies in leadership may go some way to explaining the relative lack of clarity in respondents' organisations' Digital Transformation strategies. Just a quarter of respondents stated that their Digital Transformation strategy was completely clear, indicating that there is considerable room for improvement.

How clear is your organisation's Digital Transformation strategy?



Having the right skills in the broader workforce to deliver Digital Transformation is similarly critical. However, just 45% of respondents believe that their organisation has the skills required to adapt to Digital Transformation. Although 15% are actively recruiting to plug their skills gaps, three in ten have no plans to do so.

Does your organisation have the right skills in place to adapt to Digital Transformation?

55% of respondents believe that their organisation does not have the skills required to adapt to Digital Transformation

Barriers to change

Other barriers do exist, and almost all (94%) respondents report facing barriers to their organisation's Digital Transformation of some sort. Privacy and security concerns top the bill, cited by 48% of respondents, followed by existing investments in legacy technology (47%), and a general unwillingness to take risks (39%). In addition, a quarter see a lack of skills as a major barrier to their organisation's Digital Transformation.

Privacy and security are the most-cited barriers to Digital Transformation, followed by legacy IT and an aversion to risk

What are the top three barriers to your organisation's Digital Transformation?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Privacy/security concerns	**48%**	53%	41%	51%	46%	48%
Investments in legacy systems	**47%**	42%	54%	42%	35%	49%
Unwillingness to take risks	**39%**	33%	37%	43%	54%	35%
Lack of required investment	**34%**	22%	32%	40%	30%	35%
Lack of agility in IT	**30%**	33%	25%	34%	35%	29%
Poor strategy	**27%**	36%	25%	24%	30%	26%
Lack of skills	**25%**	31%	25%	23%	27%	25%
Lack of executive sponsorship	**19%**	11%	24%	18%	16%	19%
Unable to attract talent	**9%**	11%	7%	8%	11%	8%
No barriers to Digital Transformation	**6%**	8%	7%	4%	5%	6%

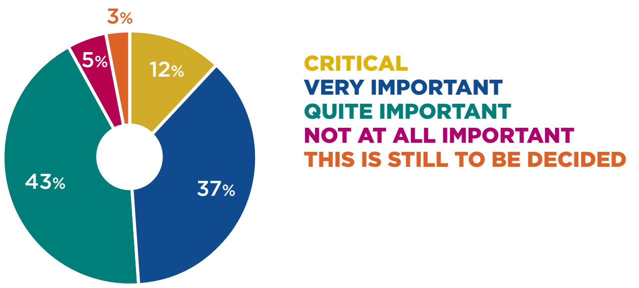
Cloud and Digital Transformation

Flexibility and agility are the orders of the day in uncertain times, and that applies as much to people and process as it does to technology. Cloud computing, which enables organisations to procure their IT on-demand and as-a-service, scaling up and down as required, is a natural fit here.

At its simplest level, cloud is all about enabling business transformation and efficiency by delivering core IT capabilities as a service, without having to own or maintain them. In doing so, internal IT teams are able to focus on delivering value to their organisations and can experiment with new initiatives without having to make big upfront capital investments.

It should come as little surprise, then, that the vast majority of respondents in this research project believe that cloud is core to their Digital Transformation efforts. Some 92% state that cloud is important to their organisation's Digital Transformation strategy, with 49% believing it to be very important or critical.

To what extent is cloud important to your organisation's digital transformation strategy?



With that in mind, in the upcoming sections we examine how UK-based organisations are using cloud, the benefits they are achieving as a result and the barriers they face as they look to take advantage of the delivery model.

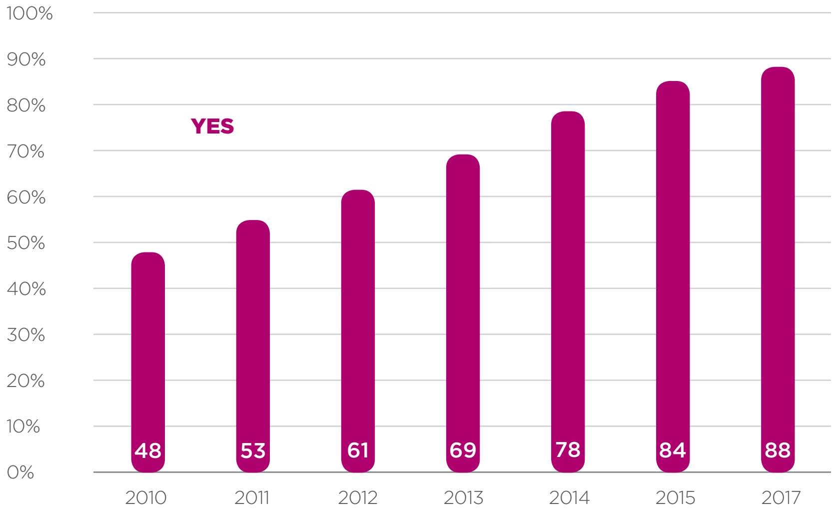
92% state that cloud is important to their organisation's Digital Transformation strategy

2. The cloud landscape

The Cloud Industry Forum first started charting the progress and development of cloud computing in the UK in 2010, and the changes in the market since then have been considerable. Seven years ago, not even half (48%) of organisations consciously used cloud-based services; a figure that has risen to 88% today.

The figures suggest that the cloud adoption rate will climb further still in the coming two years. Of those organisations not currently using cloud, half expect to do so in future, and data suggests that within two years, 93% of organisations will use at least one cloud service.

Does your organisation have any hosted or cloud-based services in use today?



Although the smallest organisations have historically trailed behind in terms of cloud adoption, they have made up a good amount of ground

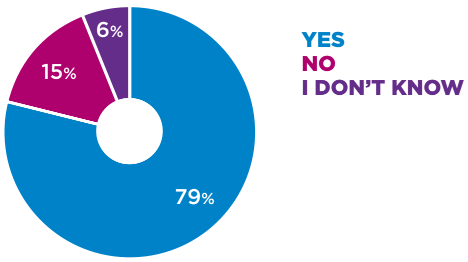
Broken down by size and sector, there have been a number of changes since last year and whereas organisations with fewer than 20 employees and those from the public sector have typically trailed behind in terms of overall adoption, they appear to have made up a good amount of ground.

Does your organisation have any hosted or cloud-based services in use today?

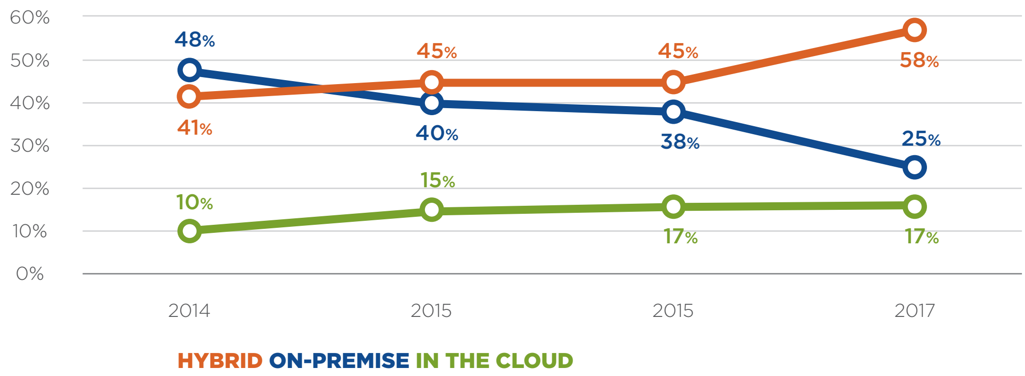
	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Yes	**88%**	82%	86%	93%	82%	90%
No	**10%**	18%	10%	5%	8%	10%
I don't know	**2%**	0%	4%	2%	10%	1%

Cloud is firmly part of the IT department's agenda – four in five include consideration for cloud services within their organisation's IT strategy. Moreover, a dwindling number of organisations state that their primary approach to IT is on-premise; just one in four state that their primary approach to IT is on-premise, compared to 38% a year ago.

Does your organisation include consideration for cloud services within its wider IT strategy?



Would you describe your organisation's primary approach to IT as being:

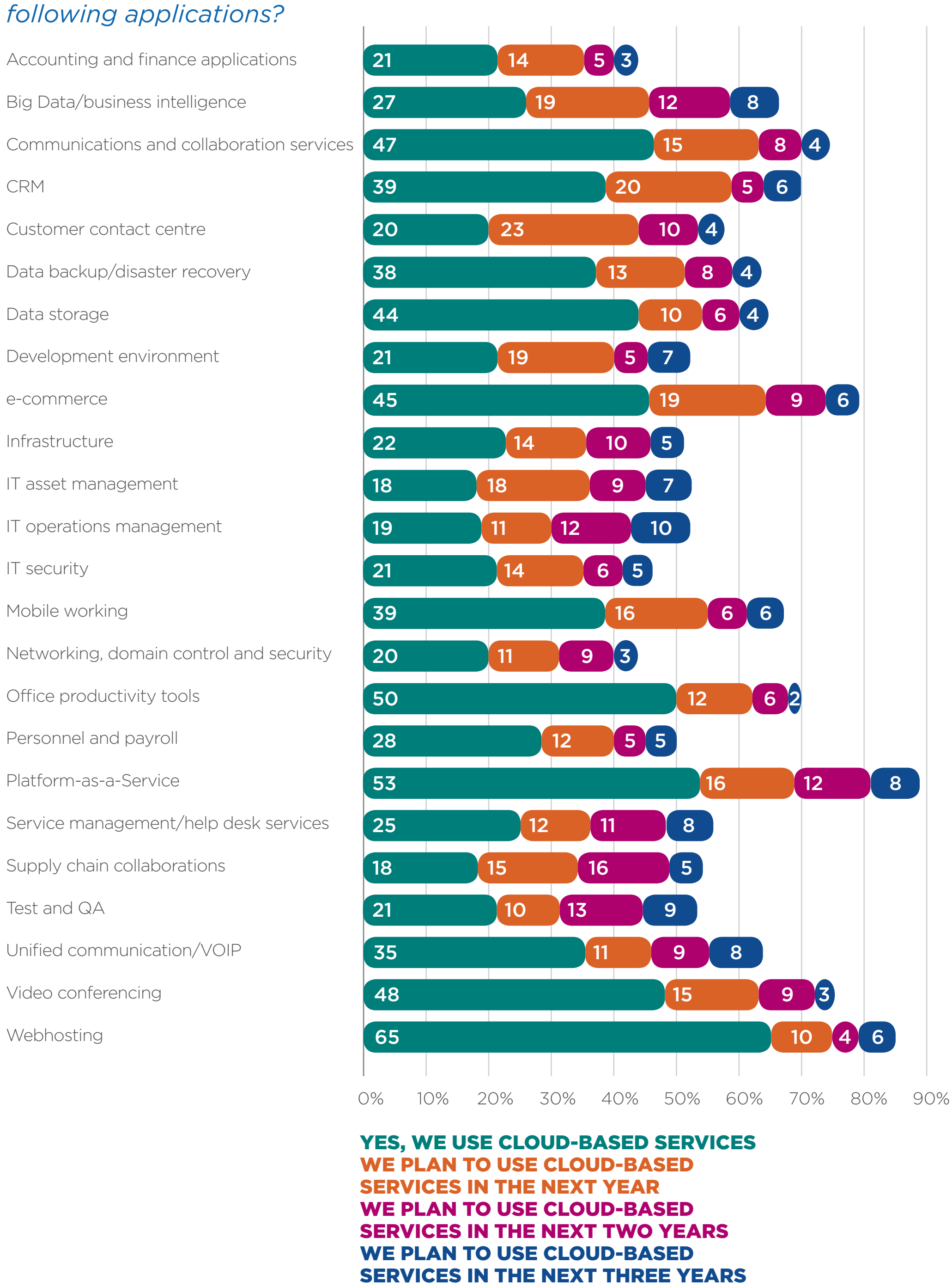


A dwindling number of organisations state that their primary approach to IT is on-premise; just one in four state that their primary approach to IT is on-premise, compared to 38% a year ago

The applications and services most likely to be cloud-based today are webhosting (65%), Platform-as-a-Service (which could cover many cloud options) and office productivity tools such as Microsoft Office 365 and Google Docs, used by half of respondents. However, the picture is expected to look somewhat different in three years' time, and while adoption of these three application types will continue to climb, we anticipate considerable growth in other areas.

By 2020, for example, three-quarters of respondents expect to have adopted cloud-based video-conferencing systems, while 70% plan to use the cloud for their CRM applications.

Does your organisation use cloud-based services for the following applications?



The applications most likely to be cloud-based today are webhosting (65%), PaaS (53%) and office productivity tools (50%)

There are clear differences between BDMs and ITDMs here, and the data suggests that BDMs are generally more open to hosting applications in the cloud than their counterparts in the IT department, who are more likely to want to keep applications on-premises. For example, 65% of ITDMs stated that they preferred to keep networking, domain control and security services on-premise, compared to just 45% of BDMs. We can witness a similar trend for personnel and payroll, mobile working, supply chain collaboration, and test and QA services.

Whether this is for technical, commercial reasons or more about perceived self interest remains to be seen. Furthermore, the desire for BDMs to move to cloud services also offers insight to prevalence of so called "shadow IT" and less structured procurement outside of the corporate IT department.

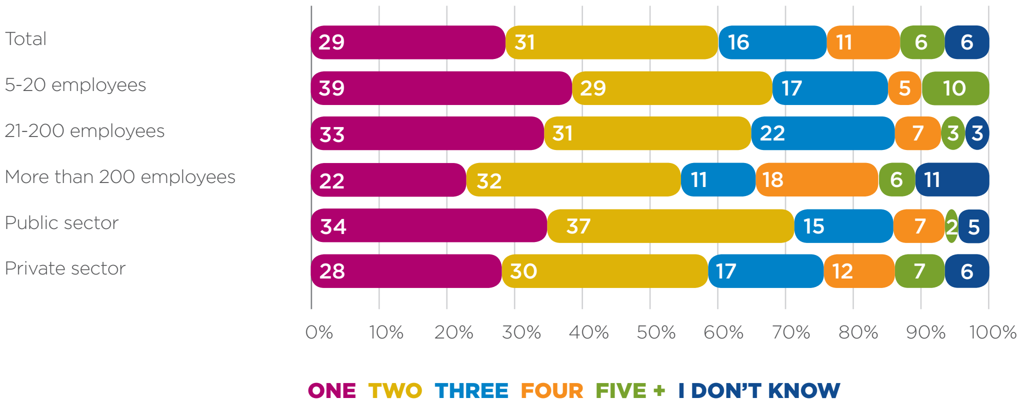
The data suggests that BDMs are generally more open to hosting applications in the cloud than their counterparts in the IT department

Depth of adoption

It is important to note that adoption remains relatively shallow for the majority. Six in ten respondents only have one or two cloud services in use today, meaning that the majority are still a long way from migrating their entire IT estates to the cloud.

Interestingly, 8% of ITDMs from organisations with more than 200 employees simply didn't know how many cloud-based services were in use. As indicated, one possible explanation for this is that some cloud procurement decisions have been devolved to a departmental level, meaning that the IT department has no oversight.

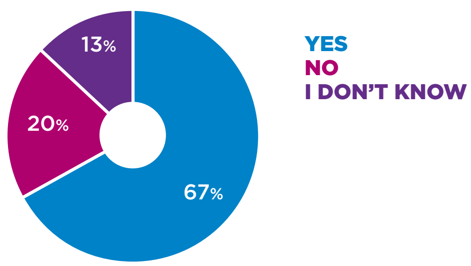
How many different cloud-based services does your organisation use today?



Organisations across the board are rapidly ramping up their use of cloud services and two-thirds of respondents expect to increase their organisation's adoption of cloud this year

However, adoption will not remain shallow for long. Organisations across the board are rapidly ramping up their use of cloud and two-thirds of respondents expect their organisation's adoption of cloud services to increase this year.

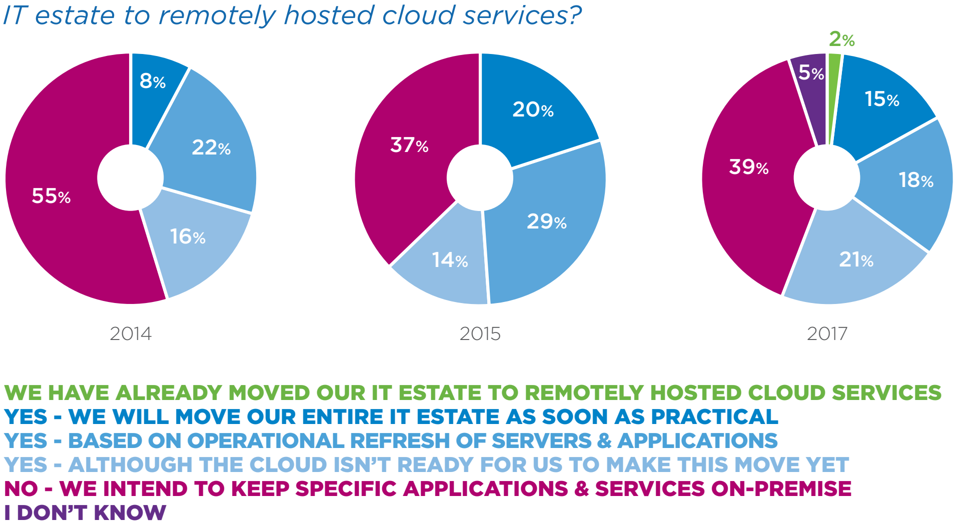
Do you expect your organisation's adoption of cloud services to increase over the next 12 months?



Moreover, more than half of organisations expect to move all of their IT estate to the cloud at some point (one in ten as soon as is practical). Indeed, 8% of the smallest organisations in the sample (those with fewer than 20 employees) have already gone 100% cloud and a further 62% plan to do so in future.

The picture is, perhaps understandably, somewhat different for the largest organisations we spoke to. Half of these organisations state that they will keep certain applications on-premises, this is largely due to legacy technology solutions that may not be ready to move to cloud.

Do you foresee that you will ever move your organisation's entire IT estate to remotely hosted cloud services?



More than half of respondents expect to move all of their IT estate to the cloud at some point in future

Some clear differences also emerge here between the perceptions of business decision-makers and IT decision-makers. 18% of BDMs state that they will move everything to the cloud as soon as is practical, compared to just 12% of ITDMs, suggesting that while the business case for doing so might be compelling, technical barriers exist.

Adoption of cloud services has continued to accelerate though the overall proportion of organisations expecting to move everything to the cloud remains at a similar level to that reported in 2015. Users are now considering more complex migrations and thus are demanding greater robustness and resilience from their suppliers. In some instances, the cloud proposition still needs further maturity to instil confidence, but users are also increasing their predominance of a hybrid solution for the foreseeable future.

Migration to the cloud

Although the time it takes to migrate to the cloud can vary significantly from application to application, on average, it took respondents around 15 months to complete (18 months for the largest, 10 months for the smallest).

On average, how long did it take to migrate applications to the cloud ?

Around nine in ten respondents faced some sort of difficulty when migrating: around two in five found it overly complex; a third struggled with a lack of internal skills and a similar proportion found the cloud's dependency on the internet a challenge. The largest organisations in the sample and those from the public sector particularly struggled with data sovereignty during their cloud migrations.

Which, if any, of the following difficulties did your organisation experience when migrating to a cloud solution?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Complexity of migration	**43%**	37%	38%	49%	54%	40%
Lack of internal skills/knowledge	**32%**	41%	29%	31%	41%	30%
Dependency on internet access	**31%**	37%	29%	31%	32%	31%
Data sovereignty concerns	**26%**	17%	20%	37%	37%	24%
Clarity of charges	**24%**	20%	28%	22%	32%	22%
Lack of business case	**22%**	17%	23%	23%	22%	22%
Vendor lock in	**21%**	12%	26%	22%	27%	20%
Contractual issues such as liability	**21%**	15%	16%	28%	24%	20%
Took longer, or than time quoted	**18%**	17%	16%	20%	24%	17%
Cost was more, or price quoted	**17%**	22%	12%	19%	29%	14%
No faith in vendor/channel partner	**12%**	2%	15%	13%	12%	12%

For three-quarters of respondents, these migration difficulties were not without consequence, resulting in delays in product/service development (in 39% of cases), lost employee productivity (34%) and revenue losses (14%).

What was the business impact of these difficulties?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Delay product/service development	**39%**	27%	35%	48%	39%	39%
Loss of employee productivity	**34%**	52%	27%	34%	45%	31%
Delay with products/services to market	**15%**	6%	14%	20%	21%	14%
Loss of revenue	**14%**	9%	13%	17%	18%	13%
Loss of customer confidence/loyalty	**12%**	12%	9%	14%	11%	12%
Loss of new business	**9%**	15%	10%	6%	16%	8%
Loss of repeat business	**9%**	15%	6%	9%	8%	9%
Loss of customers	**9%**	6%	9%	9%	8%	9%
These difficulties had no impact	**25%**	24%	29%	21%	21%	26%

Summary

Cloud services are the primary (cloud first) choice for most businesses. Many can foresee a time when they will move all of their IT services to this model cloud, but that will depend on many factors. For the majority, maintaining a balanced hybrid IT environment of public or private cloud and legacy on premise is the strategy of choice.

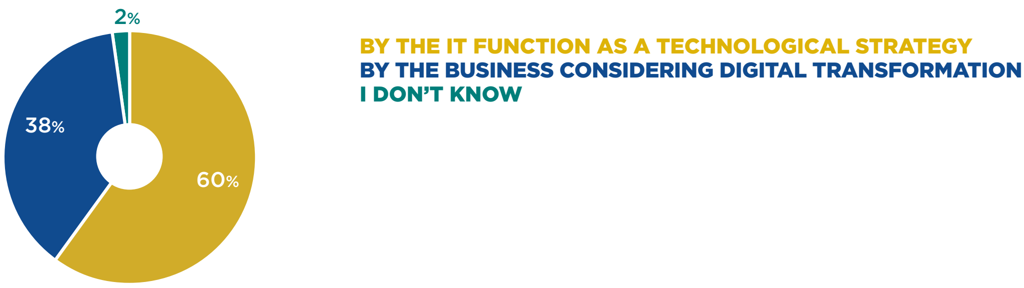
In the coming sections we examine the drivers and benefits that are fuelling the move to cloud but also the challenges that necessarily affect the pace of adoption.

3. Drivers and benefits of cloud adoption

What's driving cloud initiatives?

The move to cloud is still primarily led by the IT department as part of its technology strategy, though the broader business appears to be playing an increasingly dominant role as it pursues Digital Transformation. It will be interesting to see how this dynamic plays out over the coming years.

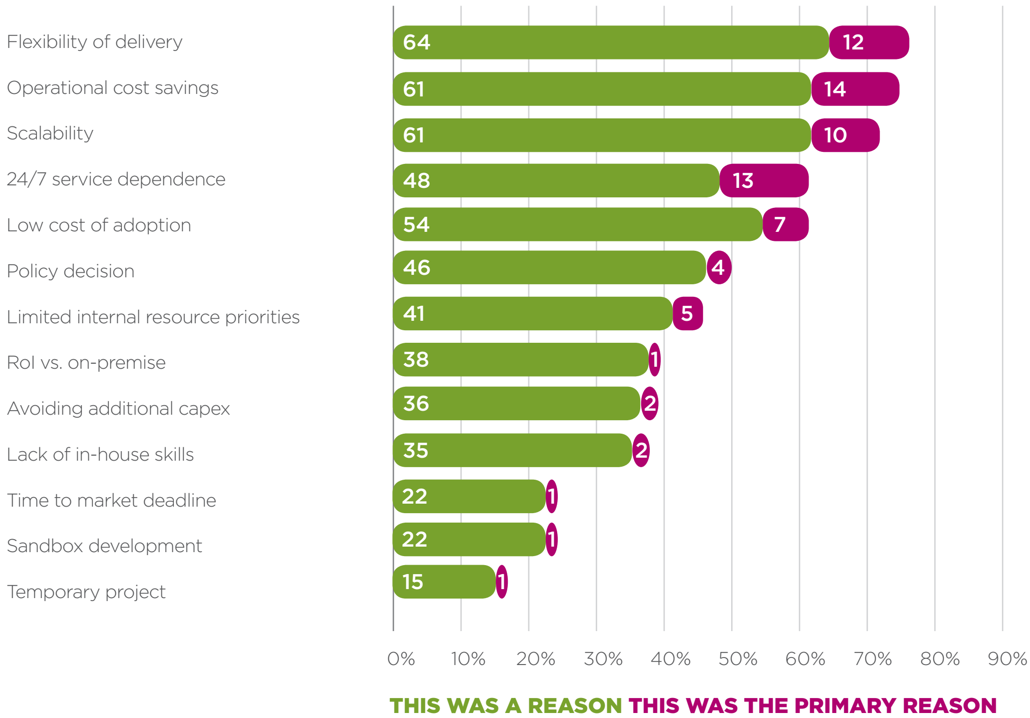
Is cloud adoption driven principally by the IT function as a technological strategy, or by the business considering Digital Transformation?



The flexibility of the delivery model, its scalability, and the potential for achieving operational cost savings all stand as the most popular reasons for initially adopting cloud-based services.

It's notable that both ITDMs and BDMs report broadly similar reasons for their initial adoption of cloud services, indicating that these two groups are well-aligned when it comes to possibilities presented by cloud.

Which of these were reasons for initially adopting hosted or cloud-based services in your organisation?



Respondents report a wide range of reasons for their continued investment in cloud, although the most popular came out as replacing legacy technology, followed by enabling innovation and business agility. The Board's digital strategy also featured highly here.

Interestingly, the drive to replace legacy technologies is particularly popular in the public sector, where almost half (48%) of respondents stated that replacing legacy was a business objective that was driving their investment in cloud services.

Which of the following business objectives have or are driving investment initiatives in cloud within your organisation?

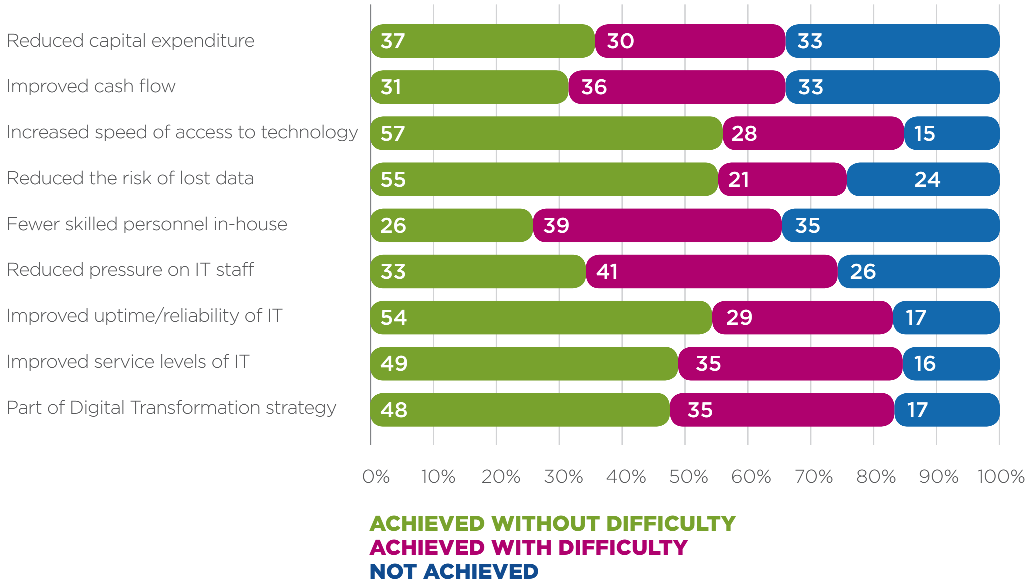
	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Replacing legacy IT technologies	**36%**	41%	37%	31%	48%	33%
Enabling innovation	**29%**	30%	25%	31%	30%	29%
Business agility	**27%**	33%	26%	25%	16%	30%
Digital strategy from board/CMO	**24%**	24%	22%	26%	27%	23%
Lower total cost of ownership	**24%**	30%	20%	24%	36%	21%
Enhancing business continuity	**22%**	24%	23%	20%	16%	23%
Gaining competitive advantage	**21%**	17%	21%	24%	20%	22%
Capex savings	**21%**	15%	23%	21%	9%	23%
Improving customer support/service	**21%**	17%	22%	21%	20%	21%
Speed to market	**20%**	28%	9%	26%	14%	21%
Development new products/services	**20%**	20%	26%	14%	18%	20%
Enhanced data analytics	**17%**	13%	14%	21%	18%	16%
More flexibility reacting changing market conditions	**15%**	11%	15%	18%	16%	1 5%
Improved return on investment	**14%**	11%	9%	20%	16%	13%
Speed of deployment	**13%**	17%	11%	14%	16%	13%
New revenue generation opportunities	**3%**	0%	2%	4%	2%	3%

The drive to replace legacy technologies is particularly popular in the public sector, where almost half (48%) of respondents stated that this was driving their investment in cloud service

The benefits of cloud

Importantly, cloud projects are generally successful in helping end users achieve their desired business objectives – albeit sometimes with difficulty. 83% of cloud users have successfully improved the reliability of their IT through their use of cloud-based services, 85% have increased the speed of access to technology, and 76% have reduced the risk of data loss.

Which of the following business objectives were achieved in your organisation when migrating to the cloud?

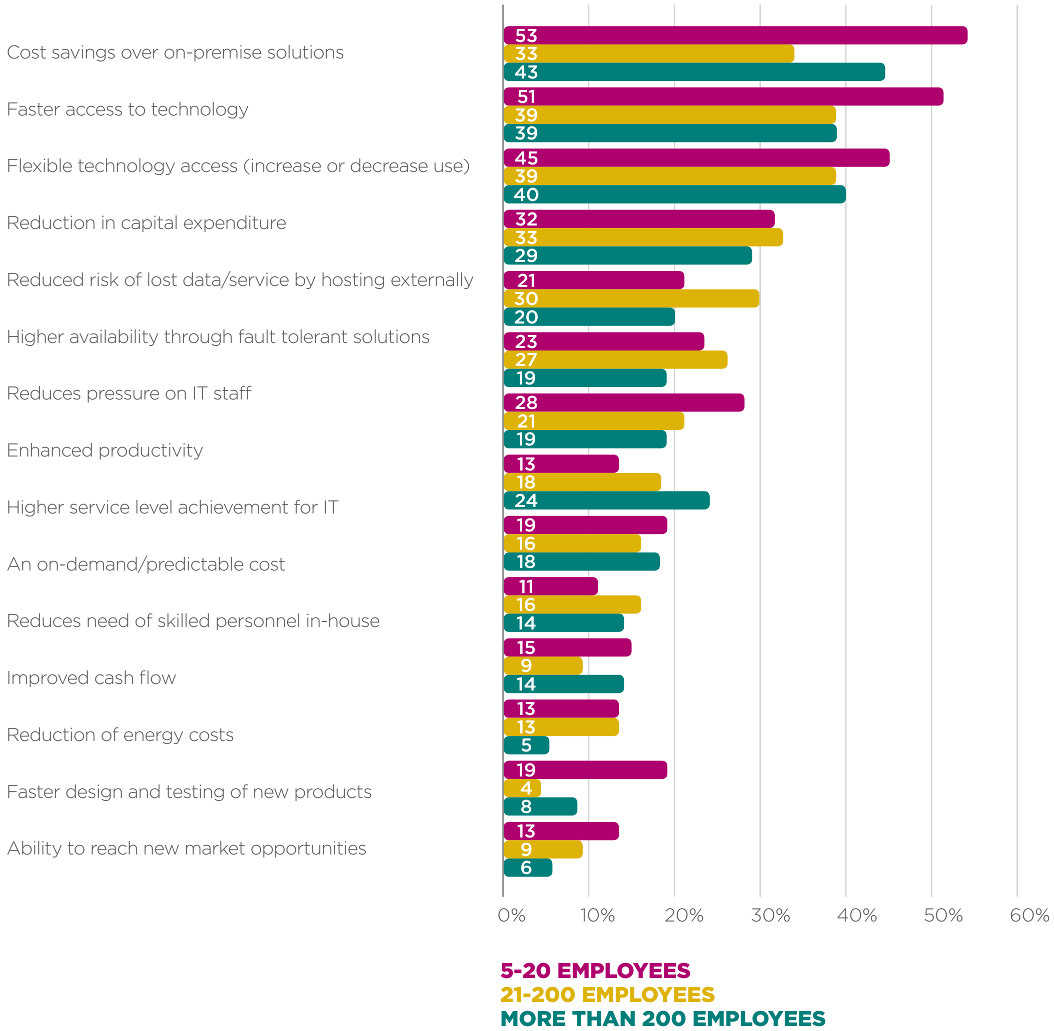


Nearly all respondents have achieved at least one tangible benefit of some sort, with the most likely being fast access to technology, cost savings, and more flexible access to technology (see graph on the next page).

There are clear differences in the benefits achieved when broken down by size of organisation. Organisations with fewer than 20 employees are significantly more likely to report a reduced risk of data loss and enhanced productivity as tangible benefits of their cloud deployments than are the larger organisations in the sample. Mid-sized organisations, by contrast, are the most likely to state that higher availability through fault tolerant solutions is a key tangible benefit that they have achieved.

83% have successfully improved the reliability of their IT through their use of cloud services

Which of the following tangible benefits of cloud services deployment has your organisation achieved, or expects to achieve?



The vast majority have achieved some sort of intangible benefit, such as improved collaboration between departments, improved business resilience, and improved employee and customer satisfaction

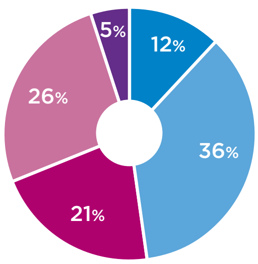
Similarly, the vast majority have achieved some sort of intangible benefit, such as improved collaboration between departments, improved business resilience, and improved employee and customer satisfaction.

Which of the following intangible benefits of cloud services deployment has your organisation experienced, or expects to experience?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Improved department collaboration	**29%**	28%	26%	34%	36%	28%
Improved department communication	**26%**	38%	22%	24%	38%	24%
Improved employee satisfaction	**23%**	21%	27%	20%	29%	22%
Improved IT department communication	**22%**	9%	24%	25%	19%	22%
Lowering barriers to IT	**21%**	19%	28%	16%	26%	20%
Improved business resilience	**21%**	28%	19%	19%	26%	19%
Improved IT department collaboration	**20%**	23%	20%	19%	31%	18%
Improved customer service	**20%**	15%	21%	21%	19%	20%
More development with Agile methodology	**17%**	19%	12%	21%	17%	17%
Improved customer engagement	**17%**	19%	18%	16%	14%	18%
Preventing vendor lock-in	**5%**	9%	2%	5%	10%	4%

Respondents feel that cloud services are, by and large, successful in furnishing them with a competitive advantage. Almost half (48%) state that using cloud has given their organisation a competitive advantage, and a further 21% expect to see one in future. It is, however, worth noting that a quarter of respondents (and a third of the smallest organisations) don't expect to see any competitive advantage from their use of cloud.

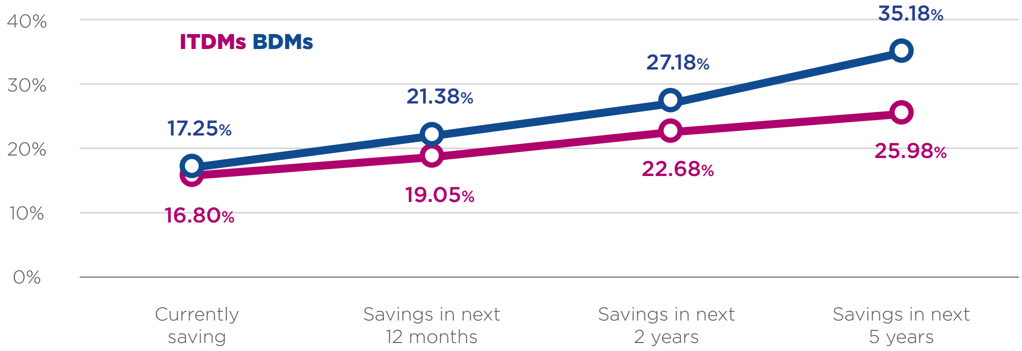
Has utilising cloud services given your organisation a competitive advantage?



YES, A SIGNIFICANT ADVANTAGE
YES, SOME ADVANTAGE
NO ADVANTAGE YET, BUT ANTICIPATING ONE
NO ADVANTAGE AND NOT ANTICIPATING ONE
I DON'T KNOW

Six in ten respondents have realised cost savings from their use of cloud-based services, saving each, on average, around 17%. This figure is expected to climb to 30% over the next five years, as cloud users recoup the initial costs associated with their migrations.

What cost savings is your organisation experiencing from its use of cloud services?



It is worth highlighting the differing perceptions and expectations of ITDMs and BDMs here. BDMs are significantly more optimistic about cloud's ability to deliver cost savings than respondents from the IT department. Although both sets of respondents report savings of a similar order today (of around 17%), BDMs expect to save 35% within the next five years, significantly higher than the 26% reported by ITDMs.

In a similar vein, BDMs are much more likely to report that cloud services are delivering, or will deliver, their organisations competitive advantage than are ITDMs (74% compared to 66%).

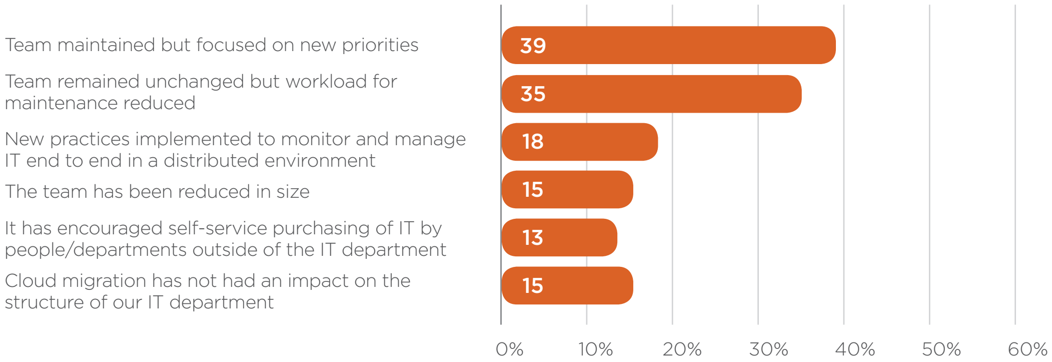
The reasons for these differences are not clear, although it once again suggests that while the business case for cloud may be strong, some IT leaders remain sceptical about how well it can integrate with the wider IT estate.

BDMs expect to save 35% within the next five years, significantly higher than the 26% reported by ITDMs

4. Skills and the IT department

The structure and activities of the IT department is changing thanks to cloud. Although some respondents have seen their internal IT teams reduced, the fear that cloud will drive the IT department to extinction appears to be largely unfounded. Instead, in the majority of cases, the IT department has been maintained in full, but refocused on other priorities.

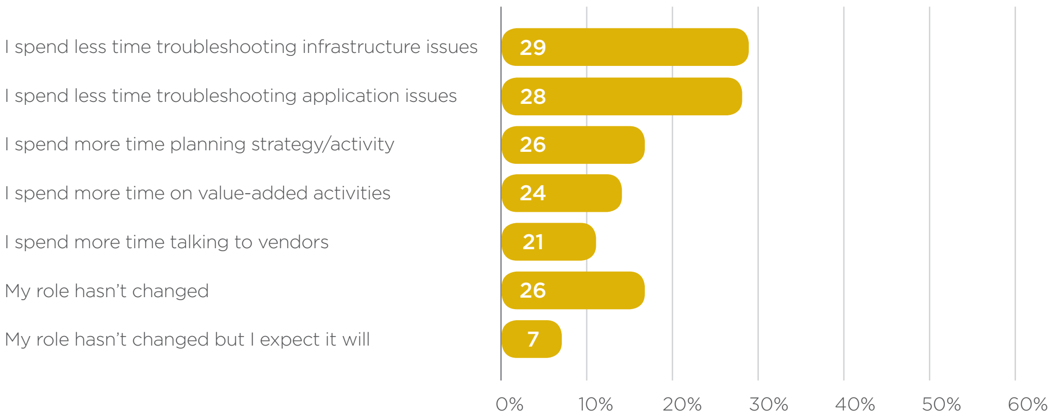
What impact has cloud migration had on the structure of the IT department in your organisation?



The IT department has been maintained in full in the majority of cases, but has been refocused on other priorities

Roughly three quarters of ITDMs state that cloud has changed, or will change, the role of the IT staff within their organisations. A third spend less time troubleshooting application issues, and a quarter spend more time on planning, strategy and other value-added activities.

Has your role changed with the adoption of cloud-based solutions in your organisation?



All of this should be heartening for IT staff, assuming, of course, that they are able to adapt and hone their skillsets. As stated previously, flexibility is the order of the day and staff must equip themselves with the skills needed to thrive in the digital economy. Those staff that fail to adapt, and the businesses they work for, will find themselves at a distinct disadvantage.

According to the data, the top three digital skills, knowledge or elements that respondents believe their organisation needs most of all are a strategy definition through leadership (37%), a digital roadmap for implementation (37%) and cloud specialists (36%).

What are the top three digital skills, knowledge or elements that you believe your organisation needs most of all?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Strategy through leadership	**37%**	32%	37%	39%	40%	36%
Digital roadmap for implementation	**37%**	30%	29%	48%	28%	39%
Cloud specialists	**36%**	28%	31%	45%	36%	36%
Developers	**32%**	34%	30%	32%	26%	33%
Migration skills	**27%**	34%	28%	23%	24%	28%
Market overview, product / vendor awareness	**26%**	38%	26%	20%	24%	27%
Digital tools	**22%**	22%	20%	24%	26%	21%
Commercial understanding of cloud	**21%**	16%	28%	16%	22%	21%
Legacy IT	**14%**	8%	17%	13%	10%	15%
Legal skills	**11%**	10%	10%	12%	12%	11%
Open source skills	**10%**	18%	7%	10%	12%	10%
PaaS implementation experience	**9%**	6%	10%	9%	8%	9%

With the UK experiencing a technology skills gap, competition for staff with the right skillsets is mounting.

With that being the case, it should come as little surprise that respondents expressed interest in up-skilling staff within their organisations. Roughly two-thirds of respondents, both IT decision-makers and business decision-makers, stated that either they or others in the organisations would see value in independent training and certification schemes for improving cloud and digital skills.

Two-thirds of respondents stated that their organisations would see value in independent training and certification schemes for improving cloud and digital skills

Would you or others in your organisation value an independent online training and certification process for improving cloud and digital skills?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Yes – I would be interested	**34%**	28%	36%	36%	30%	36%
Yes – employees in my department would be interested	**36%**	32%	30%	45%	40%	36%
Yes – employees in other departments would be interested	**19%**	8%	24%	20%	18%	20%
No interest in my organisation	**25%**	36%	26%	19%	20%	27%
I don't know	**7%**	4%	7%	9%	14%	6%

Moreover, the data suggests that such schemes increase employment prospects for staff. Over half of respondents stated that their department, or other departments within their organisation, would be more inclined to hire individuals that had completed an independent cloud certification over those that hadn't.

Would your organisation be more inclined to hire individuals that had an independent cloud certification?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Yes – my department would hire	**34%**	28%	37%	34%	30%	35%
Yes – other departments would hire	**27%**	20%	24%	33%	22%	28%
No – this certificate wouldn't make any difference	**36%**	50%	39%	27%	26%	39%
I don't know	**10%**	8%	8%	13%	26%	6%

5. Cloud inhibitors and challenges

As with previous years, respondents continue to report a wide range of concerns about cloud, and while these concerns do not appear to be denting end users' overall enthusiasm for the delivery model, they do present barriers that must be navigated.

94% of respondents express concerns of some sort about their organisation's use of cloud. Security concerns appear to have somewhat subsided in recent years, and while 44% still say that they are worried about cloud security, this is significantly lower than last year. However, data privacy concerns remain high.

What concerns do you have about your organisation's use of cloud-based services?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Data privacy	**62%**	70%	54%	66%	67%	61%
Security concerns	**44%**	52%	36%	48%	40%	45%
Fear of loss of control/manageability	**39%**	54%	32%	38%	40%	39%
Data sovereignty/jurisdiction	**32%**	32%	23%	42%	31%	33%
Dependency upon internet access	**32%**	42%	30%	28%	22%	34%
Regulatory constraints	**27%**	20%	23%	35%	33%	26%
Contract lock-in	**25%**	18%	28%	24%	20%	26%
Cost of change/migration	**25%**	24%	20%	30%	31%	23%
Faith in the reliability of the vendors	**16%**	12%	14%	19%	11%	17%
Transparency of providers services	**15%**	24%	14%	12%	24%	13%
Protection of intellectual property	**15%**	26%	8%	16%	24%	13%
Investments already made in on-premise	**14%**	8%	15%	17%	13%	15%
Legacy technology restrictions	**14%**	6%	14%	17%	22%	12%
Retention of key skills	**11%**	6%	8%	17%	20%	10%
Faith in the clarity of charges	**11%**	6%	10%	13%	16%	10%
Contract liability if SLAs are missed	**11%**	12%	9%	11%	2%	13%
Proprietary technology	**10%**	6%	10%	12%	13%	10%
No clarity of impact of cloud services on business processes	**10%**	8%	7%	13%	13%	9%
Can't agree on how the services are used	**5%**	6%	6%	4%	9%	5%

End users put forward a number of reasons for keeping their applications in-house and while security and privacy concerns ranked highly here – particularly within larger businesses – other more practical considerations also come into play. Lack of budget, integration with legacy systems, and existing investments in legacy systems appear to be keeping certain apps firmly on the ground for the time being.

What have been the biggest inhibitors to moving more apps and/or infrastructure to the cloud for your organisation?

	Total	5-20 employees	21-200 employees	More than 200 employees	Public sector	Private sector
Lack of budget	**35%**	40%	31%	37%	40%	34%
Business security and privacy concerns	**30%**	24%	25%	38%	28%	31%
Integration challenges of legacy systems	**29%**	24%	20%	41%	30%	29%
On-premise investments/legacy systems	**27%**	20%	29%	28%	28%	27%
Lack of strategy or business case	**22%**	24%	24%	18%	22%	22%
Regulation or other legal constraints	**19%**	24%	8%	27%	26%	17%
Lack of sponsorship or leadership	**16%**	14%	15%	19%	16%	17%
Constrained by lack of appropriate skills	**16%**	18%	12%	19%	24%	14%
Lack of control	**13%**	14%	13%	12%	18%	12%
Limited customisation	**9%**	6%	8%	12%	24%	6%
Low-risk providers/product immaturity	**9%**	6%	11%	8%	12%	8%
No inhibitors moving more apps/ infrastructure to the cloud	**8%**	8%	8%	7%	4%	9%

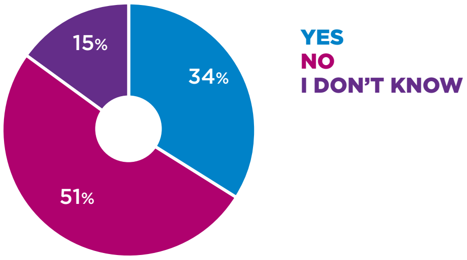
It's important to note that cloud projects do not enjoy a universal success rate. Six in ten respondents reported not being entirely satisfied with their use of cloud services, citing migration difficulties, skills shortages and poor budgeting as the sources of their dissatisfaction.

These challenges highlight the importance of planning when moving to cloud services. End users must enter cloud service contracts with their eyes open to the potential stumbling blocks if their cloud projects are to be successful.

However, a third of respondents have sought external validation to determine the security of their organisation's cloud services. While while the largest organisations are marginally more likely than their smaller counterparts to have done so, this is clearly an area that has been overlooked.

End users must enter cloud service contracts with their eyes open to the potential stumbling blocks

Have you ever had an external validation to determine the assurance or security of your organisation's cloud services?



The GDPR

The soon-to-be-introduced General Data Protection Regulation (GDPR) hangs heavy over UK organisations. A European Union initiative designed to better protect EU citizens' data and due to come into force on 25th May 2018, the regulation will bring strict new rules for data controllers and data processors. Critically, the GDPR will likely go live before the UK's exit from the EU, meaning that UK-based organisations will still have to comply. Regardless of Brexit the Great Repeal Bill – which will take the UK out of the EU – will likely curtail freedom of movement of people, not data. Those organisations that fall foul of the regulation risk being dealt with fines of up to €20m or 4% of their turnover (whichever the greater).

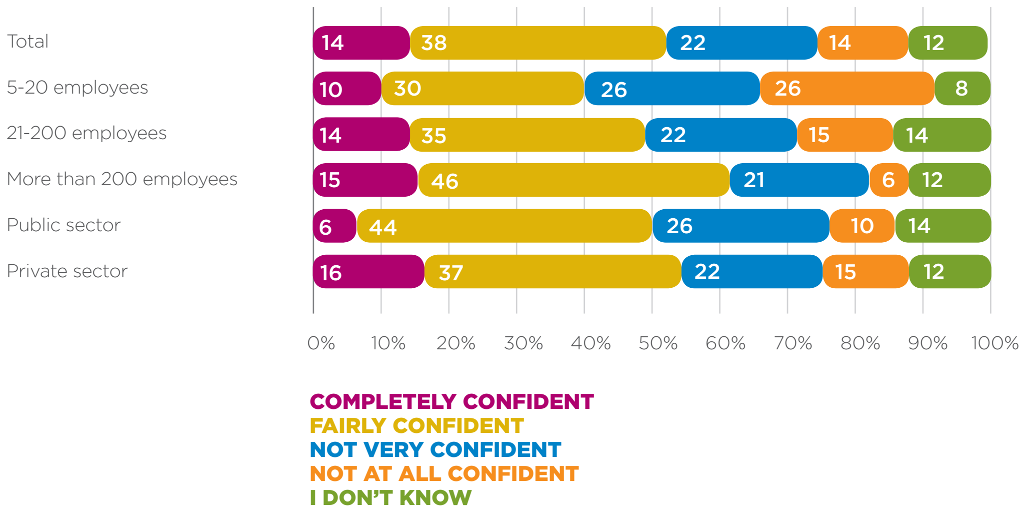
The stakes are incredibly high, but there remains widespread confusion and a degree of apathy among UK-based organisation. Few of our respondents could state with complete confidence that they understood what the GDPR meant for their organisation or that they were prepared for it.

Only 16% could say that they believed they were completely confident that they fully understood what the GDPR meant for their organisation. Worryingly, respondents from the public sector were some of the least confident in their understanding of the GDPR; just one in ten said that they were completely confident that they understood what it meant for their organisation.

Only 16% could say that they believed they were completely confident that they fully understood what the GDPR meant for their organisation

GDPR preparedness fared worse still. Just 14% of the entire sample – and 6% of public sector respondents – were completely confident that they were prepared for the GDPR. Moreover, over half of the smallest organisations stated that they were not confident that their organisation was prepared.

How confident are you that your organisation is prepared for the implementation of the GDPR in May 2018?



These figures are deeply troubling and indicate that many organisations, particularly those at the smaller end of the market and in the public sector, have a considerable amount of work to do before it is introduced into law.

The Cloud Industry Forum (CIF) was established in direct response to the evolving supply models for the delivery of software and IT services. Our aim is to provide much needed clarity for end users when assessing and selecting cloud service providers based upon the clear, consistent and relevant provision of key information about the organisation/s, their capabilities and operational commitments.

We achieve this through a process of self-certification of vendors to a cloud service provider Code of Practice requiring executive commitment and operational actions to ensure the provision of critical information through the contracting process. This Code of Practice, and the use of the related Certification Mark on participant's websites, is intended to provide comfort and promote trust to businesses and individuals wishing to leverage the commercial, financial and agile operations capabilities that the cloud-based and hosted solutions can cover.

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6. Conclusion

Since our last report, the Cloud Industry Forum has taken over the membership of EuroCloud UK so now represents the largest community of cloud suppliers in the UK enabling us to increase our gravitas and, we hope, be recognised as the leading trade body discussing the opportunities and issues of cloud services and technology. We believe that the Forum is more necessary and relevant than ever.

As a community of interested cloud parties, it is not unreasonable to expect reports from the Cloud Industry Forum to attempt to be lead businesses down the path of “cloud only” services. In reality, the Forum fiercely protects a position of vendor independence as this is what our members value and frankly, what the market needs. To that end, we recognise that the path that UK businesses are clearly on is a “cloud first” approach but certainly not “cloud everything”. While some smaller businesses make the logical step to remove their depreciated hardware assets and move entirely to cloud, that is simply not feasible for many larger companies with large infrastructure investments. Hence, as is apparent in this report – the hybrid IT route is now established as the predominant choice of most businesses.

This report moves us on significantly from our first view of the market back in 2009. While cloud computing is now clearly mainstream, there are several inhibitors that have not moved and, indeed, have (in the case of data privacy) been further exacerbated by Brexit. For the UK to be a credible sovereign cloud dominion on the global stage, the GDPR must be acted on. For this reason, the Cloud Industry Forum has augmented its Code of Practice to include components of GDPR and calls on customers to be demanding this from their cloud suppliers.

UK businesses are taking a “cloud first” approach but not a “cloud everything” one

We are now familiar with the language and tone of Digital Transformation – candidly, we prefer Business Transformation. Cloud services will be a vital bi-product of this, an assumed default that businesses must use to address their needs to be agile, scalable and flexible enough to rapidly move (or lead) in changing market conditions.

The biggest concern that comes from this report relates to our most important asset: people, and the shortage of digital skills in the market. Perhaps of more concern is that this must be led from the top down, and the IT staff of many businesses do not see the necessary skills in their leadership team to drive this change. To this end, the Cloud Industry Forum has built and launched our Professional Membership programme to aid the development of key digital and cloud computing skills.

Alex Hilton
CEO
Cloud Industry Forum