



Next Generation Datacentres Index – Cycle I – Cloud Findings

As part of the next generation datacentre (NGD) research, Quocirca also asked interviewees for their thoughts on cloud computing. This report provides the analysis and findings from this research.

May 2011

Cloud computing is all the rage – it seems that every vendor now has a cloud offering, that every service provider has “cloudified” its platform and that end users are well on the way to fully embracing cloud as a means of gaining access to applications, functions and data.

But what is the reality? Just what are large and very large organisations’ perceptions of cloud computing – and what does this mean to the future of cloud?

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Next Generation Datacentres Index – Cycle I – Cloud Findings

As part of the next generation datacentre (NGD) research, Quocirca also asked interviewees for their thoughts on cloud computing. This report provides the analysis and findings from this research.

The majority perception is that cloud is still at a very early stage of maturity

25% of respondents feel that it is too early to choose any winners in the cloud market, with a similar number expecting large incumbent companies such as IBM, Oracle and HP to bring cloud offerings to market that will become the long-term winners.

Overall, cloud is viewed positively

Just under half of respondents stated that cloud would either be an important part of their organisation's IT platform or that it would be a complete game changer. However, 16% stated that cloud had no part in their organisation's IT platform future at all, with a further 10% seeing it solely as a "passing fad".

Cloud security is seen as a show stopper, or a very high priority, for many – but as solvable by the majority

13% of respondents said that their worries around security in the cloud were what was stopping them from investigating any further. 27% stated that security was a top-of-mind issue when considering cloud. However, over half of respondents felt that cloud security might require a different approach but that it was an issue that could be surmounted relatively easily.

Overall, the USA, DCH and Nordics are the most positive regions for cloud

Through a simple maturity model, it becomes apparent that the USA (the home of many of the progenitors of cloud computing, at the technical and service levels) are the best disposed towards using cloud computing in their organisations. Germany and Switzerland (DCH) and the Nordics make up the top three – with the Middle East, Italy and Iberia being those least likely to use cloud.

Telco, utilities and media are the verticals best disposed towards cloud

Telcos – many of which would like to position themselves as cloud service providers – are the vertical best disposed towards cloud. Utilities and media make up the top three – with financial services, public sector and healthcare making up the bottom three.

Conclusions

Cloud computing, while being a topic of hot discussion within the vendor community, does not appear to have resonated completely with end user organisations. The overall view is relatively positive, however, but better education, a more coherent and cohesive approach to messaging from the vendor community and a business-led approach to how cloud can help an organisation is required for cloud to be able to deliver on its promises.



Background

Through 2004 to 2006, Quocirca carried out a series of research projects for Oracle, looking at the evolution of grid computing. Throughout this research, Quocirca used a set of definitions for different types of grid computing, based around a private grid, a shared grid, a public grid and a community grid. Although the research found that there was a continued move towards the *capability* to carry out grid computing, the actual usage of real grid computing was not so great. Eventually, due to various issues around how vendors marketed grid, how it was being sold and how it was being implemented, the idea of grid faded away as a concept.

However, the underlying concept of a massively virtualised environment providing resource on demand to a range of workloads still made sense, and from this was born the idea for cloud computing. Again, various definitions have been put forward for a private, public and hybrid environment – very similar to the definitions put forward by Quocirca seven years ago. However, the same issues are being seen; a lot of vendors jumping at the cloud bandwagon – some of them missing completely and some getting on the bandwagon and shouting their capabilities loudly, even where the offer is just a rebranding of a standard hosting solution.

This document looks at the actual perceptions of users, uncovering their thoughts on where they stand when it comes to cloud and how important they believe cloud will be to their own organisations.

Research methodology

The research was conducted using Quocirca's standard methodology. The interviews were carried out between February and March 2011. All interviews were carried out via telephone to reduce the skew associated with web-based research, where respondents tend to be from the two extremes of agreeing or disagreeing with the subject. Respondent profiles were chosen from a range of commercially available databases and were checked as part of the interview process to ensure that every respondent fell within the agreed profile. Where English was not spoken widely, all interviews were carried out in native language to avoid any issues with misunderstanding the questions. All results were quality checked to assure that no skew had been introduced by specific interviewing agents, that no responses were predominantly completed along an "average" score, and that all responses made sense within the context of the individual and organisation concerned.

The results of the research were analysed at an aggregate level and also by region, by vertical and by size of business. Cross correlations were also carried out to see how well responses tallied against each other.

The regions covered were as follows:

- USA – 100 interviews
- UK – 101 interviews
- Belgium/Netherlands (Benelux) – 102 interviews (50/52)
- Germany/Switzerland (DCH) – 111 interviews (81/30)
- France – 100 interviews
- Spain/Portugal (Iberia) – 102 interviews (31/71)
- Italy – 100 interviews
- Saudi Arabia/UAE (Middle East) – 103 interviews (51/52)
- Denmark/Finland/Norway/Sweden (Nordics) – 100 interviews (25/25/25/25)

The additional interviews per region were due to the need to ensure a good spread of vertical cover, which was:

- Financial Services – 141 interviews



- Healthcare – 125 interviews
- Media – 129 interviews
- Public Sector – 129 interviews
- Retail – 127 interviews
- Telco – 111 interviews
- Utilities – 115 interviews
- Other – 42 interviews

By size, the interviews were as follows:

- Tier 1 (>\$1b revenues) – 465 interviews
- Tier 2 (\$100m - \$1b revenues) – 454 interviews

In total, 919 interviews were completed and the results analysed.

The research was organised in four sections. The first three of these sections consisted of questions that together made up the sub-indices and overall index for the next generation datacentre (NGD) survey. This was reported separately, and that report can be found here as a freely downloadable Quocirca report: <http://www.quocirca.com/reports/593/next-generation-datacentres-index-cycle-i>

The fourth section of the interview looked specifically at respondents' views around cloud computing. This report covers the analysis and findings from the questions covering this part of the interviews.

From the research, a basic maturity model can be created, based on the views that the respondents have on cloud computing. From each question, a "score" can be provided for an individual's response. Then, an average can be created at an overall level as well as by country and by vertical. Throughout the report, these scores are used to help indicate how positive the various groups are towards the concept of cloud computing.

Where comparisons between regions and vertical markets are made, the "average" score for each section has been normalised to be a 100% figure, with each region or vertical compared against this. Therefore, a region or vertical with a score of 80% will have provided a score 20% below the overall average, one with a score of 120% will have had a score 20% above the average. Through this means, such normalised scores provide the basic maturity model, where those with the higher scores have a higher acceptance of the concept and promises of cloud as a platform.



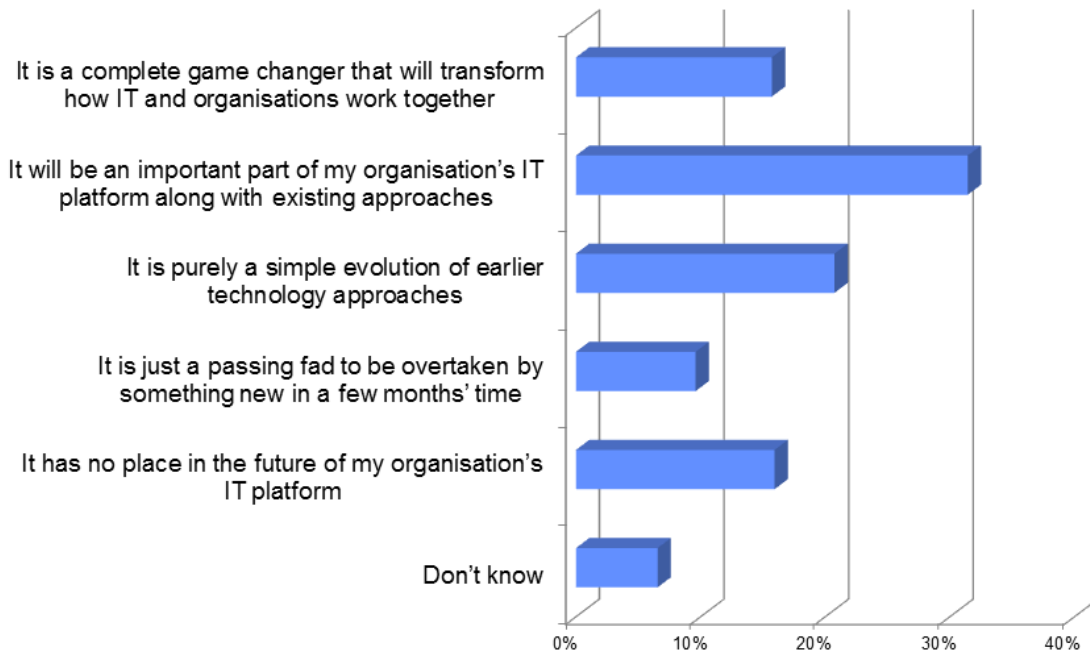
Research findings

The first question that interviewees were asked was: “What is your overall view of cloud computing?”

Figure 1 shows that 16% state that cloud has no part in their organisation’s IT platform, with a further 10% stating that cloud is just a passing fad. However, just under half see cloud as a very important part of their IT platform going forward, or a complete game changer for them. Overall, the view of cloud is positive – but with over a quarter of respondents having negative views on cloud, vendors will have to ensure that their messages are accurate and educative in order to persuade these people that cloud is a suitable basis on which to build their future IT platforms.

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What is your overall view of cloud computing?



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Figure 1

Within this section, Figure 2 shows that the USA, DCH and UK lead the way in how positive they are towards the idea of cloud computing. That the USA is at the top of cloud thinking should be no surprise – the main thrust of cloud computing is coming through from US-headquartered vendors and much of the messaging is around large cloud-enabled datacentres such as Google and Amazon, as well as offerings from the likes of Oracle, IBM, Microsoft and so on.

At the bottom of the table come the Middle East, Italy and Iberia. From the NGD research, this continues the theme. Quocirca’s belief is that the Middle East is still of a mind-set where, with cheap energy available, the need for a more optimised and utilised datacentre is not seen as a high priority, and that any resource issues can be met by

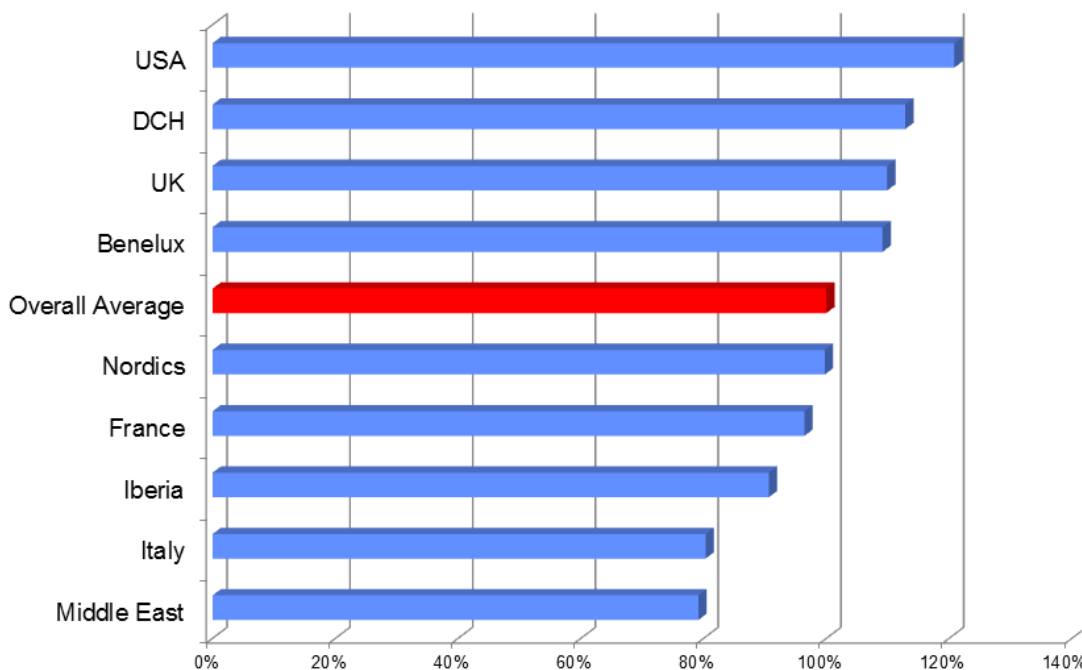


just throwing more hardware at the problem. However, as energy prices continue to be variable, Quocirca believes that the Middle East may begin to find itself in a poor position – and that such a blinkered view could force it into problems if the need for a more competitive platform does become apparent down the line.

For Italy and Iberia, the problem is more acute. Such a viewpoint for countries that have been hard hit by the economic climate does not show any emphasis being put on how the regions can try and invest in IT to help them out of their current problems.

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What is your overall view of cloud computing?



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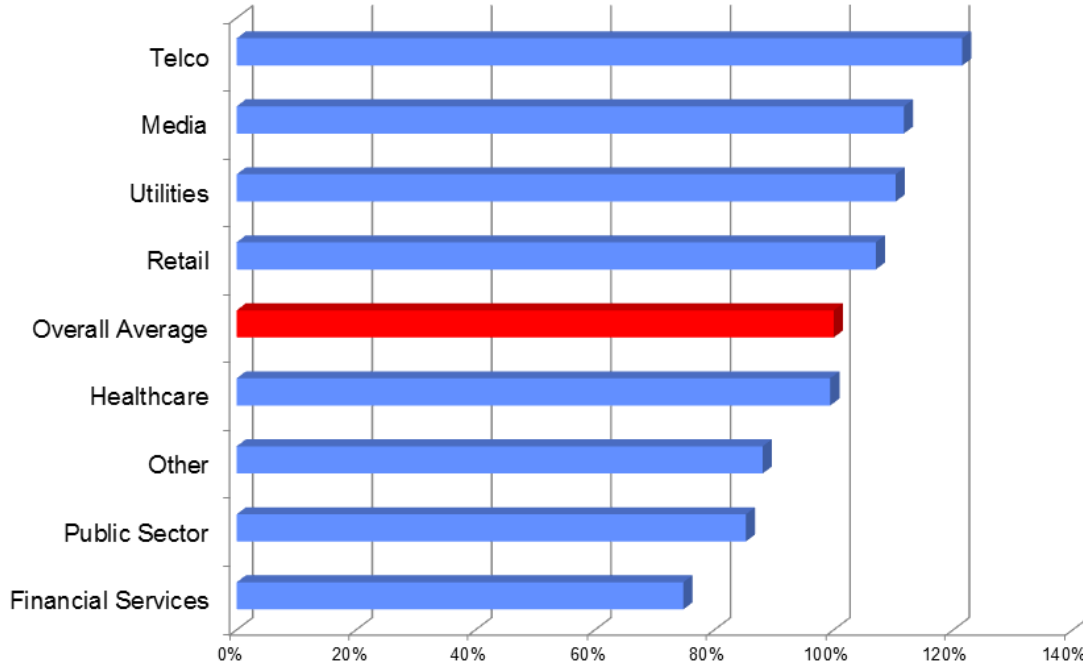
Figure 2

At a vertical level, Figure 3 shows that telco, media and utilities top the table. For telcos and utilities, Quocirca does not find this surprising. Many telco companies will be positioning themselves as cloud players, and will need to put in place a suitable platform for this. Many utilities companies have very large computer systems, and there has long been a need to optimise these to gain benefits through consolidation and through higher utilisation rates on IT assets.

The surprise is – to a certain extent – media. Throughout the NGD research, media tended to perform below average and, overall, it was in the bottom three of the index. However, it seems that the media industry does see that cloud is both a threat and an opportunity, and has been looking carefully into the possibilities it can offer.



What is your overall view of cloud computing?



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Figure 3

At the bottom come financial services, public sector and healthcare. Although financial services did well on the NGD index (coming in just behind telco and utilities), this research shows that its appetite for cloud computing is very low.

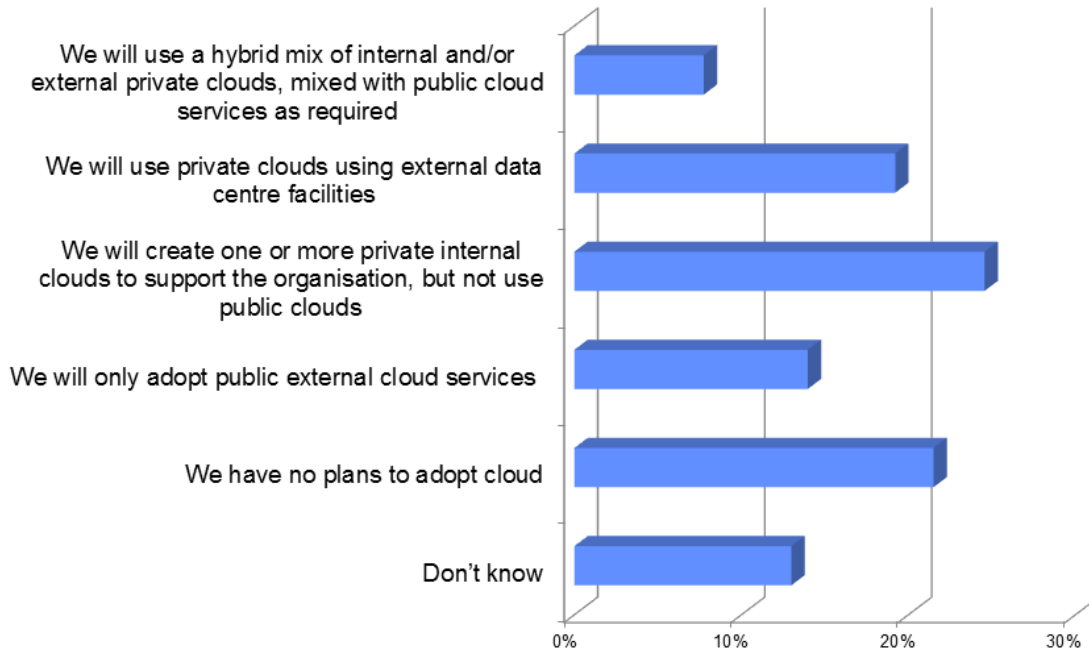
For the public sector, fears over cloud security are uppermost in its mind. The compromising of citizen data is something that gets reported widely – and often very harshly. This has led to a mind-set that the only safe data is data that is under direct control, and there is a strong perception that the adoption of cloud computing would push data out of that control. Again, for vendors, this should point to a mismatch in understanding, and that further education is required in order to show how data can be managed in multiple different ways, such as anonymisation, using hash keys between different data sets or secure data vaults to minimise any security risks.



The next question asked was “If you are going to adopt cloud, what comment best matches your plans?”

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If you are going to adopt cloud, what comment best matches your plans?



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Figure 4

Figure 4 shows how over 20% state that they have no plans to adopt cloud computing, with a further 13% stating that they do not know how, or whether, they will adopt cloud computing. Nearly 25% are looking at using private cloud only, based on private datacentres, with a further 20% looking at using private clouds in co-location or other external datacentre facilities. 14% are looking at using public cloud services only, with the remaining 8% looking to a hybrid mix of private and public clouds.

From Quocirca’s point of view, these results demonstrate the confusion that there is behind the end-users’ perceptions around cloud. The vast majority of organisations are already using some form of cloud computing, whether this be for the provision of help within a productivity suite such as Microsoft Office, use of anti-spam engines, many security offerings or even updates to anti-virus signatures. Indeed, there will be very few organisations where employees aren’t using direct cloud-based services such as Google or Bing Maps for anything from planning business travel to plotting customer activity, and many organisations will have been using services such as Concur or KDS for cloud-based expense management for many years.

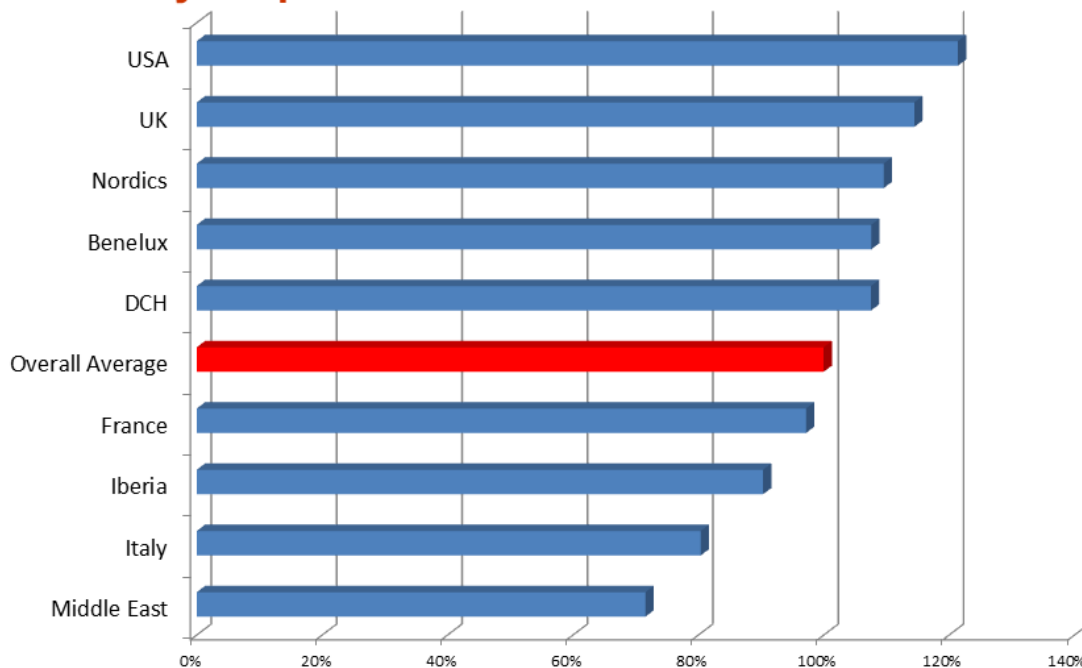
Quocirca’s view is that the future is towards a hybrid cloud solution. Over time, organisations will be looking to the public cloud to offer more functions that they can consume as they need. The perception that ownership of a function is a necessity is costly and problematic – for example, if mapping functions are to be used on an ad-hoc basis, owning a mapping application will require a base platform to be provided and maintained, while the application itself needs licencing, managing and, more expensively, continuously updating. Meanwhile, the likes of Google and Microsoft can offer these functions at no cost for general ad-hoc usage – fully managed and updated.



Only those requiring advanced functionality such as overlays of civic utilities (e.g. water, electricity, gas) or specific needs such as multi-level analysis of linked geographic datasets need to consider packages such as PBBI MapInfo. The same approach will increasingly apply to many other functions, and the key will be to create an overall platform where the organisation can choose the right time and the right place for functions to be carried out. Some of these functions may still require a one-application-per-physical-server approach, some may require that the functions and the application are maintained in a highly secure manner. Others may be able to be split so that only anonymised data is sent to a public cloud environment for actions to be carried out on the data, while other data may be stored in the cloud itself.

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If you are going to adopt cloud, what comment best matches your plans?



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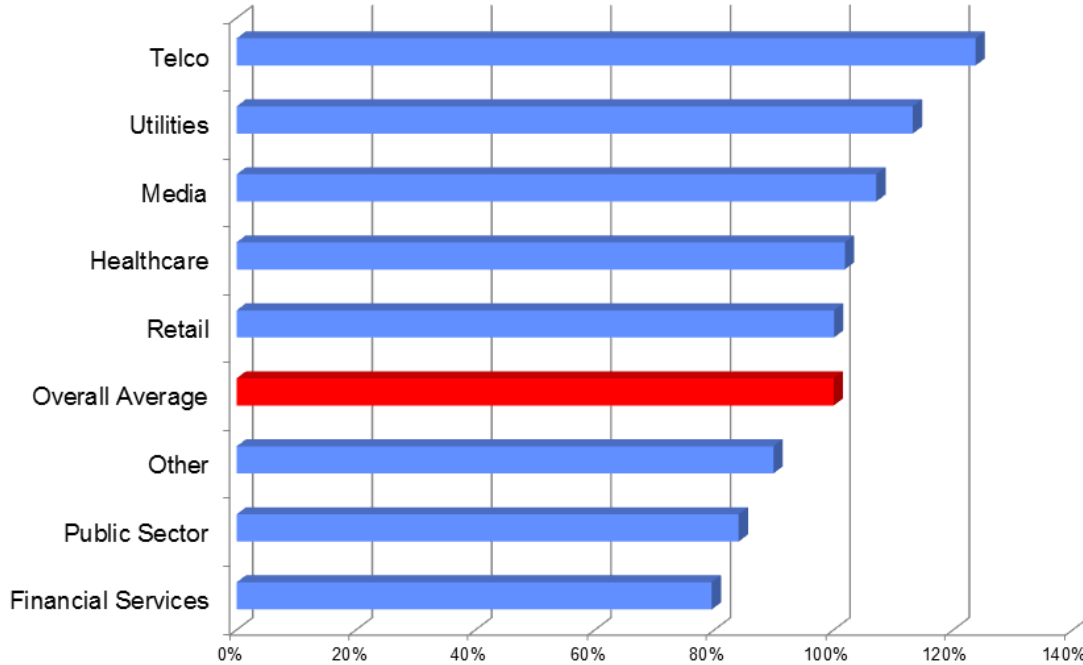
Figure 5

Figure 5 shows that, on a regional basis, the USA tops the perception table again. The UK and the Nordics make up the top three, with the Middle East, Italy and Iberia being the bottom three again.

With the Middle East, Italy and Iberia having such negative perceptions around cloud in the first place, it is not surprising to see them at the bottom of this table. However, DCH, having been second in the overall perception table, now drops to fifth – just above average. Indeed, the DCH region’s appetite for hybrid cloud was the third lowest, only being higher than the Middle East and Italy.



If you are going to adopt cloud, what comment best matches your plans?



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Figure 6

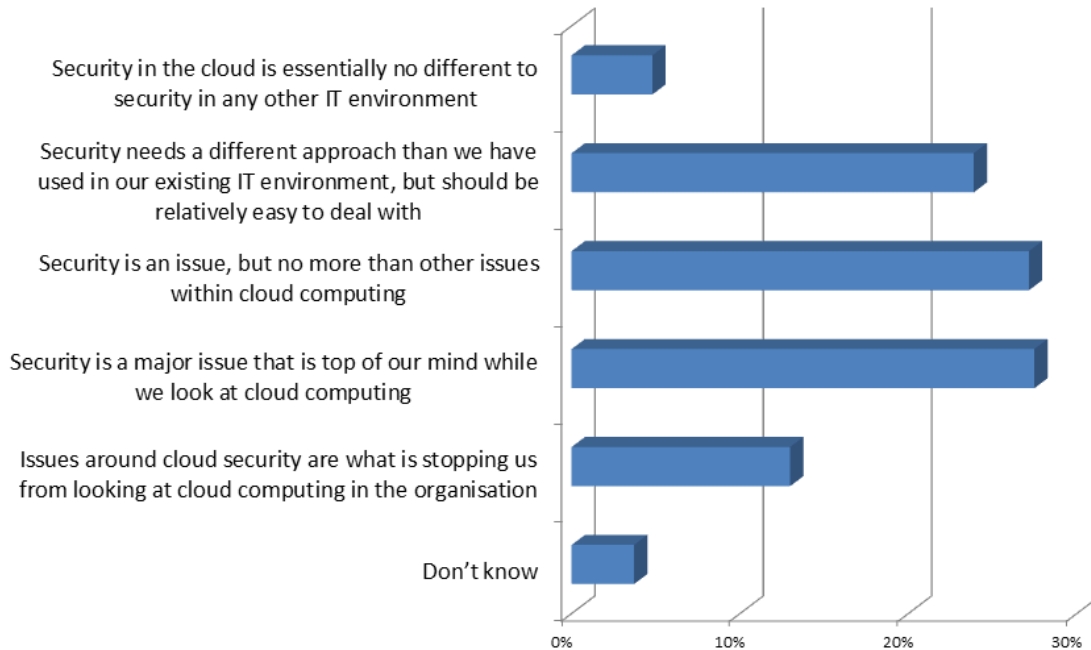
At a vertical level, Figure 6 shows telco, utilities and media making up the top three again. At the bottom, financial services and public sector make up the bottom two, with retail also faring relatively badly. For retail, cloud should make sense – upping asset utilisation rates will not only save money on the assets themselves, but also on energy, management and licensing costs. For a vertical where many are working against micro-margins, such savings can boost profitability markedly. Such low perceptions around cloud do not bode well for many in the retail sector.



The next question was “What are your views on cloud security?”

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What are your views on cloud security?



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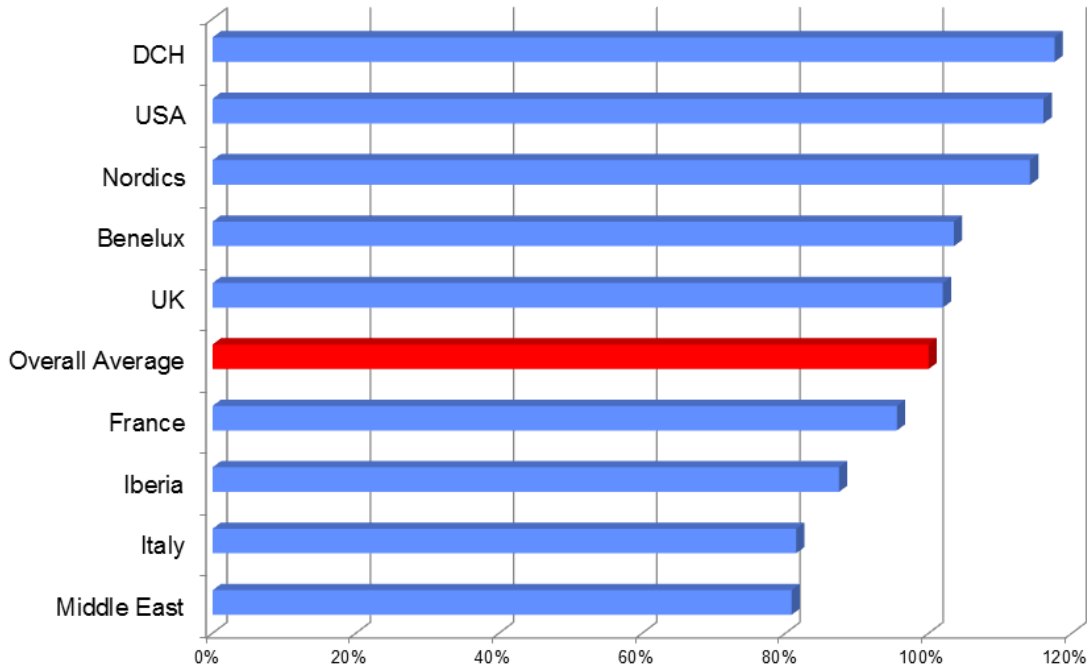
Figure 7

13% of respondents stated that cloud security is a current show stopper for them. A further 27% stated that it was a major issue for them when looking at cloud. Just over 50% felt that although it was an issue it could be dealt with relatively easily, with 5% seeing cloud security as being no different to any other IT security issue.

Quocirca’s view is that information security has to be all-embracing. It is the security of the intellectual property and the underlying data that is paramount, and, by taking an approach where the focus is on this, the actual architecture underlying the information and data becomes immaterial. Such an approach, one that Quocirca terms a “Compliance Oriented Architecture (COA)” means that information is secure no matter where it is – whether it resides on a PC, a laptop, a slate, a smartphone; whether it is in a private datacentre, a co-locational facility or in the cloud. As such, Quocirca believes that cloud security should be approached as any other IT security issue. However, as the majority of organisations still tend to focus on the security of items such as physical assets, on application-based security and so on rather than informational security, a change of approach overall is what is required.



What are your views on cloud security?



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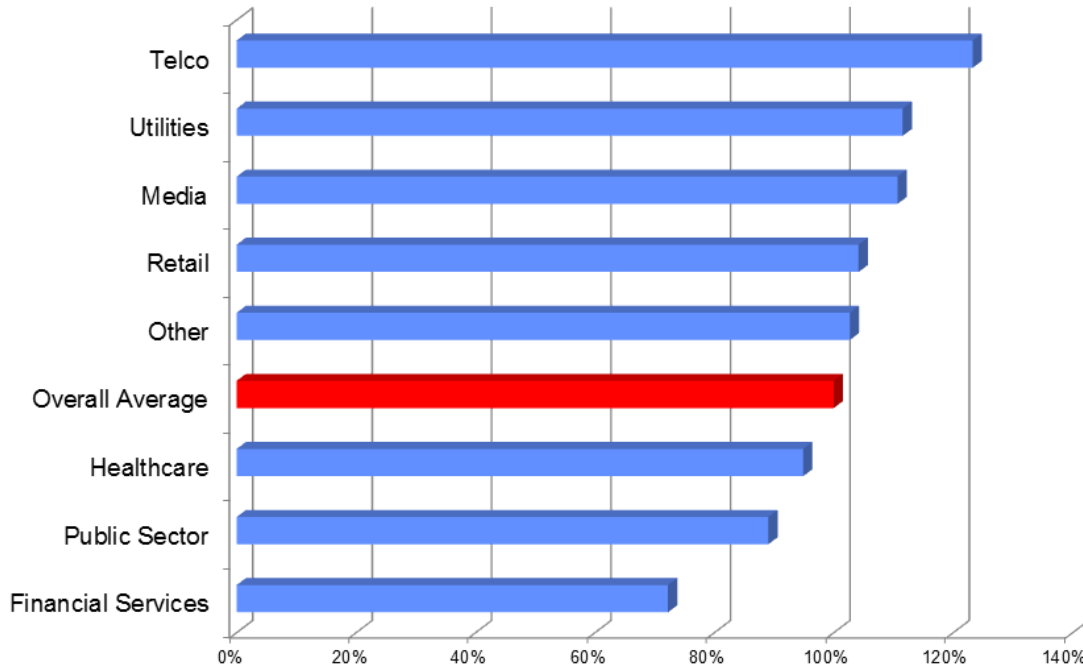
Figure 8

At a regional level, DCH jumps back up the table to top spot, with the USA and Nordics following. The Middle East, Italy and Iberia take the bottom three places again (Figure 8). Germany, in particular, has very strong information security laws, and it is likely that this is reflected here, in that organisations already have to have in place strong capabilities about managing their data security – no matter where the data itself resides.

The UK falls back down to just above average here and, although outperforming some of its European competitors such as Italy, Iberia and particularly France, it should be worried about how it is positioned against the likes of Benelux, the Nordics and, particularly, DCH.



What are your views on cloud security?



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Figure 9

Figure 9 shows the vertical rankings for perceptions around cloud security. Telco, utilities and media make up the top three again, with financial services, public sector and healthcare at the bottom.

The top and bottom verticals are some way out from the rest – telco is nearly 12 percentage points ahead of utilities, whereas financial services is over 17 percentage points behind public sector. Both may be worrying. For example, is it a case of telco having sufficient faith in its existing information security capabilities that makes it so sure of cloud computing? If so, the many documented cases of telcos having data issues may lead to telco cloud offerings that are insecure – and this could lead to a massive backlash from users.

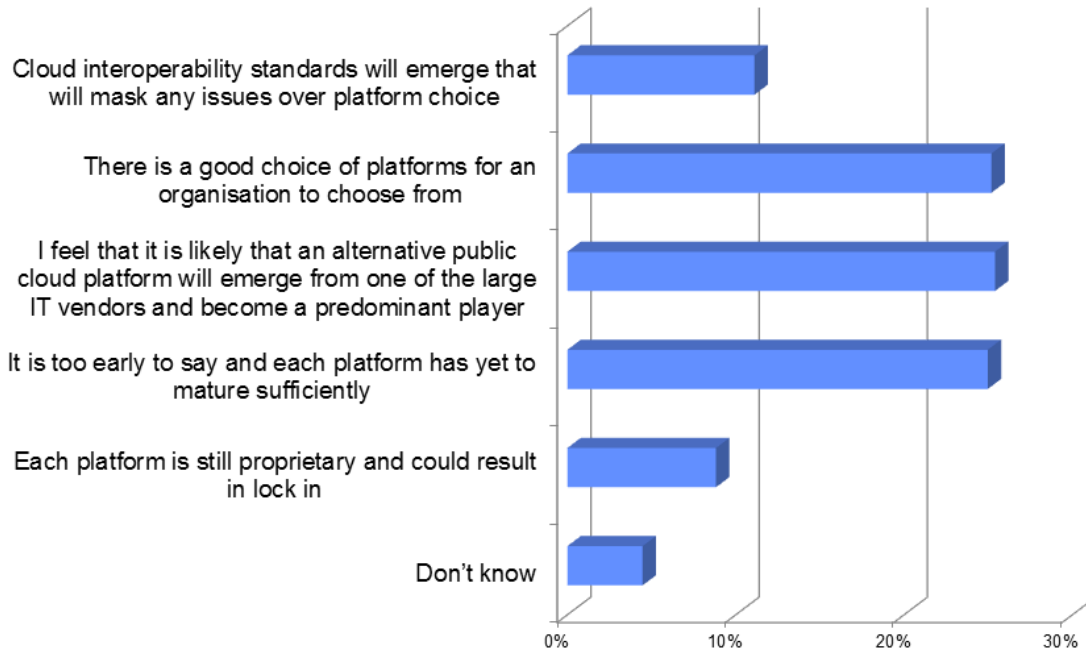
For financial services, such a negative view of cloud security may lead them to miss opportunities for cost cutting and also, more importantly, for flexibility and access to innovation. If information security becomes the be all and end all for this vertical and cuts off the use of cloud computing, then any functionality that is needed will have to be provided internally – with the time-to-capability as well as cost and supportability issues that this will introduce.



The next question asked was “What statement best matches your view on available public cloud platforms? (e.g. Microsoft Azure, Google App Engine, Amazon EC2)”

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What statement best matches your view on available public cloud platforms? (e.g. Microsoft Azure, Google App Engine, Amazon EC2)



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Figure 10

Figure 10 shows that just under 25% of respondents felt that it was still too early to decide and that further maturation of cloud platforms would be required. Just over 25% felt that the early players in the cloud market would be eclipsed by cloud platforms being offered from existing large vendors, such as IBM, HP or Oracle. A similar number embraced the vitality of the market, saying that it meant that there was a good choice of platform to choose from.

Only 9% felt that existing cloud platforms would lead to lock-in for anyone using them, and 11% felt that interoperability standards would emerge that would make the choice of cloud provider immaterial.

Overall, this is a mixed bag of responses. It is obvious that respondents feel that cloud is still in its early days, and with 50% stating that it is either too early for a decision to be made or that it may be worth waiting for the offerings from the large incumbents to come to market and be proven, it is apparent that many organisations will not be taking decisive moves into the cloud arena for some time.

Also, with only one in ten expecting standards to emerge that will mask interoperability issues, the raft of groups working on such standards need to reflect that their work is not creating any clarity in the markets, and that end users remain completely confused over what such standards would offer to them.



What statement best matches your view on available public cloud platforms? (e.g. Microsoft Azure, Google App Engine, Amazon EC2)

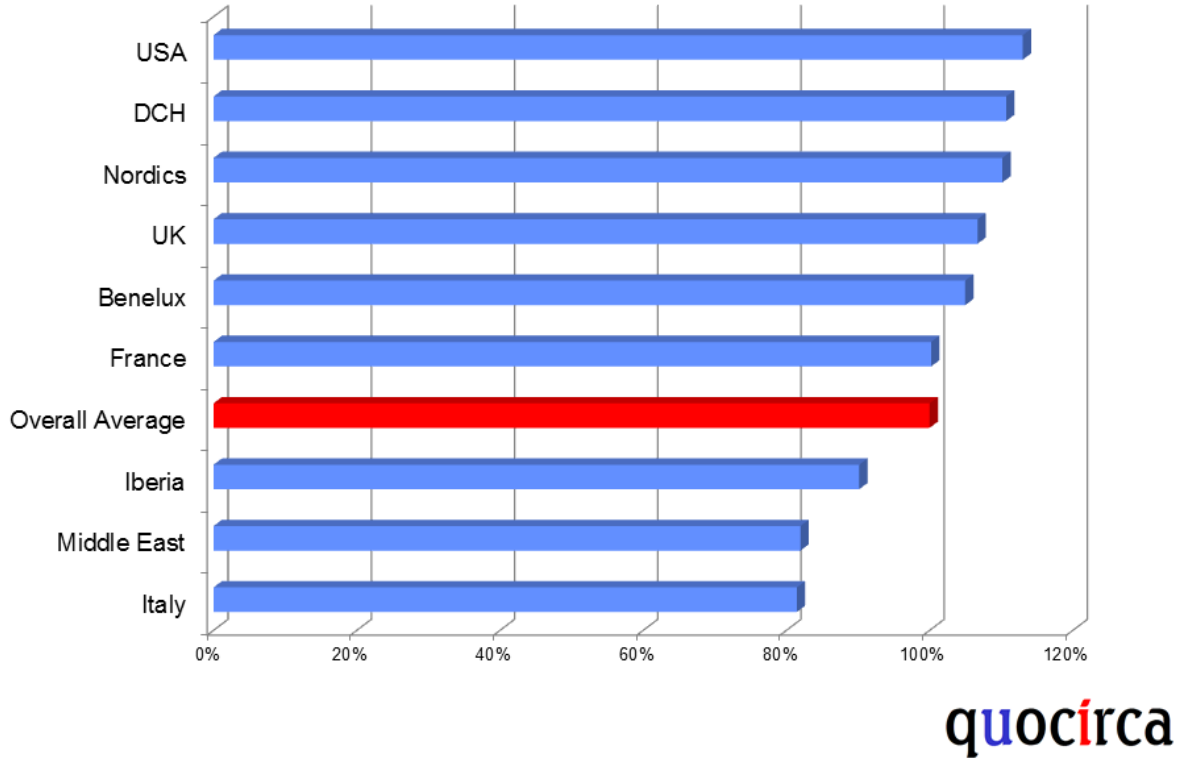


Figure 11

Figure 11 shows the responses at a regional level. The USA, DCH and Nordics top the table again, with Italy, the Middle East and Iberia at the bottom.

By now, the top and bottom three are really not surprising. It is becoming obvious that the USA, DCH and Nordics have an overall positive outlook for cloud computing, whereas the Middle East, Italy and Iberia are confirmed sceptics.



What statement best matches your view on available public cloud platforms? (e.g. Microsoft Azure, Google App Engine, Amazon EC2)

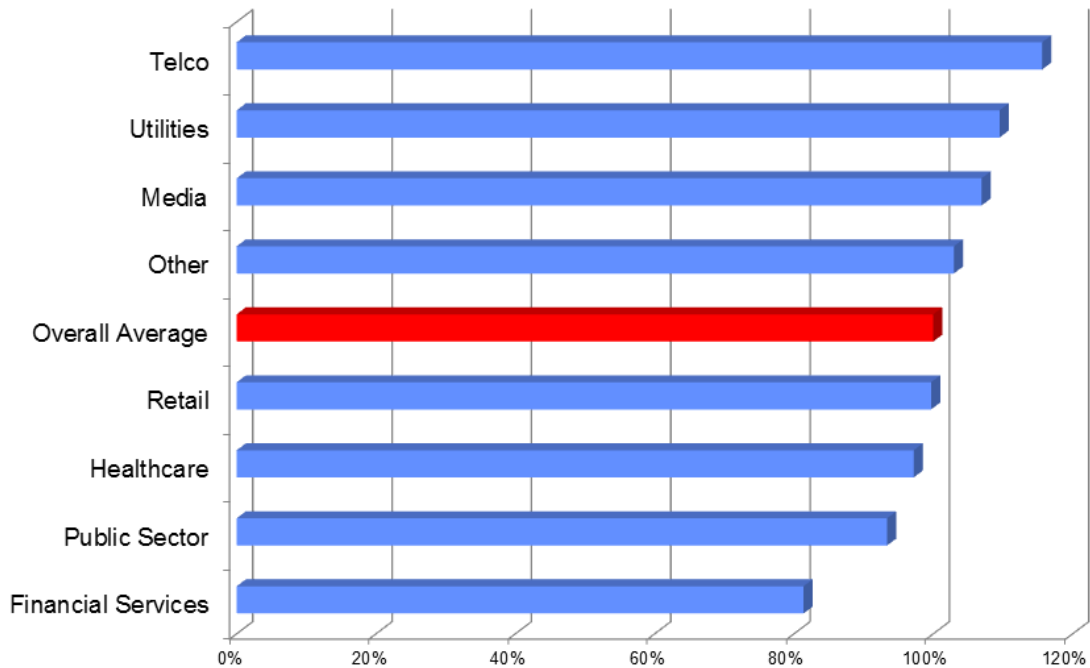


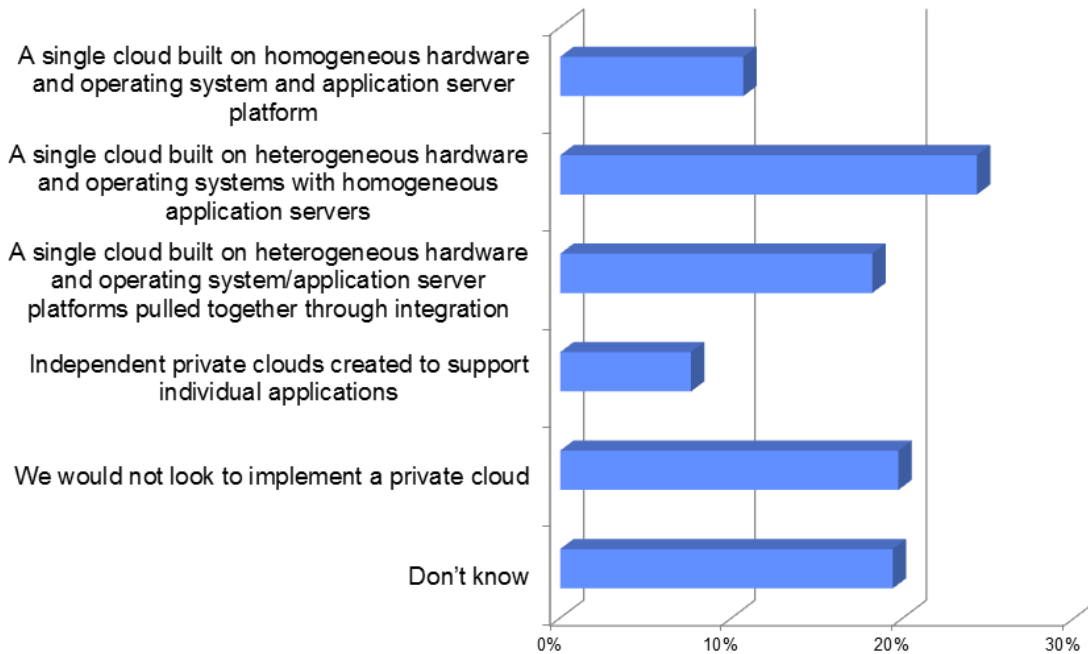
Figure 12

Figure 12 shows a similar story when it comes to the vertical picture – telco, utilities and media top the table with financial services, public sector and healthcare at the bottom.

The next question asked was “What would be your preferred approach to building a private cloud?”

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What would be your preferred approach to building a private cloud?



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Figure 13

Figure 13 shows that close to 20% reiterate their intention not to implement a private cloud. A similar number state that they don't know what their approach would be. Nearly 25% state that it would be a cloud architecture based on abstracting from a heterogeneous hardware base with a common application server, 18% for a heterogeneous hardware approach with linked integration, 10% go for a homogenous approach while the remaining 7% would look to create individual “clouds” to support individual applications.

A similar question was asked at the beginning of the NGD research, uncovering how the respondent's existing datacentres were configured. Overall, there is a solid level of correlation between the two sets of findings, with those already having a heterogeneous hardware platform with a common application server opting to use the same approach when moving to cloud, and so on.



What would be your preferred approach to building a private cloud?

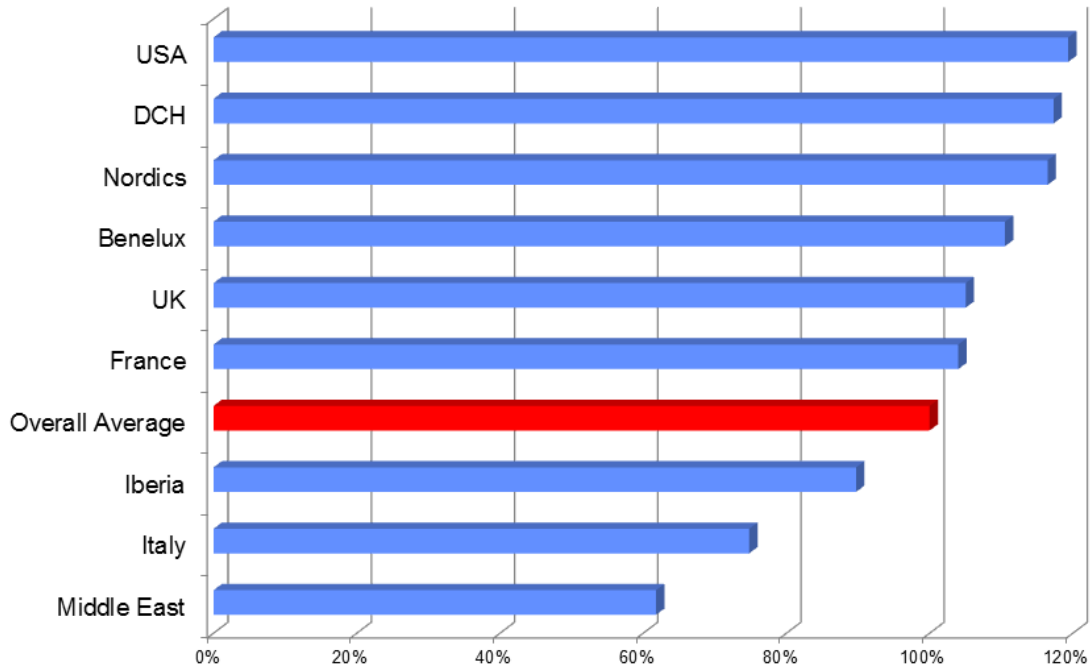


Figure 14

At a regional level, it's the standard story – the USA, DCH and Nordics top the table, with the Middle East, Italy and Iberia tailing it. However, the Middle East is way behind everyone else, pulling the overall average down strongly. Again, it is likely that the Middle East's approach to computing is strongly around throwing more resource at a problem – and that this militates against any well-planned cloud architecture being put in place.



What would be your preferred approach to building a private cloud?

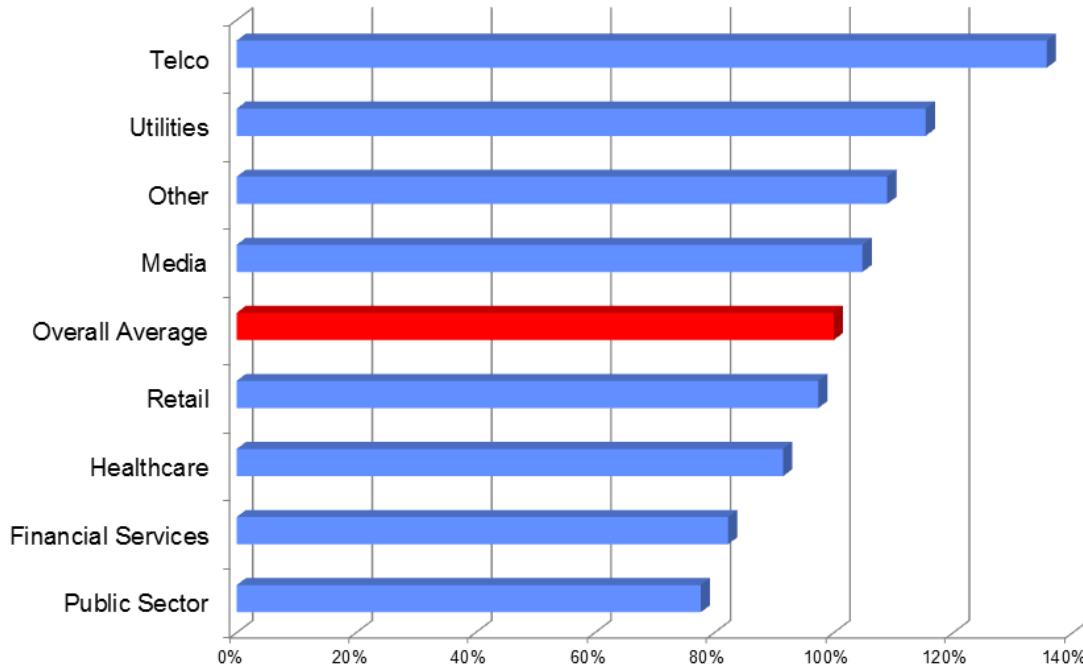


Figure 15

At a vertical level, the same telco, utilities and media make up the top three, with public sector, financial services and healthcare making up the bottom three. Financial services does, at least, outperform the public sector here – marginally.



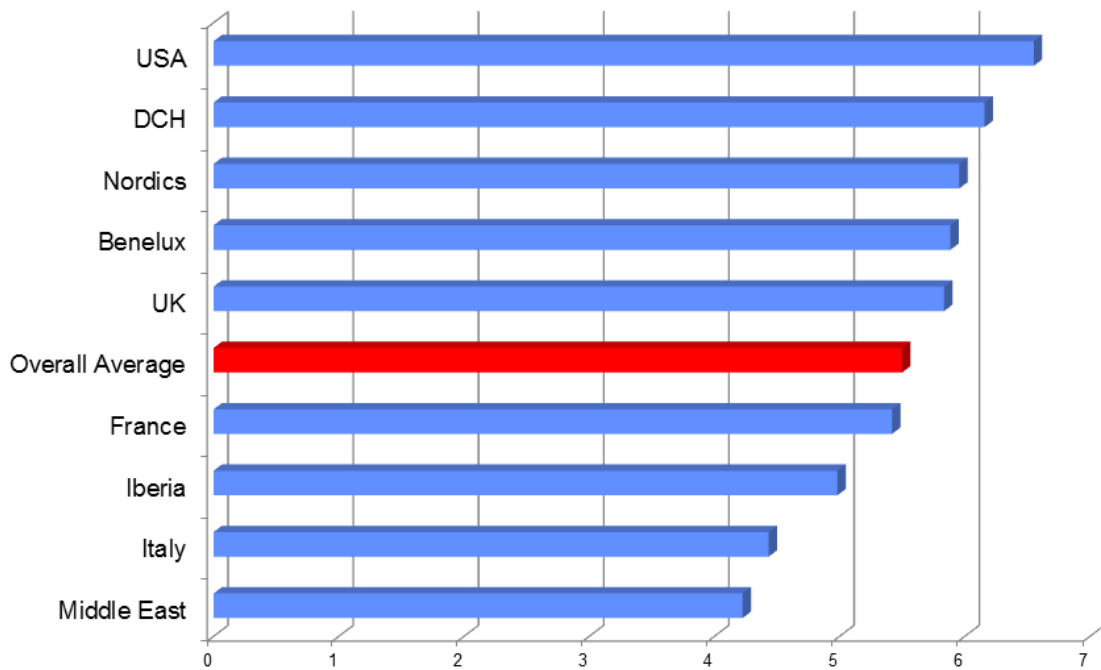
Overall cloud maturity level findings

As previously stated, the findings here can be used to create a basic maturity model for cloud. There are too few questions asked for this to be anything but an overall pointer towards how different regions and verticals currently regard cloud, but Quocirca believes that the findings do provide valuable insights into the issues and opportunities that users and vendors need to address.

At the regional level, Figure 16 shows that the USA, DCH and Nordics are the most well-disposed towards cloud computing – with the USA some way ahead of the others. At the other end of the table, the Middle East and Italy trail by some distance from Iberia, which brings in the last of the bottom three.

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Overall cloud maturity levels

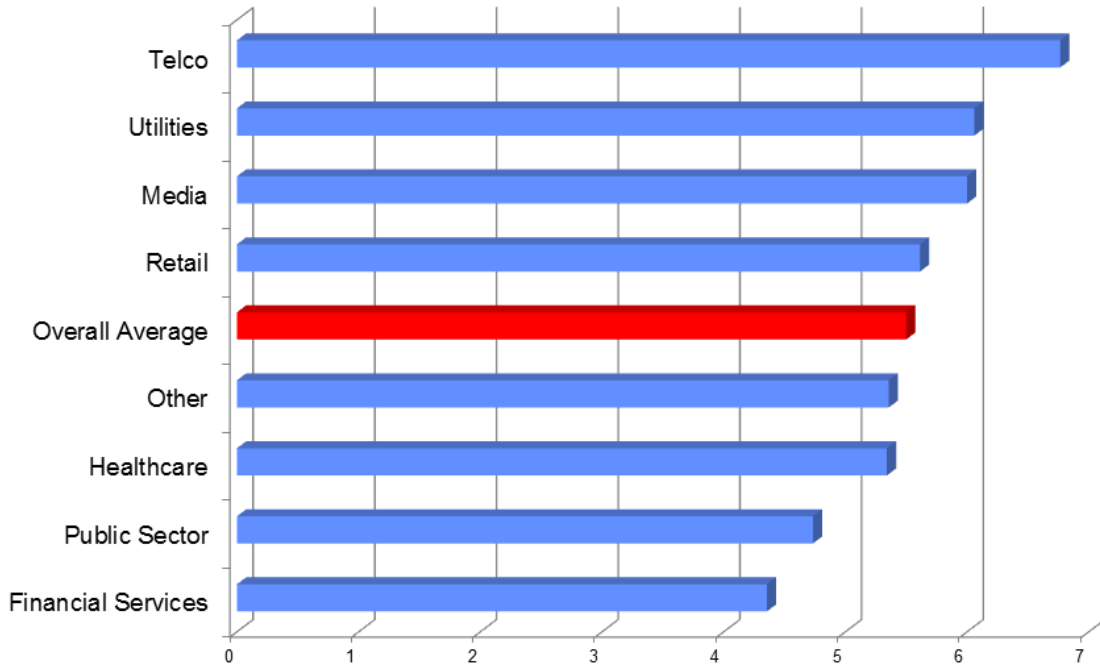


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Figure 16



Overall cloud maturity levels



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Figure 17

At a vertical level, Figure 17 shows that telco is way ahead of the utilities and media, with these three being the verticals most disposed towards the concept of cloud computing. At the bottom, financial services seems to be highly sceptical of cloud, with the public sector and healthcare making up the bottom three.

Conclusions and Recommendations

Cloud computing may or may not be the solution to current and future IT problems. However, what this research shows is that the general view of the large and very large organisations in the market is that it is too early to really be able to judge how and where cloud should be used, and that there is a high degree of confusion as to what cloud computing really is.

This confusion can be laid at the doors of many different constituents – vendors, for both failing to message cloud effectively and for jumping on the bandwagon with “solutions” that are not really cloud at all; the media for overhyping the promise of cloud and for promulgating many of the poor messages that are put out; and also the analyst community for fighting over definitions of cloud, for pigeon-holing offerings into different spaces and for failing to provide simple and effective value propositions as to what cloud computing can really do at a business level.



It seems that one very important group may have been left out in the way that the market has approached cloud computing – the very businesses that could benefit from a cloud approach. If the various constituents on the sell side could ensure that they work together to create a market for cloud first – and only then argue as to who can best provide and manage an effective cloud platform, there is a better chance of cloud emerging as a coherent and effective IT platform for the future.

From the end user's point of view, Quocirca recommends that a business risk profile be drawn up, enabling the various options around IT platforms to be reviewed against the risk that they carry, the cost of each option and the business value that is offered. Only through having this understanding of the business' needs can such wide-ranging and long-term strategic technical decisions be made in an effective manner.

However, what is truly apparent is that the status quo is not an option. Energy costs are, at best, highly variable. Datacentre space is at a premium – and the cost of a new datacentre is prohibitive. High equipment densities, particularly where utilisation rates are low, lead to the need for advanced cooling – which is a costly option. Those who choose to create internal clouds should benefit from much higher equipment utilisation rates, so enabling excess equipment to be retired, saving energy, space, maintenance costs, licensing costs and so on to create a far more effective and flexible platform.

Those who choose to put in place a hybrid environment where public cloud services are included will gain from further flexibility, being able to choose where functions are facilitated (within their own private environment, within a co-locational facility or out in the public cloud); will be able to benefit from having rapid access to new functions that can help in their business; and will be able to move a lot of unpredictable costs (such as maintenance) into the hands of an external.

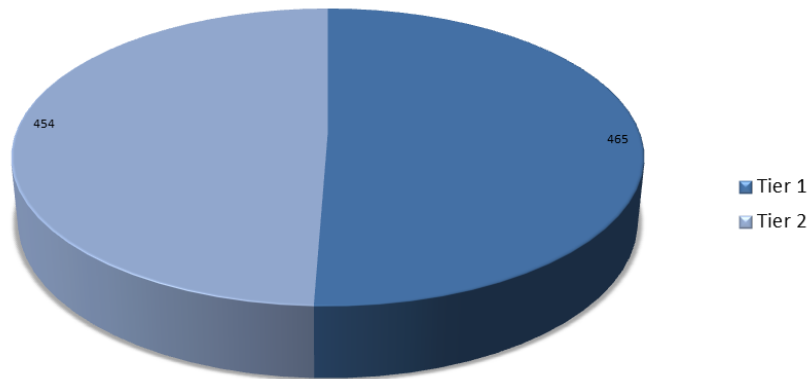
In Quocirca's view, cloud is not a universal panacea, but it should be an important part of any organisation's future IT plans. Understanding the basic principles behind cloud along with the risk profile of the business enables the first steps to be taken in planning how and when cloud should be used to provide the IT platform the business will require in the future. Failure to consider cloud as part of the mix may have a strong negative impact on the capability of the business to operate successfully within its market.



Research profiles

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Organisation size

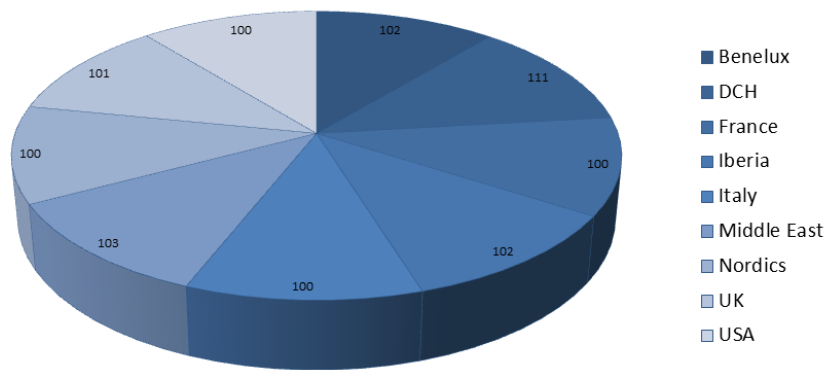


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By Country

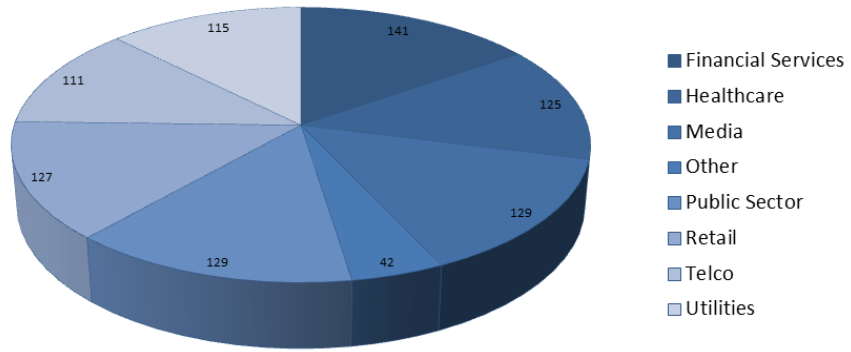


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By Vertical



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About Oracle

Oracle provides the world's most complete, open, and integrated business software and hardware systems, with more than 370,000 customers—including 100 of the Fortune 100—representing a variety of sizes and industries in more than 145 countries around the globe. Oracle's product strategy provides flexibility and choice to our customers across their IT infrastructure. Now, with Sun server, storage, operating system, and virtualization technology, Oracle is the only vendor able to offer a complete technology stack in which every layer is integrated to work together as a single system. In addition, Oracle's open architecture and multiple operating system options gives our customers unmatched benefits from industry-leading products, including excellent system availability, scalability, energy efficiency, powerful performance, and low total cost of ownership.

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REPORT NOTE:

This report has been written independently by Quocirca Ltd to provide an overview of the issues facing organisations seeking to maximise the effectiveness of today's dynamic workforce.

The report draws on Quocirca's extensive knowledge of the technology and business arenas, and provides advice on the approach that organisations should take to create a more effective and efficient environment for future growth.

Quocirca would like to thank all the individuals who provided their valuable time in helping in the creation of this report.

About Quocirca

Quocirca is a primary research and analysis company specialising in the business impact of information technology and communications (ITC). With world-wide, native language reach, Quocirca provides in-depth insights into the views of buyers and influencers in large, mid-sized and small organisations. Its analyst team is made up of real-world practitioners with first-hand experience of ITC delivery who continuously research and track the industry and its real usage in the markets.

Through researching perceptions, Quocirca uncovers the real hurdles to technology adoption – the personal and political aspects of an organisation's environment and the pressures of the need for demonstrable business value in any implementation. This capability to uncover and report back on the end-user perceptions in the market enables Quocirca to provide advice on the realities of technology adoption, not the promises.

Quocirca research is always pragmatic, business orientated and conducted in the context of the bigger picture. ITC has the ability to transform businesses and the processes that drive them, but often fails to do so. Quocirca's mission is to help organisations improve their success rate in process enablement through better levels of understanding and the adoption of the correct technologies at the correct time.

Quocirca has a pro-active primary research programme, regularly surveying users, purchasers and resellers of ITC products and services on emerging, evolving and maturing technologies. Over time, Quocirca has built a picture of long term investment trends, providing invaluable information for the whole of the ITC community.

Quocirca works with global and local providers of ITC products and services to help them deliver on the promise that ITC holds for business. Quocirca's clients include Oracle, Microsoft, IBM, O2, T-Mobile, HP, Xerox, EMC, Symantec and Cisco, along with other large and medium-sized vendors, service providers and more specialist firms.

Details of Quocirca's work and the services it offers can be found at <http://www.quocirca.com>