

European CIOs and Cloud Services



A report by
Portio Research
in association with
COLT
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1. EXECUTIVE SUMMARY

Introduction

Over the last couple of years, the subject of cloud services has been surrounded by much hype and debate. This survey was conducted among 352 CIOs and their peers across Europe, and has revealed some interesting facts. We discovered that respondents don't actually perceive cloud as being just hype. We observed many other interesting trends across Europe and within four major industries—professional, financial, public and media services. Differences in company size did not influence perceptions of cloud services—there were only subtle variations observed across small, medium, and large companies.

Survey results

CIOs and their peers across Europe are facing increasing pressures with regards to cost, while still needing to be flexible. 80 percent of those surveyed rated cost as a priority, followed by flexibility (72 percent) and then risk (62 percent). The fourth placed priority was innovation (57 percent) and fifth was business transformation (46 percent).

With regard to cloud technology, European CIOs and their peers seem to lack clarity and understanding. Of the 1,011 people initially included in the study, 56 percent were not familiar with cloud services. Northern and Central Europe came out as being the least familiar with cloud services.

With low familiarity around cloud computing, many CIOs and their counterparts are confused regarding the true definition of cloud services. However, most of them are aware of the objectives of cloud services. 48 percent of CIOs and their peers perceive that the main objective for adopting cloud services is to reduce costs.

Enterprises are largely optimistic about the growth of cloud services. On average, 9 out of 10 companies expect positive growth in cloud services over the next 12 months. There is consensus regarding this across all regions, industries and company sizes.

The primary feature of cloud services that is driving its adoption is its ability to provide users with anywhere-anytime access. Based on the reverse ranking methodology, this feature received the highest mean score of 7.86 among 12 features of cloud services. Security is perceived to be the second most important feature overall, ranked highest by large companies. Standardization is also seen to be an important aspect of cloud services, ranking in third position. The availability of service-level agreements for cloud services was also highlighted as being important, especially by medium-sized companies. CIOs and their peers place this feature as the fourth most important. While cost reduction or savings is an obvious requirement, we checked for other pricing attributes such as pay-per-use and the requirement for an on-demand model, but these were rated lower than other features.

Adoption rates of cloud services are soaring. 35 percent of companies surveyed have adopted a cloud-based service model or are in the process of implementing one. Another 42 percent said they are currently evaluating cloud services.

CIOs and their peers believe that cloud computing will contribute significantly to their IT budgets over the next 12 months, with 37 percent estimating a 21–40 percent

contribution. Other than the public sector, all other industries are bullish about these predictions. Mid-sized companies are the quickest in adopting cloud services.

Based on their needs, companies are also evaluating various cloud models. The four key models which were evaluated (based on the NIST definitions) were:

- Enterprise (hybrid) clouds: two or more cloud types
- Community clouds: shared by several organizations that share a common objective
- Private clouds: created on the internal data centers of the company and not shared with other companies
- Public clouds: owned by a company, but offered to other cloud providers or end-users

With the increased security and scalability it offers, the enterprise cloud model is the most preferred model of hosting cloud services, with almost half of the CIOs and their peers preferring this model. Private clouds, although ranked second overall, are the most preferred by companies in the UK/Ireland (42 percent). One of the reasons for this preference is the need to reduce vulnerability to external security threats. Based on the same reasoning, public clouds and community clouds received low preferences.

Companies across Europe are evaluating cloud services for a variety of requirements; at the same time, providers are now offering a range of cloud services. In the Software-as-a-Service (SaaS) segment, 50 percent of respondents are evaluating or adopting cloud services for email and back-up services, with a high percentage (65 percent) of companies in Southern Europe looking at using the cloud for back-up services. On the other hand, this figure is only 27 percent in Central Europe. Back-up services are also rated highest by public-sector companies.

Within Platform-as-a-Service (PaaS), database hosting is being used or evaluated by 59 percent of companies, followed by web hosting (57 percent).

With regards to Infrastructure-as-a-Service (IaaS), because companies perceive security as the biggest barrier, they are looking to place their trust in cloud providers who can deliver their server and storage needs securely. These features were cited as being important by more than 50 percent of companies.

A significant 68 percent of respondents state that the security of cloud services is their biggest barrier to adoption. The integration of cloud services into internal IT applications is cited as the second-largest barrier (61 percent). Performance/reliability follows closely, with 58 percent of CIOs and their peers doubting the ability of the cloud to provide uninterrupted service. Furthermore, while cloud computing is seen as a means to reduce costs, 47 percent of respondents are not sure how the service would be priced and need help in conveying the potential financial benefits of cloud services. Compliance and regulation are mentioned by 43 percent of respondents, and about a third suggest lock-in as a barrier to adoption.

Cloud services definitely have features which can help CIOs and their peers overcome their concerns. The first enabling factor, noted by almost 75 percent of CIOs and their peers, is receiving assurance of quality from suppliers. This attribute is trailed closely by regulation on the security and control of data, cited as important by 71 percent of respondents. Assurance of access to the latest technology and the ease of transition from the current IT platform to a cloud environment, are perceived to be important by more than 60 percent of respondents. Standards were rated lower than other factors, yet were cited as important by half of the respondents. Only one-third stated that in-country government endorsements are important to encourage CIOs to adopt cloud services.

With multiple cloud providers now offering a number of services, CIOs and their peers have set the list of priorities that they want suppliers to meet. Given that security is perceived as the biggest barrier to the adoption of cloud services, it is understandable that CIOs and their peers rank security as the leading expectation from suppliers. This factor received a high score of 4.36. Next, companies expect suppliers to be a one-stop-shop that can take responsibility for providing end-to-end services (network, infrastructure and platform); this factor scored 3.62. Competitive pricing, SLAs, and suppliers' ability to provide strong business continuity and disaster recovery processes, were next on the list, and were similarly ranked. Vendor compliance with local standards came in last.

Before the procurement team settles on their preferred supplier, they need to evaluate the type of supplier that would best understand their needs. CIOs and their peers believe that a professional managed hosting company (36 percent) or a network infrastructure and services provider (29 percent) can best deliver on their expectations. Only one-fifth prefer procuring cloud-based services from a traditional IT software integrator. Internet service providers and telecom carriers score the lowest, with fewer than 10 percent of respondents willing to outsource their needs to them.

Cloud computing is currently dominated by traditional large IT players. 62 percent of CIOs and their peers said that they would prefer Microsoft for their software and platform needs, while another 58 percent mentioned IBM for infrastructure services. Google and Cisco fared equally, with one-third respondents choosing them for SaaS. Although a new entrant into the cloud services market, COLT received a positive response for its IaaS offerings. About 15 percent of companies across Europe mentioned that they are actually evaluating or using COLT for their hosted infrastructure services.

All countries have a similar view regarding the positive growth of cloud services and their share in the IT portfolio of companies. In addition a number of other interesting country-specific observations were made. Spain has the highest adoption rate of cloud services, with 52 percent. Ireland has the highest percentage of CIOs evaluating cloud services (67 percent). As far as the various cloud models are concerned, the highest proportion of respondents focusing on the enterprise/hybrid cloud model was in France (65 percent). Switzerland ranks first when opting for private clouds (46 percent). Sweden ranks first in voicing its concerns around security, with 86 percent of respondents rating this issue as a significant barrier to the adoption of cloud services. Furthermore, assurance of quality is

rated as the most important factor by CIOs and their peers in the Netherlands (93 percent). 64 percent of CIOs and their peers in Denmark prefer a professional managed hosting company for their cloud computing needs: this was the highest percentage across the various countries surveyed.

Summing up

The benefits of cloud services are undeniably impressive. Considerations of energy use alone can trump all other reasons to shift computing power outside of a company's own physical domain. But without the assurances of peak load performance, access security, data protection conformance, capacity flexibility, and interoperability—and a network environment that's fit for purpose—a cloud proposition might begin to look...well...cloudy.

Although we all know that adopting cloud services makes eminent sense, the real benefits may only shine through if the CIO is prepared to plan for operating scenarios that are different from prevailing practice.

It's important to note that the emergence of the cloud services model does not mean the sudden death of traditional service delivery. CIOs will need to look for a long-term partner on this journey and ask some key questions. Does the cloud provider have a track record of service and a service philosophy? Where does the provider's expertise come from (software vendor/telco/hosting provider/internet service provider)? Does it offer managed services already? What are its support and SLA capabilities?

Expertise from network through data centre to application is important. Cloud services are not about a customer purchasing a commodity utility—they are a means of delivering an evolving IT service to the customer. In addition the CIO still needs to decide who to trust to advise them on their cloud service requirements, who can best deliver them, and who will be around for the long term to help them grow.

2. INTRODUCTION

2.1. Approach

Portio Research surveyed companies across Europe that had evaluated and adopted cloud services, as well as other companies that had evaluated but rejected the idea. The research design suggested surveying CIOs and their peers to gather opinions on various aspects of cloud services. Respondents comprised companies using or evaluating any of the three key elements of a cloud offering: software as a service (SaaS), platform as a service (PaaS) and infrastructure as a service (IaaS). Portio used the NIST definition of these taxonomies as follows:

Cloud Infrastructure as a Service (IaaS)

The capability provided to customers is to provision processing, storage, networks and other fundamental computing resources, allowing customers to deploy and run arbitrary software, which can include operating systems and applications. Customers do not need to manage or control the underlying cloud infrastructure, but they have control over operating systems, storage, deployed applications, and possibly select networking components (eg, firewalls and load balancers).

Cloud Platform as a Service (PaaS)

This model provides customers with the capability to deploy customer or acquired applications created using programming languages and tools supported by a provider on the cloud infrastructure. Customers do not manage or control the underlying cloud infrastructure, including network, servers or storage, but they have control over deployed applications and application-hosting environment configurations.

Cloud Software as a Service (SaaS)

This model provides customers with the capability to use a provider's applications that are running on a cloud infrastructure and are accessible from various client devices through a thin-client interface such as a web browser (eg, web-based email). Customers do not manage or control the underlying cloud infrastructure, network, servers, operating systems, storage or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.

2.2. Sample details

The result is based on online and telephonic surveys conducted with 352 respondents who indicated involvement in technology purchasing decisions at their organizations. The respondents included 65 percent level-one IT professionals, such as CIO, CTO, S/VP-IT and Head-IT, reporting directly to the CEO or the owner of the company. The remaining 35 percent were a mix of level-two and level-three respondents, ie, professionals reporting to the Head-IT or who were a part of the team.

The survey was conducted among CIOs and their peers in September 2009 across 13 countries in Europe. The countries were grouped into the following five regions:

- Western Europe – France, Germany, Belgium and the Netherlands
- Southern Europe – Spain, Portugal and Italy
- Northern Europe – Sweden and Denmark
- Central Europe – Austria and Switzerland
- The UK and Ireland

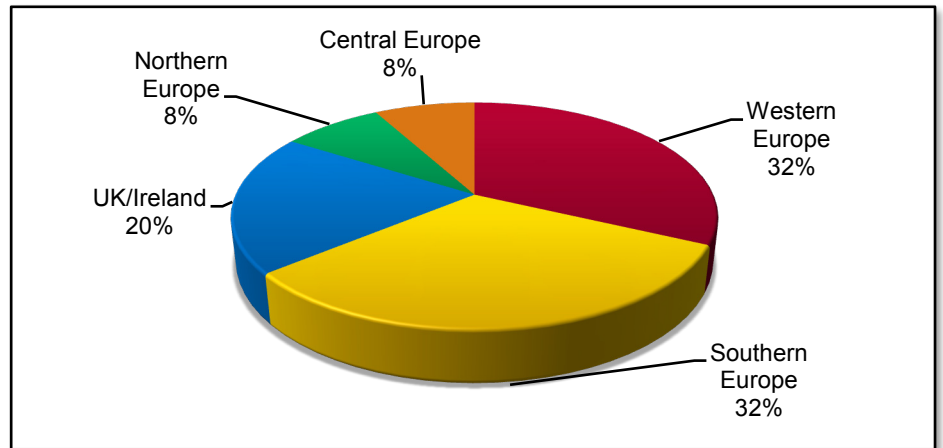


Exhibit 1: Break-up by region

The survey was conducted with small, medium and large companies. Nearly a third of the responses were from large companies with the reminder split between small and medium companies.

A representation was sought from four major industries—professional, financial, public and media services. Banking and insurance companies were covered under the financial sector. Public-sector companies included both government units and educational units.

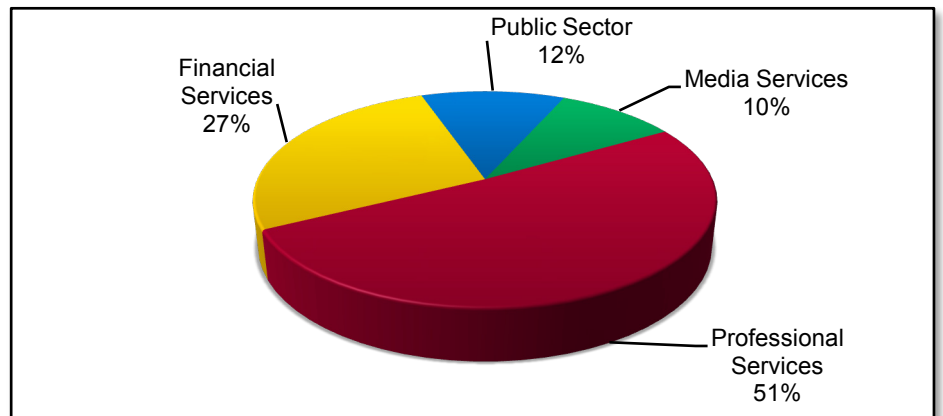


Exhibit 2: Break-up by industry

3. SURVEY RESULTS

3.1. What are the challenges that CIOs face?

With CIOs and their peers facing increasing business pressures, cloud services are being touted as the panacea for all problems. But are cloud services up to the challenge?

3.1.1. Critical business issues

On one side, CIOs and their peers are required to lower IT spend, and on the other, their business demands a dynamic and more flexible environment. Increased risk and the challenges of business transformation leave them with negligible time for new IT services and new business models.

A majority of CIOs and their peers (80 percent respondents) are constantly focusing on reducing costs. Nearly 75 percent of CIOs and their peers are grappling to bring flexibility into their current IT systems. Factors such as risk mitigation (62 percent) and innovation (57 percent) are perceived to be less critical, yet important business issues. Business transformation is seen as the least critical factor (46 percent).

~ 8 out of 10 CIOs and their peers are constantly focusing on reducing costs ~

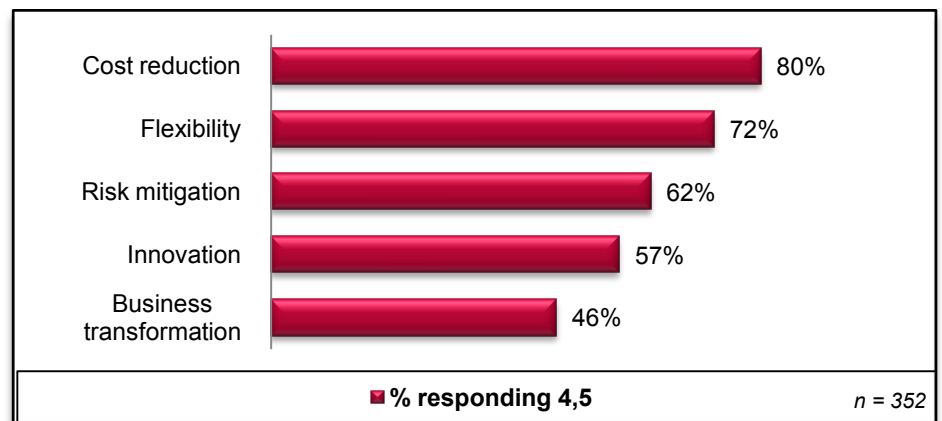


Exhibit 3: Business issues

#: Respondents were asked to rate the options on a 5-point scale where '1' was the lowest and '5' was the highest.

Across different countries, perception around business issues is mixed. Risk mitigation is the most critical factor to CIOs and their peers in Central Europe (79 percent), while it received the lowest score in the UK/Ireland and Northern Europe (52 percent). Southern Europe rated innovation as the most important business issue (68 percent) but this has less importance in Central Europe (38 percent). Business transformation is the least critical factor in Northern Europe (26 percent) and the most critical factor to companies in the UK/Ireland (56 percent).

Due to the intrinsic characteristics of industries, media companies perceive risk as less critical (50 percent), while financial services companies rate it as the most critical factor (65 percent). Public companies find innovation less as being less critical than other sectors, with 45 percent of CIOs and their peers citing this.

With CIOs and their peers constantly required to address the issues of cost, flexibility, risk, innovation and business transformation, they are now looking at a variety of cloud services that can help address them.

~ 56% companies who attempted participation are not familiar with cloud services. ~

3.2. Attitudes to cloud services?

Cloud services may rapidly be gaining popularity with companies, yet there is a sizeable proportion of IT executives who admit that the concept of cloud services is still confusing to them and that there is too much hype.

Awareness about cloud services is low, as 56 percent of executives expressed unfamiliarity with it. Northern Europe (73 percent) followed by Central Europe (72 percent) accounted for the highest percentage.

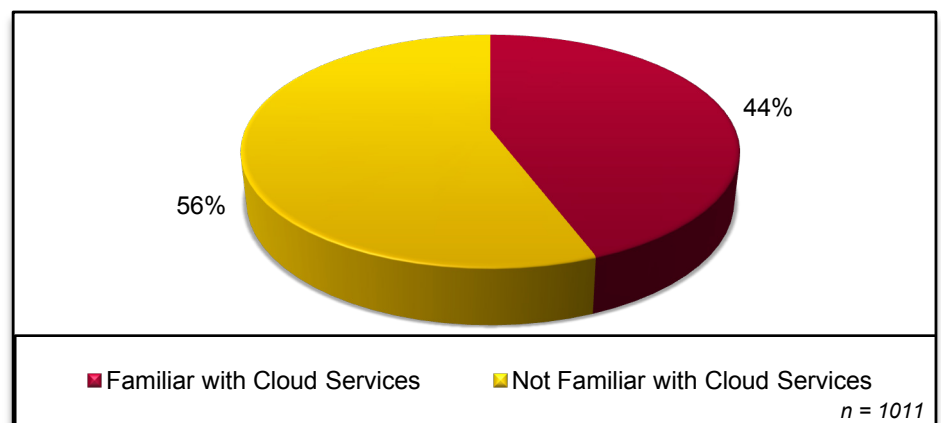


Exhibit 4: Familiarity with cloud services

Within industries, the public sector has highest unfamiliarity (63 percent) and media companies have lowest unfamiliarity with cloud (51 percent). Small-size companies (fewer than 250 employees) are least familiar with cloud services (37 percent), while mid-size companies (250–1,000 employees) are the most familiar (71 percent).

It can be seen that for IT decision-makers who are aware of cloud services it is integral to their strategies; but there is a lot of hype around the issue and this can blur the facts. It falls to trusted advisors to inform CIOs and senior IT decision-makers about the potential benefits of cloud services. The opportunity is clear: significant growth of cloud services will happen only if the industry makes large strides in improving levels of knowledge among IT decision-makers.

Respondents were asked to rate familiarity on a 5-point scale where '5' was the highest and '1' was the lowest. Only those respondents who rated themselves '3' or more took part in the rest of the survey.

The data on familiarity discussed above is for all respondents, including those who were disqualified from participating in the remainder of the survey due to their low familiarity with cloud services. This therefore gave a sample size of 1011 for this question.

~ A significant number of those who claim to be familiar are not clear about the true objectives that cloud services will help their company achieve ~

3.2.1. Objectives in using cloud services

Many respondents across Europe are not clear on the true definition of cloud services. Confusion persists among CIOs and their peers, and they expect cloud suppliers to break through the hype and advise them.

CIOs and their peers are more certain about the objectives of cloud services rather than the actual definition of the concept.

48 percent of CIOs and their peers state that the main objective for adopting cloud services is to reduce costs. About 21 percent of respondents perceive that the inclination towards cloud services is because 'companies do not want to not own assets', ie, they want to reduce capex.

19 percent of respondents feel the objective is to help companies 'scale up to meet their business goals'; this proportion is the highest for public-sector companies (29 percent). One-tenth of respondents believe that lack of in-house skill sets is the main driver behind using cloud services.

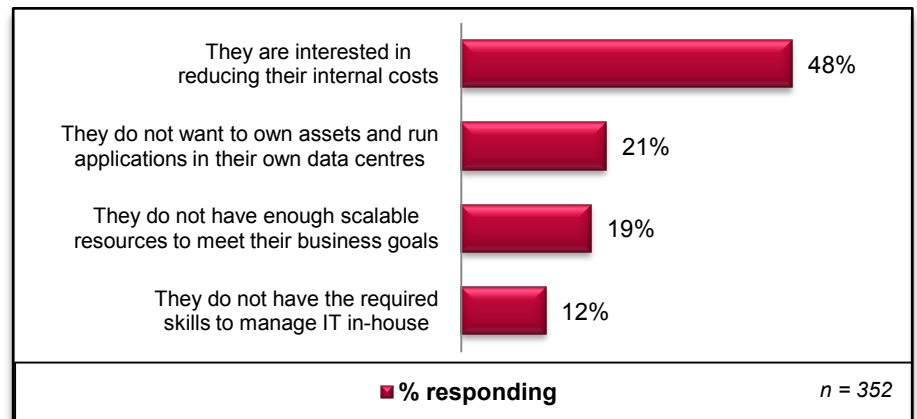


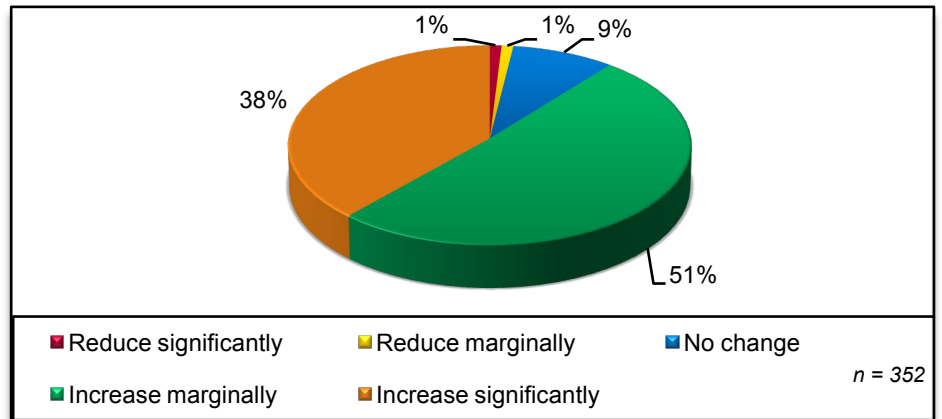
Exhibit 5: Objectives in using cloud services

3.2.2. What is the perceived growth in usage?

Cloud services received aggressive growth projections, with 9 of 10 CIOs and their peers envisioning strong growth in cloud services. This response was observed consistently across all regions, industries and company sizes. More than half of the respondents thought there would be marginal growth, and 38 percent predicted significant growth in the next year. Less than one percent projected a significant downward shift in its growth and a similar proportion expected a marginal reduction. Nine percent felt there would be no change in the growth patterns of cloud services. No significant trends were observed across different segments.

It seems that companies across all regions and industries, and of all sizes, agree that cloud services will grow strongly in the next year.

~ 9 of 10 CIOs and their peers envision growth in cloud services in the next 12 months ~

**Exhibit 6: Expected growth of cloud services**

3.3. What are the benefits?

~ The ability to access data/systems from anywhere is the key driver, accelerating the adoption of cloud services among CIOs and their peers ~

Cloud services can address a number of top-of-mind business issues such as cost control, speed to market, IT optimization and risk management. The ability to access data or systems from anywhere is a key driver, accelerating the adoption of cloud services among CIOs and their peers. Based on the reverse ranking methodology, this feature received the highest mean score of 7.86 among 12 features of cloud services. Similar trends are observed across regions, industries and company sizes.

CIOs and their peers perceive that cloud services will help them deliver a more secure environment, with security coming in second on the list of features. While security ranks at the third position for small- and mid-size companies, it comes in first for large companies. Media companies are less concerned about security when thinking about cloud services, with this feature ranked in eighth position.

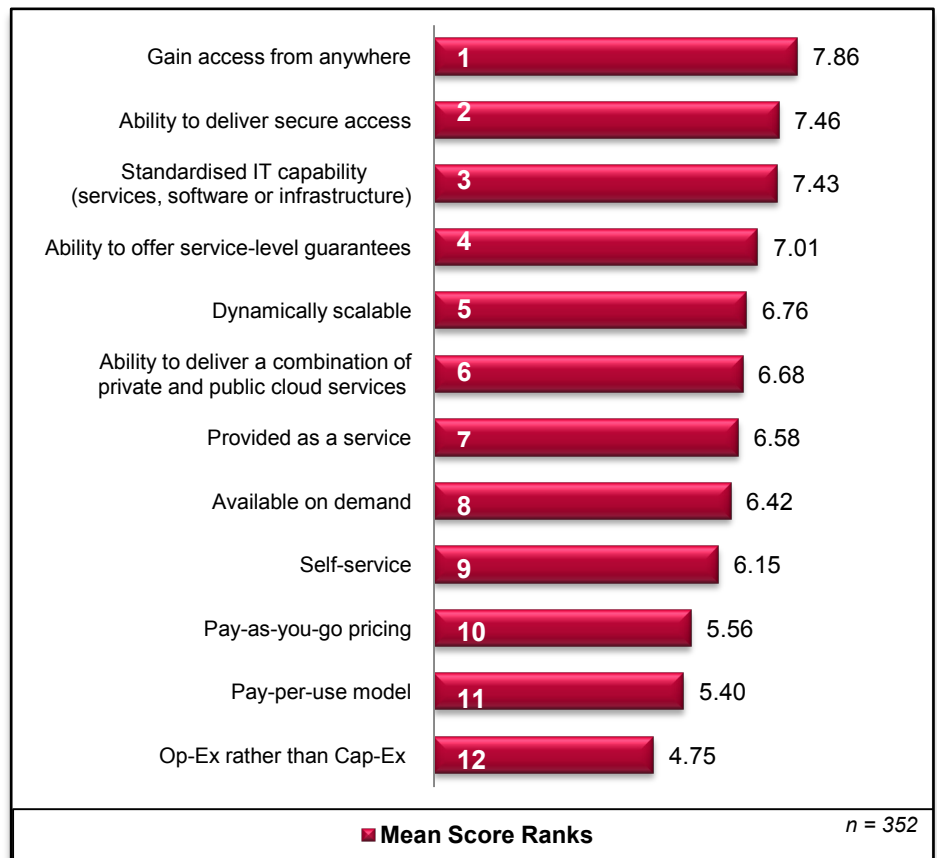


Exhibit 7: Relative importance of cloud services features

#: The respondents ranked 12 options, and scores were awarded in a reverse order. Composite rankings were calculated on the basis of mean scores obtained for each of the attributes.

Cloud services are also perceived to bring standardization in applications and services—this feature ranks third. Companies are looking for a more standardized set of applications that can facilitate easy migration, and provide more flexibility and choice. Standardization, however, ranks low (fifth) in the UK/Ireland, while it is a priority in Northern Europe.

The ability of cloud suppliers to offer service level agreements ranks fourth. However, it ranks seventh in the UK/Ireland and Northern Europe. This feature has greater importance for mid-size companies, as it is ranked second.

Scalability ranks fourth overall, but only eighth in the UK/Ireland. When looking at company size, scalability is less important to mid-size companies (ranked eighth), as they face less unpredictability in their demand for IT resources. In terms of industry, scalability received the same rank (eighth) from companies in professional services and financial services.

The fact that cloud offerings are provided 'as a service' appeals to CIOs and their peers in Central Europe, ranking third as opposed to seventh overall. Furthermore, it is of much lower importance in Western Europe, claiming tenth position.

The eighth most important feature overall, the on-demand feature of cloud services, was ranked second by the UK/Ireland and fourth by financial service companies. The self-

service feature, ranked ninth overall, is considered to be more important in Western Europe, where it was ranked fourth.

Interestingly, respondents find pricing models to be of lesser importance than other features of cloud services. CIOs and their peers across Europe are of the opinion that to achieve their main objective of cost-cutting, the most important features of cloud services are their flexibility and the benefits they provide for IT optimization.

3.4. Fact from the hype: Are we there yet?

~ About 75 percent of companies have either adopted or are currently evaluating cloud services ~

While the IT community struggles to reach common ground on the definition (or definitions) of cloud services, CIOs and their peers are evaluating multiple cloud services within the context of the software-, platform- and infrastructure-as-a-service models. By outsourcing non-critical services to an external supplier they can shift the burdens of risk and management associated with those services, enabling their in-house IT departments to focus on business-critical tasks. This process is called 'accelerating cloud adoption'

3.4.1. Current adoption levels of cloud services

Considerably more companies are adopting or evaluating cloud services than are rejecting them. 35 percent of companies surveyed have adopted a cloud-based service model or are in the process of implementing one. A larger percentage (42 percent) are in the process of evaluating cloud services, while only 4 percent said that they had evaluated cloud services but did not proceed with implementation. In addition, 19 percent of CIOs and their peers responded that they have not considered cloud services.

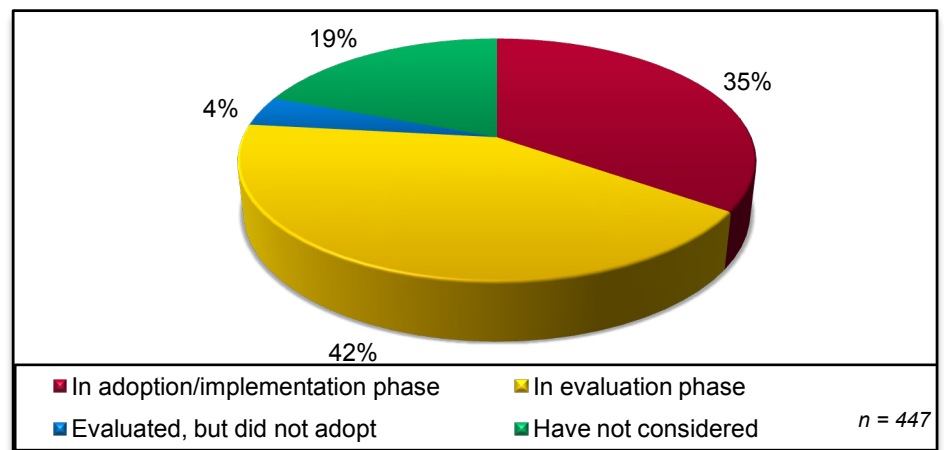


Exhibit 8: Cloud services adoption status

Southern Europe is ahead of other regions in adopting cloud services (50 percent), while a significant proportion of companies in the UK/Ireland are still evaluating cloud services, indicating a potential demand in the near future.

Among different industries, adoption of cloud services by media service companies is highest (39 percent)—not surprising given their greater familiarity with them. Companies

offering financial services are the most aggressive in evaluating cloud services (55 percent), suggesting a potential customer base for suppliers of cloud services.

Mid-size organizations are the quickest in the adoption of cloud services, and only a small fraction of them (2 percent) has yet to start thinking about cloud services.

Clearly cloud services are on the agenda for European CIOs. The question is: are the early adopters planning to expand their use of cloud services and are those considering it planning on moving from consideration to adoption? If so, how quickly and for what services?

The data on adoption levels discussed above is for all respondents, including those who were disqualified from participating in the remainder of the survey due to their non-consideration of cloud services. This therefore gave a sample size of 447 for this question.

3.4.2. Share of cloud services within IT

After the economic downturn, CIOs and their peers are more careful when it comes to spending their shrinking IT budgets. They are making efforts to reduce the need for capex and are moving resources to more flexible opex.

As a majority of CIOs and their peers across Europe are still evaluating cloud services, 30 percent of them estimate that cloud services will account for less than 20 percent of their IT budgets in the next 12 months. This figure is highest in Central Europe, where 59 percent of companies expect such a trend in their IT spend.

~ A majority believe that cloud services will contribute 21–40 percent of their IT budgets in the next 12 months ~

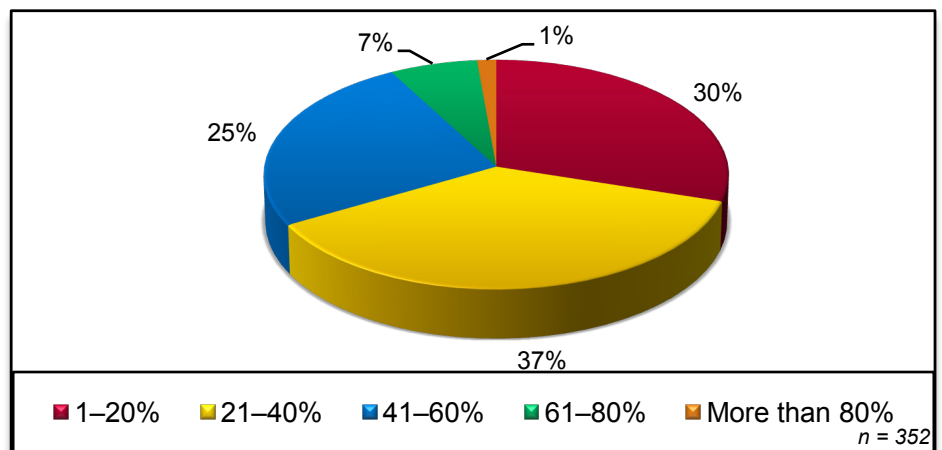


Exhibit 9: Cloud share of IT budgets in the next 12 months

Fully 37 percent of companies believe that cloud services will contribute 21–40 percent of their IT portfolio in the next 12 months. Companies in the UK/Ireland are most bullish about this estimate (44 percent).

25 percent of respondents believe that cloud services would account for 41–60 percent of their IT budgets in the next 12 months, with Southern Europe scoring the highest (30 percent).

The public sector does not expect a major change in its traditional budget allocation process. As opposed to other industries that expect cloud services to consume 21–40 percent of their IT budgets, public services expect less than 20 percent of their IT budgets to be allocated to cloud services.

With the increased share of cloud expenditure in their budgets, CIOs and their peers will rely more heavily on cloud services to help them meet their challenges. This emerges as a huge sales growth opportunity for cloud-service suppliers.

3.4.3. Preferred cloud deployment model

There are a variety of cloud deployment models being considered or used by companies; factors such as the security, control, visibility and reliability of each model determines which IT service is most suitable for being deployed in the cloud. The following are the deployment models that were evaluated (based on the NIST definitions).

- Enterprise (hybrid) clouds: two or more cloud types
- Community clouds: shared by several organizations that share a common objective
- Private clouds: created on the internal data centers of the company and not shared with other companies
- Public clouds: owned by a company, but offered to other cloud suppliers or end-users

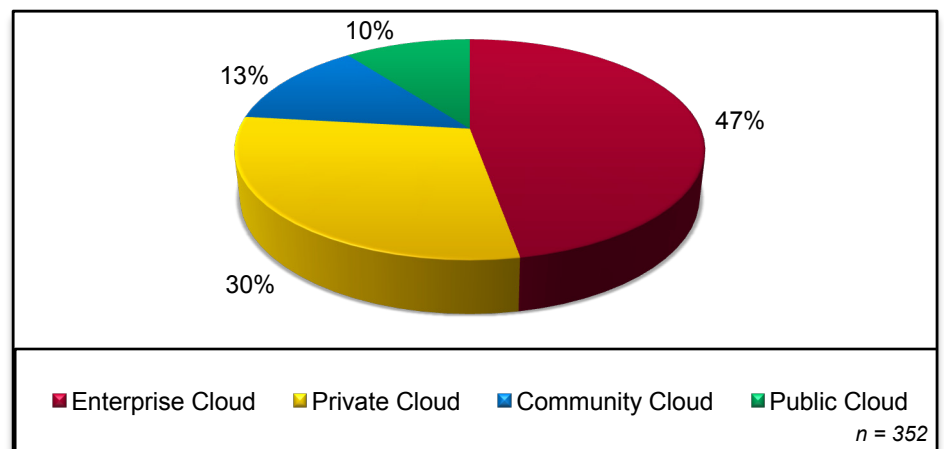


Exhibit 10: Preferred deployment model

About half of the respondents are keen on deploying an enterprise cloud model that would give them access to a combination of two or more cloud types, enabling data and application portability. Companies in the media industry are most in favor of such types of clouds. 30 percent of respondents prefer an internally-hosted cloud within their company premises. This response could stem from the security concerns that surround cloud services. This concern is strongest in the UK/Ireland, where more respondents favor private clouds (42 percent) over enterprise clouds (33 percent). Only a few opted for public clouds (10 percent) or a community cloud model (13 percent). Unsurprisingly, companies providing financial services are least in favor of public clouds.

The responses clearly show that there are strong concerns around public or community clouds; companies that are looking to adopt cloud services would prefer to host them internally on private clouds or outsource some low-risk applications to hybrid or enterprise clouds.

3.4.4. Services being used or evaluated

Cloud service offerings constitute an array of IT applications and services. Companies are looking at a range of applications that can be hosted via the cloud. We looked at some of the key applications that can be delivered as cloud services.

Software-as-a-Service (SaaS): SaaS was already used in the technology market before the concept of cloud services was formalized.

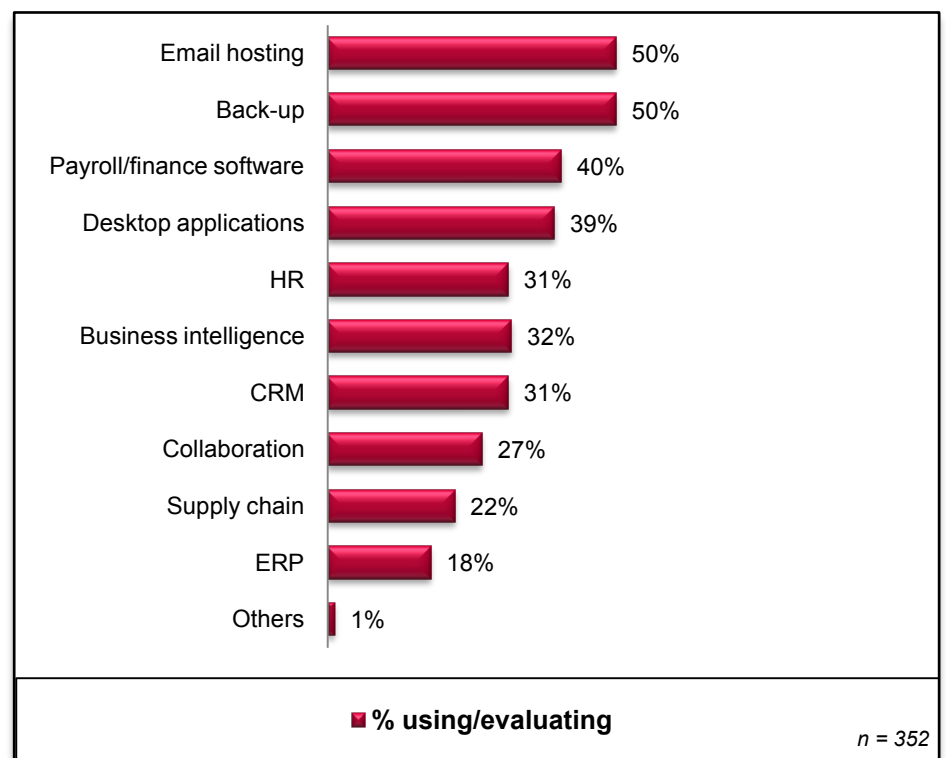


Exhibit 11: Types of SaaS used/evaluated

50 percent of companies are currently evaluating or using cloud services for email services and the back-up of critical data. About 40 percent of them are evaluating or using hosted payroll or finance applications and desktop applications. About one-third of CIOs and their peers reported evaluating or using HR, BI and CRM tools. An interesting observation is that business intelligence ranks as the second most used or evaluated service in the UK/Ireland (42 percent), whereas it occupies sixth position overall. Only one-quarter of respondents are evaluating or using collaboration and SCM tools, and a similar percentage of respondents are evaluating or using ERP solutions through the cloud.

While email hosting is being used or evaluated by almost half of respondents overall, this percentage drops to one-third in Northern Europe. Southern and Central Europe are very different in their use or evaluation of back-up solutions via the cloud: Southern European

~ Companies in Southern Europe are using/evaluating back-up services the most, even higher than email hosting (65 percent) ~

companies are using or evaluating back-up services the most—even higher than email hosting (65 percent), while this figure is only 27 percent in Central Europe. Overall, the trend for Central Europe is different from that for other regions. Desktop applications are used or evaluated by only a quarter of respondents, and supply chain is used or evaluated by just 4 percent of respondents. 46 percent are using or evaluating collaboration services via the cloud, indicating the highest usage among all regions. In the UK/Ireland, both business intelligence and back-up services are used or are being evaluated by 42 percent of respondents. Only 6 percent of respondents in this region use or plan to use ERP solutions.

Across different industries, back-up is of greatest importance to companies in the public sector (62 percent).

Interestingly, compared with small- and mid-size companies, only a small proportion of large companies are using or evaluating email hosting (40 percent) and other desktop applications (27 percent). Large companies are focusing on other more costly applications such as HR and ERP (40 percent and 28 percent, respectively).

Platform-as-a-Service (PaaS): External hosting of platforms allows the easy deployment and scalability of applications. Interesting observations have surfaced across this segment.

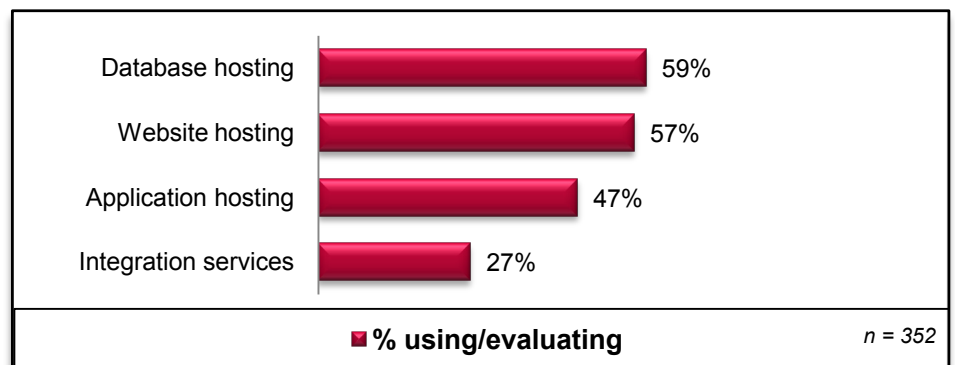


Exhibit 12: Types of PaaS used/evaluated

Database hosting received the highest preference (59 percent) within PaaS. Almost an equal percentage of respondents (57 percent) are evaluating or using website hosting through cloud services. 47 percent are looking at hosting internal applications and about a quarter are evaluating or using cloud services for integration services.

Subtle differences are observed across region, industry and company size. Integration services are being used or evaluated by fewer respondents in Central Europe (15 percent), as well as those in the media industry (18 percent), when compared with trends in other regions and industries.

Infrastructure-as-a-Service (IaaS): The growing challenges of managing server farms are increasingly pushing companies to think about alternatives. IaaS makes it

~ Security, servers and storage are the most popular services among the various applications of IaaS being used/evaluated by CIOs and their peers ~

extremely easy and affordable to provide resources such as servers, connections and storage.

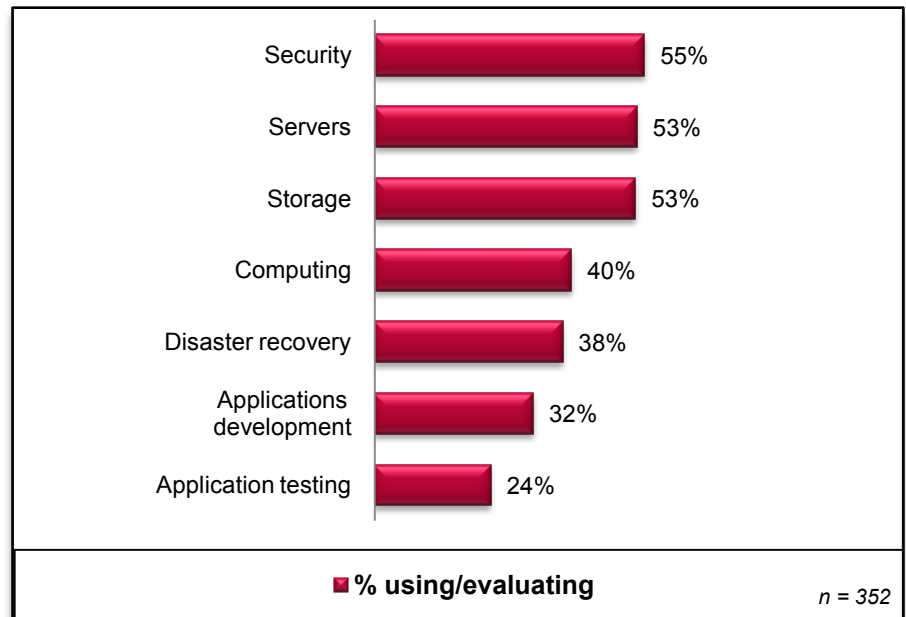


Exhibit 13: Types of IaaS used/evaluated

Security (55 percent), servers (53 percent) and storage (53 percent) are the most popular services among the various applications of IaaS being used or evaluated by CIOs. About 40 percent of respondents are evaluating or using cloud services for computing tasks, approximately one-third for disaster recovery measures and the development of applications, and less than a quarter for application testing.

CIOs and their peers in the UK/Ireland are using or evaluating disaster recovery tools to the same extent as they are examining hosting servers through a cloud-based solution (47 percent). Security received the highest response from Southern Europe (67 percent). A noticeable percentage of CIOs and their peers in Northern Europe (42 percent) are exploring or using cloud services for application development, and close to a third are eyeing computing services, indicating the lowest interest within all the regions. In contrast to this, Central Europe has the highest proportion of CIOs and their peers considering using cloud services for computing power.

Compared with media companies (39 percent), a significant percentage (64 percent) of financial service companies are using or evaluating hosting servers via the cloud. Security received a higher response from public-sector firms (67 percent) than from other industries.

3.5. Judging the gap

As we've seen, cloud services are integral to the strategies of many CIOs; at least, for those who are aware of them. Let's not forget that 56% of the respondents who

~ Security as a Service received the highest response from Southern Europe (67 percent) ~

answered the first survey question said that they were unfamiliar with cloud services, indicating that suppliers of cloud-based services have a lot of work to do. In addition to reaching and educating those who don't know a lot about the opportunities afforded by cloud services, however, the industry also needs to understand how to increase the adoption of cloud services among those who are aware of them. What, if anything, is holding CIOs back from considering or adopting cloud services? What needs are cloud services felt not to be addressing right now?

3.5.1. Current barriers to adoption

~ Security is voiced as the biggest barrier to adoption of cloud services ~

A significant 68 percent of respondents highlight security of cloud services as the biggest barrier to adoption. The integration of cloud services into internal IT applications is cited as the second biggest barrier (61 percent). Performance/reliability follows closely, with 58 percent of CIOs and their peers doubting the ability of the cloud to provide uninterrupted service. Further, while the cloud is seen as a means to reduce costs, 47 percent of respondents are not sure how the service would be priced and need help in conveying the potential financial benefits of the cloud. Compliance and regulation are mentioned by 43 percent of respondents, and about a third suggest lock-in as an important barrier to adoption.

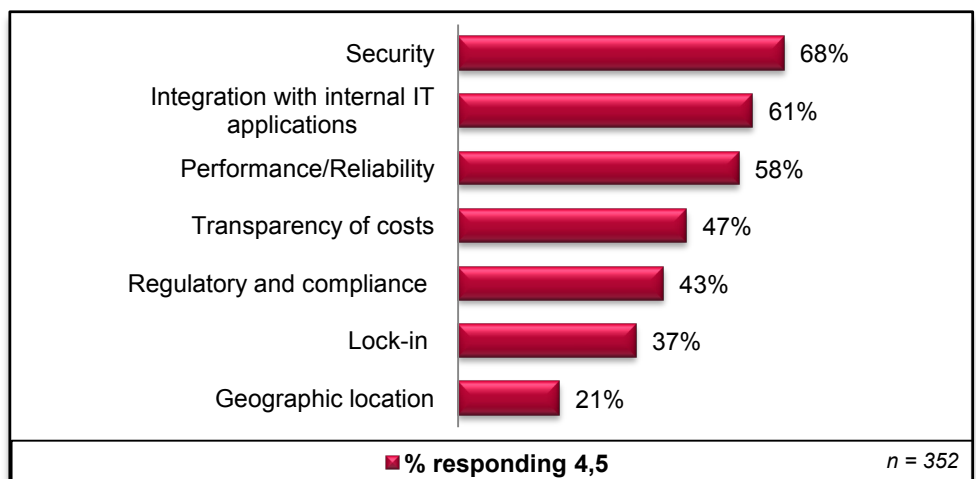


Exhibit 14: Barriers to the adoption of cloud services

#: Respondents were asked to rate the options on a 5-point scale where '1' was lowest and '5' was highest.

While data security is of the utmost importance to IT executives, the geographic location of data is important to less than a quarter of respondents. At 48 percent, Southern European companies are most apprehensive of getting locked in to a proprietary vendor solution. Furthermore, security is of huge concern to companies in Northern Europe, with 78 percent of companies rating this factor as important.

Only 28 percent of companies in Central Europe rate regulatory and compliance issues as important—the lowest among all regions. This could be related to Central Europe's response to the importance of in-country government endorsement as a factor enabling

~ Geographic location is voiced as the prime concern by companies in the media industry ~

~ About three-quarters of IT executives across Europe believe that quality assurance is one of the most important factors ~

~ Quality assurance is of least importance to respondents in Northern Europe and of maximum importance to CIOs in the UK/Ireland ~

the adoption of cloud services (see next section), which was notably of lowest importance.

It is interesting that while most companies are concerned about security, companies in the media industry noted integration (78 percent) and geographic location (31 percent) as their prime concerns. Companies in the financial sector are least concerned about the transparency of costs (38 percent). Across all industries, public-sector organizations are most concerned about the security of data, as almost three-quarters of CIOs and their peers expressed this concern.

Trends across companies of different sizes were similar, although large companies (1,000+ employees) expressed the biggest concern over regulatory and compliance issues (53 percent) compared to small- and mid-size companies.

3.6. How to bridge the gap?

Cloud services certainly have notable features that are compelling to CIOs and their peers. To boost this growing confidence in cloud services, service suppliers must continue to address the factors seen by CIOs as vital for the wider adoption of cloud services.

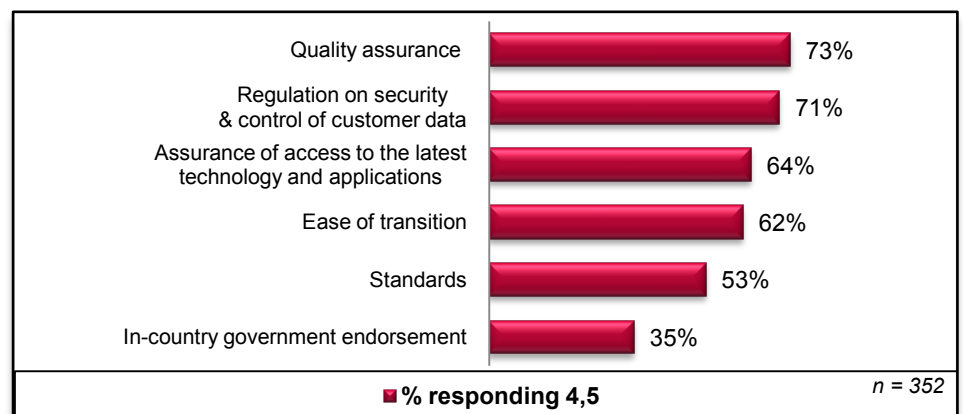


Exhibit 15: Factors enabling the adoption of cloud services

#: Respondents were asked to rate the options on a 5-point scale, where '1' was the lowest and '5' was the highest.

Almost three-quarters of CIOs and their peers believe that quality assurance is one of the most important factors that can encourage the adoption of cloud services.

The regulation on the security and control of data (71 percent), assurance to access the latest technology (64 percent) and the ease of transition from the current IT platform to a cloud environment (62 percent) are rated as important factors. More than 50 percent rate the meeting of standards as important, but only 35 percent believe that it is important to have in-country government endorsements for using cloud.

Compared with its rating by other regions, quality assurance is of least importance to respondents from Northern Europe (63 percent) and of maximum importance to CIOs in the UK/Ireland (80 percent). In Southern Europe, a sizeable 44 percent of CIOs and their

peers rate in-country government endorsements as important. However, only 24 percent of respondents in Central Europe perceive government endorsements as being vital—the lowest among the regions.

A large percentage (75 percent) of media companies value assurance of superior quality and vendors' ability to provide them with access to the latest technology; this percentage is higher than in any of the other industries. Not surprisingly, the public sector has the largest proportion of respondents (45 percent) who consider in-country endorsements as an important factor encouraging them to use cloud services.

3.7. Who is going to help?

Among all the hype surrounding cloud services, the confusion of definitions, and the sheer number of suppliers claiming to offer cloud services, CIOs have a tough task ahead when selecting which suppliers should help them in define and implement their cloud strategy. So how are they narrowing the field?

3.7.1. Criteria for evaluating potential suppliers

CIOs and their peers have rated the qualities that they look for when evaluating potential suppliers of cloud services.

In light of the observation that security is perceived as the biggest barrier to the adoption of cloud services, it is not surprising that CIOs and their peers expect suppliers to help them address this concern. The factor received a high score of 4.36. Next, companies expect suppliers to be a one-stop shop that can take responsibility for providing end-to-end services (network, infrastructure and platform). This factor ranked second with a score of 3.62. Price and SLAs, as well as suppliers' ability to provide strong business continuity and disaster recovery processes, were next on the list, and were similarly ranked. Vendor compliance with local standards came in last.



Exhibit 16: Expectations from suppliers

While end-to-end management is ranked second overall, the UK/Ireland rates price (second position), business continuity (third position) and performance SLAs (fourth position) above it. In contrast, CIOs and their peers in Central Europe rank price as the fifth most important factor, and performance SLAs are in second position.

End-to-end responsibility takes fifth position for media and government companies. Financial companies rank 'business continuity and disaster recovery' third as opposed to its overall fifth position. Small companies also rank this factor in third position, possibly because of limited back-up infrastructure available on the premises.

These results correlate closely to the results found when companies were surveyed on the barriers to adoption of cloud services. It is clear that those suppliers that offer network, infrastructure, platform and end-to-end SLAs are in a strong position.

3.7.2. Type of suppliers used or evaluated

Before the procurement team settles on their preferred supplier, they need to evaluate the type of supplier that would best understand their needs. Due to differences in industry dynamics, suppliers need the right industry knowledge and the scale to support their clients' IT tasks to ensure guaranteed quality of service.

~ Almost one-third prefer using a professional managed hosting company for their cloud services needs ~

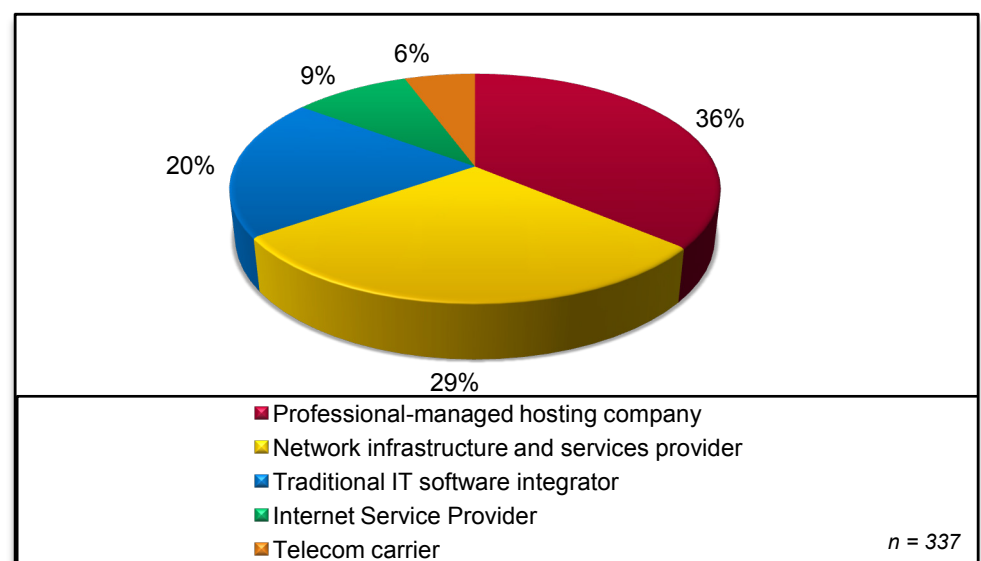


Exhibit 17: Preferred type of cloud services supplier

The majority of CIOs and IT executives trust outsourcing their cloud services needs to a professional-managed hosting company (36 percent) or a network infrastructure and services provider (29 percent). Only one-fifth prefer procuring cloud-based services from a traditional IT software integrator. Less than 10 percent of respondents would turn to an internet service provider (ISP), and telecom carriers have a long way to go with building trust, as a lowly 6 percent of respondents consider procuring cloud services from them.

A little over half (54 percent) of respondents in Northern Europe are in favor of employing a professional managed hosting company—the highest proportion across all regions. None

~ Only 6 percent of respondents consider procuring cloud services from telecom carriers ~

of the CIOs and their peers in Northern Europe prefers using a traditional IT software integrator.

Telecom carriers received their highest response (15 percent) from media companies.

3.7.3. Key suppliers used or evaluated

There are a number of cloud-service suppliers providing a range of solutions and services. Microsoft is the most preferred vendor for software (62 percent) and platform (68 percent) services. IBM leads the infrastructure services segment (51 percent) and ranks as the second most preferred supplier for SaaS after Microsoft, while the search engine giant Google claims second position for its platform services. Further, Cisco and Google are almost all equal in third position when it comes to the most preferred SaaS suppliers.

Managed Services suppliers such as COLT, while only recently launching cloud services into the market, receive a high preference from respondents with regards to IaaS (15 percent), SaaS and PaaS. This supports the results from section 3.7 regarding the type of cloud suppliers that CIOs and their peers are looking to work with.

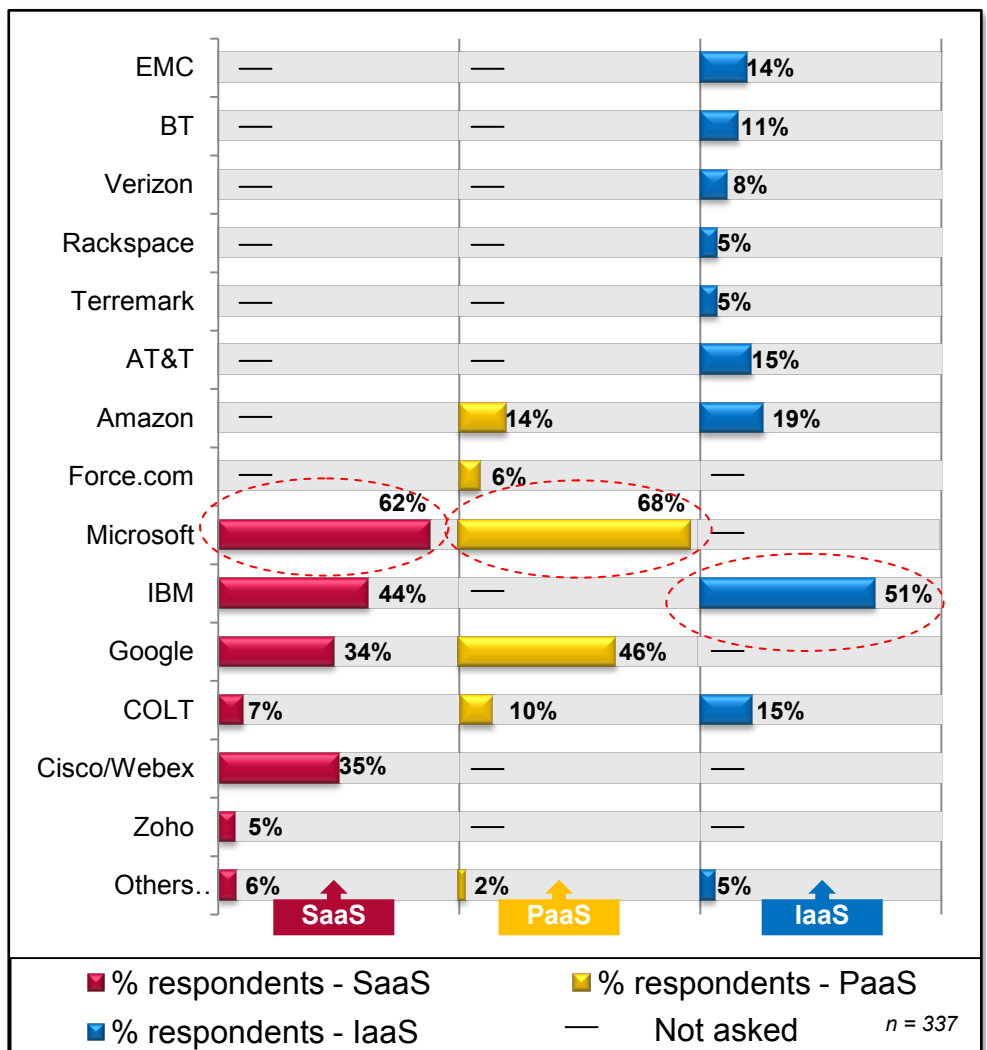


Exhibit 18: Preferred suppliers for cloud solutions

~ IBM is the most preferred
vendor for IaaS ~

In Northern Europe, Google swapped its position with IBM from fourth to second position as a SaaS supplier. A similar observation is made for small-size companies, for which Google ranks second; mid-size and large companies rank Google fourth as supplier of SaaS. As Google principally caters to the B2C segment, the consumerist nature of small companies explains their preference for Google over IBM.



3.8. Country observations

3.8.1. United Kingdom

Nearly 50 percent of CIOs and their peers are familiar with the concept of cloud services; 25 percent of these have either adopted or are implementing cloud services, and nearly 50 percent are evaluating cloud services over next 12 months.

Business Issues	Features	Barriers to Adoption
Cost reduction	Gain access from anywhere	Security
Flexibility	Available on demand	Integration with internal IT applications
Business transformation	Ability to deliver a combination of private and public cloud services	Performance/reliability

Table 1: Key survey results in the UK

Cost reduction, flexibility and business transformation are considered the main business issues concerning CIOs. In addition, security, integration into their current IT setup, and reliability are the most visible barriers to the adoption of cloud services among CIOs and their peers. Flexibility provided by the cloud in terms of accessibility from anywhere, availability on demand and ability to deliver a combination of private and public cloud services, are most valued.

Interestingly, CIOs and their peers have a narrow understanding of cloud services. About 44 percent of them believe that cloud services primarily help in reducing internal costs and consider that to be a key driver when considering adoption. Another 25 percent perceive that cloud services help in 'meeting resource requirements to achieve their business goals'.

In the UK, nearly 50 percent of CIOs and their peers confirmed that they are currently using or evaluating email hosting (48 percent) and desktop applications (46 percent). A

little over 50 percent of CIOs are presently using or evaluating web hosting (56 percent) and security (54 percent) for platform and infrastructure hosting services, respectively.

Quite notably, 8 of 10 respondents said that quality assurance from cloud suppliers will facilitate service adoption in their cases. A slim majority (51 percent) expects marginal growth of cloud services. Nearly 4 out of 10 companies expect cloud services to consume 21–40 percent of their IT budget over the next 12 months.

Although companies in the UK do want the greater flexibility that cloud services promise, they are nevertheless treading cautiously in their adoption.

3.8.2. Ireland

Familiarity with the concept of cloud services is low in Ireland, with nearly three-quarters of participating CIOs and their peers reporting this fact. Reduction in cost, flexibility and business transformation are the most critical business issues. CIOs and their peers feel that secure access, service-level guarantees and provision of IT as a service are the most attractive features of cloud services.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Ability to deliver secure access	Performance/reliability
Flexibility	Ability to offer service-level guarantees	Integration with internal IT applications
Business transformation	Provided as a Service	Security

Table 2: Key survey results in Ireland

56 percent of respondents are currently using or evaluating SaaS for business intelligence. Platform services such as database and application hosting are currently being used or evaluated by over half of the IT executives; computing and disaster recovery are the most used or evaluated infrastructure services as reported by nearly 7 of 10 respondents.

Factors such as assurance of quality, access to the latest technology, ease of transition and regulation on security and the control of the customer data would encourage the adoption of cloud services. Almost 8 out of 10 CIOs and their peers envision an increase in cloud services in the coming year. Nearly 56 percent predict 21–40 percent of their IT budget moving to cloud services. However, performance/reliability, integration into internal IT applications and security remain the biggest barriers to adoption of cloud services.

CIOs in Ireland are quite optimistic about the growth of cloud services.

3.8.3. France

Nearly 9 out of 10 CIOs and their peers are familiar with the cloud services. About 40 percent of companies have already implemented them and another 30 percent are currently evaluating adoption. Almost 25 percent of respondents feel that the main objective of using cloud services is to help them 'scale up to meet their business goals' or

fulfil the required in-house skills sets. Barriers such as performance, compliance and transparency of costs contribute to the challenge of convincing the less informed CIOs and their peers.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Standardized IT capability (services, software or infrastructure)	Performance/reliability
Innovation	Ability to offer service-level guarantees	Regulatory and compliance
Flexibility	Ability to deliver secure access	Transparency of costs

Table 3: Key survey results in France

Standardized IT capability, service-level guarantees and secure access were ranked as the top three features of cloud services. Cost reduction, innovation and flexibility are seen as critical challenges for CIOs.

A majority of CIOs and their peers are currently using or evaluating finance/payroll and back-up (57 percent each) as Software-as-a-Service. 62 percent of CIOs and their peers at present are using or evaluating web hosting, while 54 percent of them are using or evaluating servers as platform and infrastructure services, respectively. France witnessed a higher response (65 percent) for enterprise clouds than any other country.

The ease of transition and regulation on security (77 percent) and the control of customer data (64 percent) were cited as the most important factors that would encourage the adoption of cloud services. A little over one-third of respondents anticipate a significant increase in cloud services adoption; furthermore, 41 percent forecast that 21–40 percent of their IT portfolio spending would be on cloud services in the next 12 months.

While predictions may be pointing upwards, CIOs and their peers still need extra assurance around security and compliance.

3.8.4. Germany

Germany displayed a significant familiarity, with over half (56 percent) of the participating CIOs and their peers aware of cloud services. Of those, 60 percent mentioned that they are currently evaluating the adoption of these services.

Email hosting is the most used or evaluated Software-as-a-Service for nearly 52 percent of CIOs and their peers. The most used or evaluated platform is web hosting (two-thirds), and servers are being used or evaluated by nearly the same portion of respondents to fulfill their infrastructure requirements.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Gain access from anywhere	Security
Flexibility	Ability to deliver secure access	Integration with internal IT applications
Risk mitigation	Self service	Performance/reliability

Table 4: Key survey results in Germany

In Germany, security, followed by integration into internal IT applications and performance/reliability are the top barriers to the adoption of cloud services. CIOs here observe cost reduction, flexibility and risk mitigation as extremely critical challenges facing their businesses. Cloud services scores highly on features such as accessibility from anywhere, secure access and self-service model.

Regulation on security and the control of customer data (77 percent) and assurance of access to the latest technology and applications (70 percent) are significant drivers facilitating the adoption of cloud services. Almost all respondents from Germany predict an increase in the adoption of cloud services, with nearly 43 percent expecting a significant increase within 12 months. About 41 percent of CIOs and their peers believe that in the next 12 months, 21–40 percent of their total IT expenditure will be allocated to cloud services.

Germany had no respondents rejecting cloud services after having evaluated it. With a large base of evaluators and bullish growth projections, there is little doubt that companies in Germany would be interested to know more about cloud services.

3.8.5. Belgium

Almost 47 percent of CIOs and their peers reported that they are familiar with the cloud services concept, of which one-third said that they are not evaluating the service at all; 38 percent are contemplating the adoption of cloud services over the next 12 months.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Available on demand	Security
Flexibility	Standardized IT capability (services, software, or infrastructure)	Transparency of costs
Risk mitigation	Ability to deliver secure access	Integration with internal IT applications

Table 5: Key survey results in Belgium

Approximately 8 out of 10 CIOs surveyed expect the adoption of cloud services to increase, and almost 43 percent assume that 20 percent or less of their total IT spend will be allocated to this adoption over the next 12 months.

CIOs and their peers in Belgium rank availability on demand as the top-most valued feature of cloud services, followed by standardized IT capability and secure access. Currently, 57 percent of CIOs and their peers are using or evaluating email hosting as a software service, and 7 out of 10 them are presently using or evaluating web-hosting platforms. Over half (57 percent) are currently using or evaluating disaster recovery to fulfil their infrastructure needs. At present, security, transparency in costs and integration into internal IT setup are the chief obstacles to cloud services adoption.

Cost reduction, flexibility and risk mitigation are considered the most critical business issues. However, regulation on security and the control of customer data (86 percent) and

assurance of access to the latest technology and applications (71 percent) are recognized as reasons for companies to increase their cloud services adoption.

Apart from the commonly expressed concerns of security and integration, CIOs and their peers want a more transparent model of pricing that would help them in cost-benefit analysis. Furthermore, 43 percent of CIOs and their peers see cloud services taking up between 1-20 percent of their overall IT budget over the next 12 months.

3.8.6. The Netherlands

About 7 out of 10 CIOs and their peers from the Netherlands are unfamiliar with the concept of cloud services. 53 percent of those who are familiar with the service are currently evaluating the adoption of cloud services within the next year.

Business Issues	Features of Cloud	Barriers to Adoption
Flexibility	Gain access from anywhere	Performance/reliability
Cost reduction	Standardized IT capability (services, software, or infrastructure)	Integration with internal IT applications
Risk mitigation	Ability to offer service-level guarantees	Security

Table 6: Key survey results in the Netherlands

All the respondents agreed that flexibility is the biggest challenge, while cost reduction and risk mitigation are other important business issues. Ability to access from anywhere was ranked as the most desired feature of cloud services, followed by standardized IT capability and service-level guarantees. For nearly half of them 'scalability of resources to meet business goals' drives their interest in cloud services.

Half of the participating CIOs and their peers indicated that they are presently using or evaluating storage, servers and security for their infrastructure needs. Web hosting (64 percent) and desktop applications (43 percent) are the most used or evaluated services for meeting platform and infrastructure needs respectively.

Two-thirds of the CIOs and their peers foresee that the adoption of cloud services would increase marginally over the next 12 months. Almost 73 percent forecast that 40 percent or less of their total IT spending over the next year would be used towards adopting cloud services. However, performance/reliability (73 percent), integration into internal applications (67 percent) and security (60 percent) continue to be significant concerns when considering cloud services.

With flexibility as their most critical business issue, SLA as one of the desired features of cloud services and strong concerns over reliability and integration, CIOs and their peers in the Netherlands will expect high a standard and level of quality from their cloud suppliers.

3.8.7. Spain

Close to 64 percent of CIOs and their peers consider themselves to be familiar with cloud services; over half (52 percent) of these have already adopted it. Currently, 67 percent of

CIOs and their peers are using or evaluating back-up as a cloud-based service. Equal proportions (71 percent) of respondents are presently using application hosting and security for meeting platform and infrastructure needs respectively.

Business Issues	Features of Cloud	Barriers to Adoption
Risk mitigation	Gain access from anywhere	Security
Cost reduction	Ability to deliver a combination of private and public cloud services	Performance/reliability
Innovation	Dynamically scalable	Integration with internal IT applications

Table 7: Key survey results in Spain

Features of the cloud such as access from anywhere, possibility of combination of private and public cloud services, and scalability, are most desired by respondents. Risk mitigation (58 percent), cost reduction (56 percent) and innovation (56 percent) are considered important business issues. Security (79 percent) is the biggest barrier to the adoption of cloud services, followed by performance/reliability (58 percent) and integration into internal IT applications (58 percent).

Respondents see a big potential in cloud services, and nearly 9 of 10 CIOs and their peers expect its adoption to increase in the coming year. A significant proportion (35 percent) of CIOs and their peers predict that 41–60 percent of their total IT expenditure will be allocated to cloud services.

Clearly in Spain CIOs and their peers are well informed about cloud services as a technology. They feel that features such as scalability and hybrid clouds will help them face their most critical business issue of reducing risk; however, they need assurance from suppliers to overcome their concerns around security issues related to cloud services.

3.8.8. Portugal

Nearly 6 out of 10 respondents in Portugal reported low familiarity with cloud services; 45 percent of those familiar with the concept are currently evaluating adoption of cloud services in the next 12 months.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Standardized IT capability (services, software, or infrastructure)	Integration with internal IT applications
Flexibility	Gain access from anywhere	Security
Risk mitigation	Ability to deliver a combination of private and public cloud services	Regulatory and compliance

Table 8: Key survey results in Portugal

Participants listed standardized IT capability, anywhere access, and ability to deliver a combination of private and public cloud services as the most attractive features of cloud services. Integration with internal IT applications appeared to be the biggest roadblock for the adoption of cloud services, with security and compliance mentioned as other key barriers.

Cost reduction (93 percent), flexibility (89 percent) and risk mitigation (79 percent) are viewed as critical business issues by CIOs and their peers. The drive to reduce costs is reflected in the fact that 57 percent of respondents feel that this feature of cloud services plays a key role when considering its adoption.

Back-up is the most used or evaluated Software-as-a-Service, mentioned by 64 percent of respondents. Almost 7 out of 10 CIOs and their peers are currently using or evaluating database hosting platform or storage from the infrastructure side. Portugal had the highest proportion of responses in favor of telcos as a potential supplier when compared with other countries. Quality assurance and the assurance of access to the latest technology are the main factors encouraging the adoption of cloud services, with nearly 8 out of 10 respondents mentioning these factors.

In general, cloud services are positively received in Portugal. 57 percent of CIOs and their peers anticipate a significant increase in the adoption of cloud services over the next 12 months. Close to 32 percent of CIOs expect to spend 41–60 percent of their total IT budget on the adoption of cloud services.

Companies in Portugal need assurance around quality and the latest technology, and will need to overcome their concerns over compliance as one of the barriers to the adoption of cloud services.

3.8.9. Italy

Nearly 60 percent CIOs and their peers claimed to be familiar with cloud services; a significant proportion (76 percent) of these have already proceeded with adoption.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Gain access from anywhere	Security
Flexibility	Ability to deliver secure access	Performance/reliability
Innovation	Ability to offer service-level guarantees	Integration with internal IT applications

Table 9: Key survey results in Italy

About 43 percent of CIOs and their peers mention the reduction of internal costs as a driver of their interest in cloud services. They feel that cost reduction (88 percent), flexibility (86 percent) and innovation (74 percent) are their most critical business issues. The cloud services feature favored most is access from anywhere, followed by secure access and service-level guarantees. Security emerges as the most significant barrier to adoption, as mentioned by nearly 7 out of 10 respondents, with performance/reliability

(69 percent) just behind and integration into internal IT applications (62 percent) also considered a significant barrier to the adoption of. Close to 75 percent of CIOs believe that regulation on security and the control of customer data and quality assurance are factors encouraging the thrust towards cloud services.

Back-up (SaaS), database hosting (PaaS) and security (IaaS) are the most used or evaluated cloud services. 9 out of 10 CIOs and their peers envision an increase in the adoption of cloud services in the next 12 months; 48 percent believe that 21–40 percent of their IT spend in the coming year would be accounted for by cloud services.

Italy has the highest adoption rate of cloud services within Europe for those surveyed. CIOs and their peers predict robust growth in cloud services, with a significant proportion of IT budgets being allocated to cloud services.

3.8.10. Sweden

Familiarity with cloud services is generally low among the CIOs and their peers surveyed in Sweden, with only 4 out of 10 respondents claiming to be familiar with the concept—though this percentage is higher than that in Denmark. Approximately 35 percent of those companies familiar with the concept have already adopted cloud services, with more than half in the evaluation process. Interestingly, respondents are relatively clear on the objectives of cloud services, as less than 10 percent relate the use of cloud services with lack of scalability or IT skills.

CIOs and their peers mention cost reduction and flexibility (both 71 percent) as the most critical business issues. Innovation and risk mitigation are considered critical by half of the respondents.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Ability to deliver secure access	Security
Flexibility	Standardized IT capability (services, software, or infrastructure)	Integration with internal IT applications
Innovation	Provided as a Service	Performance/reliability

Table 10: Key survey results in Sweden

Security, mentioned by 86 percent of CIOs and their peers, is clearly the most significant barrier to the adoption of cloud services; a greater percentage of respondents in Sweden listed this as a barrier than in any of the other European countries included in the survey. Integration with internal IT applications and performance/reliability are also viewed as barriers to the adoption of cloud services.

Assurance on quality was cited by 7 out of 10 CIOs and their peers as the most influential factor enabling the adoption of cloud services. Ease of transition and assurance of access to the latest technology and applications, are other motivating factors.

Over the next 12 months, about 85 percent of respondents envisage an upward movement in the growth of cloud services. Similar fractions of CIOs and their peers foresee cloud services contributing to up to 60 percent of their total IT expenditure.

CIOs and their peers in Sweden have a serious concern around security, which will need to be addressed by cloud services suppliers.

3.8.11. Denmark

CIOs and their peers in Denmark display significantly low levels of familiarity with cloud services, with 8 out of 10 respondents reporting that they are unfamiliar with them. Those who claim to be familiar state that the driver of cloud services are lack of scalability (15 percent) and skill sets (15 percent).

Flexibility is perceived as an extremely critical business issue by 7 out of 10 respondents. Cost reduction and risk mitigation are considered critical by 54 percent of CIOs and their peers. Furthermore, CIOs and their peers feel that security (69 percent), integration into internal IT setup (69 percent) and performance/reliability (38 percent) are existing barriers to the adoption of cloud services.

Business Issues	Features of Cloud	Barriers to Adoption
Flexibility	Dynamically scalable	Security
Cost reduction	Gain access from anywhere	Integration into internal IT applications
Risk mitigation	Standardized IT capability (services, software, or infrastructure)	Performance/reliability

Table 11: Key survey results in Denmark

Scalability was ranked as the most valued feature of cloud services, followed by the ability to access from anywhere and standardized IT capability. Among those currently using or evaluating cloud services, back-up and email hosting are being used or evaluated as a service by 55 percent of companies. About 73 percent of CIOs and their peers are using or evaluating database hosting (PaaS) and 45 percent are using or evaluating server (IaaS).

Regulation on security and the control of customer data and the ease of transition ranked as the most enabling factors for the adoption of cloud services. Close to 8 out of 10 respondents foresee an increase in cloud services adoption over the next 12 months.

When compared with other countries, Denmark has the highest proportion of companies rejecting cloud services after evaluating them (15 percent). Clearly, suppliers must pay attention to the concerns over security, integration and reliability that are being voiced by CIOs and their peers.

3.8.12. Austria

In Austria, 8 out of 10 CIOs and their peers are not familiar about cloud services; 46 percent of those who are familiar with cloud services are contemplating adopting it. The

most preferred features of cloud services are standardized IT capability, ability to access from anywhere and the ability to deliver secure access.

Business Issues	Features of Cloud	Barriers to Adoption
Cost reduction	Standardized IT capability (services, software, or infrastructure)	Integration with internal IT applications
Flexibility	Gain access from anywhere	Security
Risk mitigation	Ability to deliver secure access	Lock-in

Table 12: Key survey results in Austria

Cost reduction (88 percent), flexibility (81 percent) and risk mitigation (81 percent) emerged as the most critical business issues. Not surprisingly, 63 percent consider reduction in cost as the main reason for considering the adoption of cloud services.

53 percent of companies are presently using email hosting as a cloud-based service, web hosting (PaaS) is being used or evaluated by 60 percent of respondents and 53 percent are using or evaluating servers (IaaS).

8 out of 10 respondents believe that regulation on security and the control of customer data and quality assurance are the key factors contributing to the adoption of cloud services. 50 percent of CIOs and their peers in Austria think that 20 percent or less of their IT spend will be directed towards cloud services in the next year; almost an equal proportion (44 percent) believe it will be 21–40 percent.

Familiarity with cloud services is significantly low in Austria. Suppliers not only need to educate CIOs and their peers, but they must also build trust to overcome concerns about the security and control of data.

3.8.13. Switzerland

A little over half (54 percent) of CIOs and their peers from Switzerland are familiar with the concept of cloud services. Out of these, 35 percent are currently evaluating the adoption of cloud services, with only a small portion (14 percent) having already adopted it.

CIOs and their peers ranked access from anywhere as the most prized feature of cloud services, ahead of standardized IT capability and its capability to be provided as a service. Security and integration into internal IT applications emerged as the top barriers to the adoption of cloud services, with each mentioned by 54 percent of respondents.

Business Issues	Features of Cloud	Barriers to Adoption
Flexibility	Gain access from anywhere	Integration with internal IT applications
Risk mitigation	Standardized IT capability (services, software, or infrastructure)	Security
Cost reduction	Provided as a Service	Performance/reliability

Table 13: Key survey results in Switzerland

About 77 percent of respondents consider flexibility and risk mitigation as critical business issues, followed by cost reduction (69 percent). Database hosting (82 percent) is presently the most used or evaluated PaaS option; email hosting (55 percent) is reported as the most used or evaluated SaaS option; and computing (73 percent) emerged as the most used or evaluated IaaS option. Compared to all other countries COLT received the highest response as a potential cloud services supplier in Switzerland.

Nearly 8 out of 10 CIOs and their peers believe that regulation on security and the control of customer data are key enabling factors for the adoption of cloud services. 62 percent of respondents foresee an increase in the adoption of cloud services. Almost 7 out of 10 said that 20 percent or less of their total IT budget for the next 12 months would be accounted for by cloud services.

Like Denmark, rejection rates in Switzerland are also high, at 15 percent. The majority of CIOs predict cloud services to consume a small portion of their IT budgets. It is the barriers of security, integration and reliability that CIOs and their peers need to overcome to begin accepting cloud technology.

3.9. Conclusion: Who can you trust?

While the cloud services market is still fraught with early market misunderstanding and concerns, it is clear that there is a substantial alignment between the needs of CIOs and the perceived benefits of cloud services.

While there are significant barriers, CIOs and their peers are confident these will be overcome. Hence there is an optimism regarding the growth of the market, and the amount of budget CIOs are expecting to commit to cloud services.

The key question is: who is best placed to work with CIOs to deliver the cloud services they need?

Cloud services are an important new element in the provision of IT services. Its combination of flexibility, on-demand provisioning and pay-per-use charging is proving very attractive in a range of customer scenarios.

This research highlights the real opportunities of cloud services but also gives a pragmatic view on some of the issues faced by CIOs in moving to cloud services. It's important to note that the emergence of the cloud service model does not mean the death of traditional product and service delivery.

CIOs will need to look for a long-term partner in building a cloud strategy. For example, does the cloud provider have a track record of service and a service philosophy? What are the provider's roots (software vendor/telco/hosting provider/internet service provider)? Does it offer managed services already? What are its support and SLA capabilities?

Technical expertise, from network through data centre to application, is important. Enterprise cloud services are not about a customer purchasing a commodity utility—they are a means of delivering a managed IT service to a customer.

Given the need for private and hybrid cloud delivery, and for suppliers to be end-to-end accountable, together with the fact that CIOs' expectations of these services are best met by a traditional hosting or managed service provider with enterprise-level security experience, the field would appear to narrow dramatically. Even in a narrowed field, however, the CIO still needs to decide who to trust to advise them on their cloud service requirements, who can best deliver them, and who will be around for the long term to help them grow.

4.0 About Portio Research Ltd.

Portio Research Ltd is an independent research company, focussed on providing high quality, data-centric reports and database products. We specialise in the mobile and wireless sector, with an increasing awareness of the converging telecoms and media industries. We aim to help you by delivering honestly-priced research reports and analyst research that is based on hard facts and proven numbers, rather than hype and speculation.

Our research reports aim to address the current market issues and business trends that affect you, and we attempt to address the future outlook with market forecasts which sit somewhere between optimistic and pessimistic, ideally arriving at realistic. We aim to deliver market sizing data and analysis of current market topics in a timely and accurate fashion, using a combination of primary and secondary research derived from our extensive network of industry contacts, and market observation and experience. When conducting primary research we regularly interview from across our network of industry contacts. This primary research is then backed-up and substantiated against real-time industry data from various paid database subscriptions, reports and other market sources.

Our research reports include market summaries, analysis of business models and value-chain positioning, description and summary explanation of technologies covered, company case studies, country profiles and full market forecasts. Our research reports are aimed at the operations and strategy management level, intended for internal business planning and strategy consultation. We address each report topic from an agnostic viewpoint, aiming to address the concerns of operators, equipment vendors, service and application developers, brand owners, consultants, financiers and other interested parties from an equal, independent and unbiased stand.

Portio Research is always looking to help clients with bespoke data-centric research requests, and we can turn around tailored research projects quickly and cost-effectively. Please do contact us if you wish to discuss any possible projects; in the first instance, write to info@portioresearch.com

Visit www.portioresearch.com to learn more about our company and our other projects.

5.0 Notes

The margin of error on a sample size of 352 is +/- 5.18 percent with a confidence level of 95 percent. Interpretations at country, regional, company or industry levels are at best directional. Percents on questions where respondents could select only one answer may not sum to 100 due to rounding. Not every respondent answered every question.

The sample size for some questions is higher as opposed to 352. This is because apart from the ones who were qualified to take the survey, this data includes those respondents who were disqualified from participating in the remainder of the survey as they did not meet the screener criteria.