



# Procuring and Delivering **OFFICIAL** in the Cloud

Sentinel Whitepaper  
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## 1. Introduction

Cloud is becoming a key feature of the public sector IT estate. For several years, organisations have been exploring the potential of cloud software, platforms and infrastructure as a means of making their IT operations more efficient. For many, progress has been restrained by unfamiliarity and concerns about access to data and security; but the tipping point has been reached where most now regard it as a credible option to support their operations.

The UK Government has had a 'Cloud First' policy since 2013, saying this should be the first option considered by public sector organisations looking to purchase IT products and services. The creation of G-Cloud<sup>1</sup>, available via the Digital Marketplace<sup>2</sup>, has provided momentum to take-up, accounting for sales worth more than £900 million between its launch in 2012 and November 2015. Central government accounted for three-quarters of the spend, but take-up by other parts of the public sector is growing; and as the broadband infrastructure improves and people become more familiar with the economic and operational benefits of cloud services, an increasing number of organisations are turning to cloud.

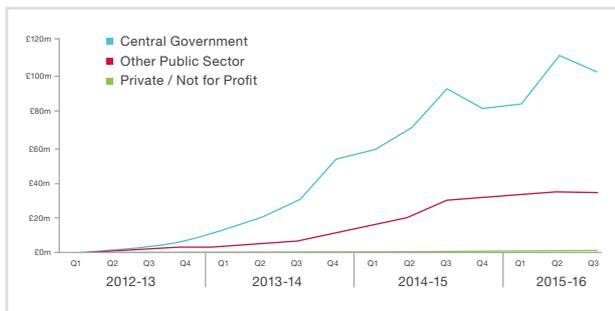


Chart illustrating G-Cloud MI data, splitting G-Cloud spend by broad sector<sup>3</sup>

But they face challenges in doing so, dealing with cultural issues, concerns about security, how to handle a migration from in-house systems and finding the right balance in a hybrid cloud model. This paper outlines factors in the move to cloud, the thinking around these challenges and the real concerns – and advice – of those that have followed this path.

Forty cloud experts and public sector professionals involved in decision making and deployment of cloud in their organisations met for a workshop in December 2015 to discuss the challenge of selecting / procuring and then implementing the storage and management of files with the security classification of OFFICIAL in the cloud.

Of those participating more than four in 10 (42%) were already using cloud, and the remainder were either in the process of buying cloud services (31%) or considering whether to do so (27%) in 2016. 92% of attendees were using, planning to use or had used G-Cloud to procure their cloud solutions.

## 2. The Productivity Imperative

All attendees were aware of the opportunity for improving productivity presented by new technologies and cloud. Indeed, one thing had become crystal clear at the back end of 2015: digital - or the latest technology - is high up the Government's agenda.

Despite overall cuts to public sector budgets in the Government's Spending Review and Autumn Statement 2015<sup>4</sup> £450 million was handed to the Government Digital Service (GDS) - part of £1.8 billion for digital transformation across the public sector.

But this was not a signal to spend on technology for technology's sake or to digitise services because it is fashionable to do so. In his Spending Review announcements, Chancellor George Osborne emphasised the importance of digitising processes and services in order to gain maximum efficiency and value for the public purse. The need to do more with less will be a continuing pressure on all organisations – indeed, Osborne cited the funding for digital as one of the key steps towards 'improving the productivity of the state'.

<sup>1</sup> G-Cloud Framework Guidance: <https://www.digitalmarketplace.service.gov.uk/g-cloud/framework>

<sup>2</sup> GOV.UK Digital Marketplace: <https://www.digitalmarketplace.service.gov.uk/>

<sup>3</sup> Source of data: <https://digitalmarketplace.blog.gov.uk/sales-accreditation-information/>

<sup>4</sup> Spending Review and Autumn Statement 2015: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/479749/52229\\_Blue\\_Book\\_PU1865\\_Web\\_Accessible.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/479749/52229_Blue_Book_PU1865_Web_Accessible.pdf)

### 3. Culture

Doing more with less inevitably means losing a significant number of staff over time. The overall cost of Whitehall administration is being cut by £1.9 billion during the Spending Review period. So public sector organisations will – by necessity – be looking to technology to improve productivity, enable agile, flexible mobile working and payment structures that can accommodate rapidly changing numbers of users whilst providing a base for innovation. Citizen self-service and flexible home working will become the norm and technology infrastructures must be transformed to support this. The conundrum facing local public services, however, is that there was no specific funding in the Spending Review for local digital. Government believes that the sector should collaborate amongst itself to harness the power of digital. In hard times, therefore, local government is now faced with the dilemma of needing to go much further down the digital road to fulfil its role in the long term, but struggling to find the money to maintain existing services – let alone invest heavily in new technology. It will need a shared effort with a pooling of resources to make a difference.

There is an opportunity to do this as part of the devolution of powers and integration of key services such as health and social care. However, it is a complex two-way step, devolving some powers down to the level of a metropolitan authority – Manchester being the first – while pulling together others from the city’s local councils.

It will also be a big step towards the integration of the two strands of care, one of the key elements of the NHS ‘Five Year Forward View’.<sup>5</sup>

Getting the technology right will be crucial to delivering these visions. Providing the technology infrastructure might prove relatively straightforward, but aligning the data flows between the various bodies – especially enabling some sharing between health and social care – is going to be a stiff task.

Participants at the workshop said that problems can arise around the compatibility of datasets, protocols for document sharing and ensuring only the appropriate people have access to records. These issues become more complex when other organisations, such as charities, need to share data to provide services. But if they get it right there will be great rewards.

Inevitably, cloud will have a key role in making this transformation vision a reality.

Cultural issues and the difficulty of behavioural change were key issues for attendees. Just over a quarter were greatly concerned over their ability to “move the organisation” with them as quickly as was required, and the need to manage expectations. “The old world versus the new world can be a block to progress,” said one. “How do you cope with people not wanting to be agile?!” said another.

Almost a third advised colleagues to “engage early” with stakeholders during the process and to “make sure that everyone is on board from the start”. Other advice included managing expectations through clarifying roles and responsibilities early on, and endeavouring to “create joint ownership” of the project across the team.

They also identified a need to accurately assess the organisation’s appetite for risk as part of crafting a strategy for moving to the cloud, and recommended that it develops a firm grasp of the factors, and the potential reputational damage, and works these through with potential suppliers.

**Almost a third advised colleagues to “engage early” with stakeholders during the process.**

<sup>5</sup> NHS Five Year Forward View:

<https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>

## 4. Flexibility and Integration

The pressure to squeeze more out of less extends to all parts of the public sector – from central to local government, and while health and police may have been protected from budget cuts to great extent, public demand on their services continues to spiral upwards.

Attendees felt that a big part of achieving this could be in cutting capital expenditure and moving to IT service models that respond flexibly to demand – such as the cloud – whilst ensuring that any waste in spending is minimised, if not eradicated completely.

When it works properly, cloud gives the customer organisation more flexibility in changing direction. Of course, it's not cost-free to begin using new applications for new processes, but Infrastructure and Platform as a Service can provide the foundations for a new approach and require less investment and effort than when it involves the structure of in-house systems.

Hardwiring this flexibility into the technology architecture is essential according to attendees. Indeed, it is so important that many recommended designing a 'lift and shift' exit strategy from the outset, so that changes of supplier or requirements can be undertaken rapidly. This applies not only to transition on exit from the current 'first generation' provider but also to future transition from 'second generation' contracts.

On that note, it is also essential to ensure that legacy data standards are just as easy to accommodate or move in the future.

Whilst no one has a crystal ball, attendees urged consideration of future possibilities – and building enough flexibility into the architecture to ensure that options for future development were left as wide as possible.

Scalability is another consideration. It is very important that a service makes it easier for an organisation to take on more data and increase the scale of its operations without demanding a significant capex spend. This can also work in reverse, making it possible to scale down usage of the

service when needed without leaving it stuck with excess capacity. These factors can be important when changes in policy at central or local level – which are always going to happen – lead to changes in the responsibilities of organisations and the demands on them to store and manage specific datasets.

Integration is a major driver for cloud thinking at present, especially in the areas of devolution and health and social care. The public sector as a whole can improve its efficiency by ensuring that organisations better align the services they provide to individuals, eliminating the gaps and preventing any duplication. The key to this is in pulling the data that supports the processes out of organisational silos and onto a neutral virtual space, where the appropriate people have access to view and update the data around an individual.

Attendees were concerned about the need – and their organisation's ability – to react quickly to developments in the IT industry, taking up appropriate new products and services as they become available.

Indeed, the traditional model of long term licensing for software – with associated installation and licensing costs – can stand in the way of this. But new shorter term contracts and the increased flexibility of cloud services will make the sector better able to react and gain real benefit from new platforms and applications.

Attendees were agreed on the importance of ensuring that both flexibility for the future and the capability for rapid integration should be hardwired into thinking at the beginning. Said one: "Make sure that service integration is well thought through and documented in the ops manual." Another advised focusing on the underpinning architecture: "Aim for 'lift and shift' so that you have the flexibility to move if necessary."

## 5. Transformation and Savings

The opportunity for cloud to not only dramatically reduce the costs of a service but also facilitate a wider transformation of the organisation's processes was seen by all in the workshop. Indeed, the transition from in-house to cloud systems was generally seen as a way to ease in use of new applications and to establish new ways of working. Cloud will also give organisations more flexibility once they have made the move, as contracts are flexible in the 'pay as you go' cloud model – which both supports seasonality in service patterns and enables the organisation to grow or shrink in response to demand.

The public sector benefits from cloud are similar to those of the private sector, with the focus on operational efficiencies and large scale change. A survey by KPMG<sup>6</sup> published in December 2014 shows that technology leaders see clear benefits in the potential for enabling a more flexible workforce, improving alignment and interaction with customers, suppliers and partners, and making better use of data for business decisions. There is also great benefit to be had from the ability to set service level agreements that provide compensation for any downtime or other problems. All of these can be amplified and all apply to the public sector.

Estimates of direct savings are made difficult by the fact that such transformations generally involve transition to a different financial model – from the capex on legacy systems to 'pay as you go' opex on cloud – so there is no direct 'apples to apples' comparison to be had. In addition, transformation often opens new horizons for service delivery and improvement.

However, the Crown Commercial Service has estimated that savings of 20% are available from using G-Cloud to buy best of breed commodity components compared with more traditional, legacy based, single vendor agreements.<sup>7</sup>

Using CCS-predicted savings as a base, then focusing on outcomes and the impact of new operational efficiencies derived from cloud – such as reduced in-house labour costs and the support of mobile working – can provide a compelling business case for change.

Due to all the above considerations, cost vs savings was a universal issue for our workshop participants. Getting a full view of current baseline costs right was seen as essential – indeed a prerequisite to evaluating future savings – as was the ability to identify the relative 'value add' of any solutions put forward. "Price is not always the best factor to make a decision on!" was one comment at the workshop.

Identifying desired and potential benefits – then tracking them from the outset – is advisable and key to keeping control of costs.

**Savings of 20% are available from using G-Cloud to buy best of breed commodity components compared with more traditional, legacy based, single vendor agreements.<sup>7</sup>**

<sup>6</sup> Enabling Business in the Cloud:  
<http://www.kpmginfo.com/EnablingBusinessInTheCloud/downloads/2014%20KPMG%20Cloud%20Survey%20Report%20-%20Final%2012-10-14.pdf>

<sup>7</sup> Crown Commercial Service Annual Report and Accounts 2014-15:  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/446765/ccs-annual-report-2014-2015-HC207-web.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/446765/ccs-annual-report-2014-2015-HC207-web.pdf)

## 6. Skills and Capabilities

The knowledge and skillsets of in-house teams was a topic of hot debate. As one data owner said: “I am not sure I know all the right questions to ask suppliers during migration.”

The majority were concerned about potential skills gaps – or losing key skill sets – during the transformation: “It is a fast moving landscape, how do we keep up?”

All agreed that core skills and capabilities should be nurtured in-house. Indeed this was considered essential by many in order to ensure that technical and data ownership remained solidly within the organisation. In a similar vein, a full understanding of what parts of the service – cloud or hybrid – should be provided in house and what should be outsourced can only be gained if those skill sets exist internally.

But this is not always easy. The National Audit Office’s (NAO) latest survey of central government digital leaders, ‘The digital skills gap in government’<sup>8</sup> suggests that Whitehall’s limited clout in the jobs market continues to be a factor inhibiting digital transformation.

It is true, however, that not every public sector organisation needs every skill set in-house. One important consideration in austere times is the potential to let the cloud provider take responsibility for essential, but commodity, elements of IT management; i.e. updating software, providing disaster recovery plans, ensuring secure environments, etc.

The provider should have high level expertise on hand in these fields, so it can be channelled as and when needed – thus obviating the need for an expensive, in-house resource in these commodity areas.

With the right Service Level Agreements and downtime compensation plans in place, the in-house team is free to then focus on their specialist public service, and to identify and expand essential skill sets required to deliver the transformation whilst ensuring that technical and data ownership is retained.

With limited funds available for training and the pressure to cut down contractor spend, the ability to make more use of commodity services and skills should be key to the business case.

## 7. Security

Without doubt, and understandably, the majority of workshop attendees expressed concerns over security in the cloud. Given the increased scrutiny of the public sector’s performance in handling and protecting sensitive data, it is a big factor in an organisation’s credibility, and if data is compromised it could seriously disrupt its business. Moving to the cloud involves passing the day-to-day oversight and responsibility for the provision of security mechanisms to a third party, and this requires a certain leap of faith.

But in reality it often provides a higher level of security than can be developed in-house. Cloud providers bring expertise in the field as part of the service, and in catering for numerous customers they can do so more cost-efficiently and effectively. This can provide a safe environment for data up to a high security classification, and make an important contribution to an organisation’s information security strategy.

The crucial factor is to ensure that the necessary security accreditations are in place. For most public sector business this means that the cloud provider has to show it can handle information labelled OFFICIAL (equivalent to the previous IL2 and IL3 classifications), for which there could be damaging consequences if it is lost, stolen or published.

But most organisations also need to store and handle some information labelled OFFICIALSENSITIVE, for which the consequences of being compromised would be more far reaching, and which require procedural and personnel measures to reinforce access on a ‘need to know’ basis.

**One important consideration in austere times is the potential to let the cloud provider take responsibility for essential, but commodity, elements of IT management.**

There are a number of steps to take, outlined in the Government's Summary of Cloud Security Principles<sup>9</sup>, in providing the appropriate levels of security. These include, among others:

providing network protection and encryption to protect personal data in transit across networks;

having a security governance framework in place;

making staff subject to security screening and education for their roles;

designing services to identify and mitigate threats against their security;

protecting interfaces from attacks;

providing users with audit records.

These can be supported by measures such as: ensuring that any changes to a system are tested and authorised, so that there are no unexpected alterations in security properties, protective monitoring of any potential attacks and unauthorised activity, and plans to respond to any incidents and recover a secure service.

It is also important to ensure that a cloud provider has the accreditations for specific services, such as Infrastructure as a Service (IaaS) and Software as a Service (SaaS).

This means that when using services such as storage, back-up, messaging or desktop hosting, all of the relevant measures are in place to provide the appropriate levels of security.

Providers with accreditation for groups of these services, rather than focusing on a speciality, can provide the scope to combine them within a package and make it easier to align different IT processes on a cloud platform while maintaining the necessary security.

## 8. Location

“Where is my data?” is a common worry, and not without reason. In recent months there have been significant changes in the rules for storing and managing data. Firstly, the European Court of Justice ruled that the Safe Harbor agreement, by which EU organisations could allow their data to be stored in US centres that met European standards, was invalid.

This combines with recent stories of the US security services’ intrusions into online data sources, which have raised fears that personal information is not safe from prying eyes unless kept closer to home. This means it is no longer a valid option to turn to multinational cloud service providers using US data centres for EU customers.

Secondly, the European Parliament has taken the conclusive steps towards passing a new Data Protection Regulation<sup>10</sup>, likely to come into force in early 2018, imposing a number of strict requirements on public and private sector organisations. These include providing people with better information on what happens to their personal data when it is shared, a right to erase personal data, a right to object to its processing, and safeguards for its archiving and use in research. In addition, multinationals will be subject to one national regulator, based on where they have their main establishment.

This is likely to focus minds on keeping data closer to home, and attaching more importance to the use of domestic data centres. Cloud providers that can show all the data remains in the UK will provide the advantages of making it easier to visit their facilities, being subject to the same national regulator, and ensuring that an organisation is fully compliant with the legal framework.

## 9. Additional Factors

While culture, security, privacy and data assurance issues are the main sources of concern around moving to the cloud, there are others that demand attention. Some involve a perception of risk, but in each case a high quality service provider will anticipate these and take the appropriate action. It is always worth seeking assurances that the risk will be mitigated.

### 9.1 Service level agreements

One is around downtime, and the sense that controlling the availability of a service is beyond the customer’s control. It is where the tiered classification system from the Uptime Institute – a US based but international data centre authority – provides the level of assurance deriving from the design of the facilities.

Classification depends on the provision of one or multiple paths for power and cooling distribution, the provision of redundant components, whether fault tolerance is built in with all components dual powered. Each of its four tiers provides at least 99.6% availability, hitting 99.995% for tier four, and the classification can provide the necessary assurance for an organisation that can afford no significant downtime from a service.

Of course this can be supported by stringent service level agreements that provide compensation in the event of downtime beyond the most minimal level.

### 9.2 Hybrid cloud

“Don’t forget that it is not ‘all or nothing’ – hybrid solutions can help minimise risks,” advised one workshop participant. The move from on-premise to the cloud can appear daunting. In such cases a hybrid transition path can both reassure the business that the data is being carefully transitioned whilst delivering quick win savings.

### 9.3 Secure connection to PSN and SWAN

Connection and service provision certificates for the Public Service Network<sup>11</sup> are also important – as with the Scottish Wide Area Network<sup>12</sup>. They show that a provider is compliant with the baseline arrangements for the PSN or SWAN, enabling customers to access the network securely and, if desired, build a ‘walled garden’ environment that places limits on users’ access to the Internet and applications. It indicates that there are robust connections to networks widely used in the public sector, which can provide further assurance around minimising downtime to a negligible level.

This is also part of ensuring that everyone with the right to access data held as part of the services has the appropriate connectivity from cable and wireless networks.

### 9.4 Legacy technology and legacy suppliers

The migration process itself raises challenges. All the systems in the cloud have to be interoperable with the organisation’s legacy IT, which is probably easier if it makes extensive use of commodity software and services, but more difficult if it relies heavily on bespoke applications for business processes. There could also be issues around integration with the organisation’s data architecture, and it might demand a repositioning of the IT infrastructure, requiring a significant investment in time and money.

Ensuring that relationships with legacy suppliers were maintained was a key piece of advice from workshop attendees – you will undoubtedly need their help and cooperation to make the migration as smooth as possible.

### 9.5 Local and national policy

Another issue that should be born in mind is that applications running on SaaS will need to conform with the organisation’s policies on Application Programme Interfaces (APIs). As the open data movement gathers pace, and there is growing interest in allowing independent developers to build services on public data, they are increasingly expected to provide access to their own data for reuse. Any data stored in cloud systems has to be accessible through APIs, especially if it is updated in real time.

There also has to be some caution around automatic updates, especially in SaaS, as these could lead to the sudden removal of a key feature or dashboard which the user has found valuable. It is important to have assurances that there will be sufficient notice of these and a full explanation of what they will involve.

In addition, a couple of elements of national policy could have a future influence on cloud arrangements. As yet these are not fully fledged but their evolution must be taken into consideration.

Government as a Platform is still more of an idea than a set of technical requirements, but there is clear progress – notably on identity assurance through the GOV.UK Verify<sup>13</sup> programme, the work on a payments platform, and the impending launch of the GOV.UK Notify<sup>14</sup> service – and there have been indications this will extend to hosting. It could ultimately require that any hosting service will have to be compatible with the platforms developed with GDS in order to facilitate processes.

Also, the Government’s Data Infrastructure Programme is yet to take shape, but as it does so it could have an effect on how a cloud service is integrated with an organisation’s data requirements. There are still in the future but something to be watched.

### 9.6 Due diligence

Apart from the concerns expressed in previous sections, advice was given on using the G-Cloud framework. “G-Cloud still takes effort!” warned one veteran of the process. Two key pieces of advice given were:



Explain your vision to shortlisted suppliers and look for a match in their response – “Don’t rely on service descriptions!”



Look for alignment between your roadmap and that of the supplier – if you are heading in different directions there may well be problems ahead.

<sup>11</sup> Public Services Network (PSN): <https://www.gov.uk/government/groups/public-services-network>

<sup>12</sup> Scottish Wide Area Network (SWAN): <https://www.scottishwan.com>

<sup>13</sup> Introducing GOV.UK Verify: <https://www.gov.uk/government/publications/introducing-govuk-verify/introducinggovuk-verify>

<sup>14</sup> Introducing GOV.UK Notify: <https://governmentasaplatform.blog.gov.uk/2016/01/06/introducingnotify/>

## 10. Workshop Outcomes

Forty cloud experts and public sector professionals involved in decision making and deployment of cloud in their organisations met in December 2015 to discuss the challenge of selecting / procuring and then implementing OFFICIAL in the cloud.

Participating organisations included: British Museum, Department for Culture Media and Sport (DCMS), Department of Energy and Climate Change, Foreign & Commonwealth Office (FCO), Gangmasters Licensing Authority (GLA), General Pharmaceutical Council, Hertfordshire Community NHS Trust, Human Fertilisation and Embryology Authority, Kent Community Health NHS Trust, National Crime Agency, Portsmouth City Council, Royal Borough of Windsor & Maidenhead, South Cambridgeshire District Council, Steptoe & Johnson, The Energy Saving Trust, The Energy Saving Trust, Treasury Solicitor’s Department (TSol), UK Intellectual Property Office (UK-IPO), and Water Services Regulation Authority (OFWAT).

Much of their comment and advice has been incorporated into the body of this white paper. However, for information for those either embarking on the procurement process or in the midst of deployment the tables below reflect the ‘top three’ concerns and tips / advice from each attendee for both these stages of the journey to cloud.

### 10.1 Supplier Selection Process

#### 10.1.1 Concerns

<b>Security</b>	“Where is my data going to be ‘located?’” “How will you ensure it is protected – will they be as diligent as my team?” “What about overall security?” “What happens when it goes wrong?” “What is the contingency, recovery and resilience plan?”
<b>23%</b>	

<b>Culture</b>	“Old world vs new world can be a block to progress.” “How do you cope with people not wanting to be agile?” “Managing expectations and change management will be key.”
<b>26%</b>	

<b>Risk</b>	<p>“What is my organisation’s appetite for risk?”</p> <p>“What is the potential reputational damage?”</p>
<b>13%</b>	
<b>Legacy Supplier</b>	<p>“How will this impact our legacy supplier relationship?”</p> <p>“Will they support us during the transition?”</p>
<b>8%</b>	
<b>Scope</b>	<p>“Do we fully understand what we want both now and in the future?”</p> <p>“What if requirements change?”</p>
<b>5%</b>	
<b>Connection</b>	<p>“What will the requirement for secure connections be?”</p> <p>“What does this add to the cost?”</p>
<b>5%</b>	
<b>Architecture</b>	<p>“Do we fully understand the required architecture?”</p> <p>“How can we be sure it is fit for the future?”</p>
<b>5%</b>	
<b>Skills</b>	<p>“Do we have a skills gap? What are our training requirements?”</p> <p>“It is a fast moving landscape, how do we keep up?”</p>
<b>5%</b>	

**Other concerns voiced (total = 10%):** Will current applications run in the cloud? How will we keep a lid on costs over time? What governance model is best? Will this bring true transformation value?

## 10.1.2 Tips and advice

<b>Engage early</b>	<p>“Engage early with stakeholders and ensure that everyone is on board from the start.”</p> <p>“Manage expectations, and clarify roles and responsibilities early on.”</p> <p>“Create joint ownership across the team.”</p>
<b>32%</b>	
<b>Exit strategy</b>	<p>“Design your exit strategy at the start!”</p> <p>“Aim for ‘lift and shift’ so that you have the flexibility to move if necessary.”</p>
<b>15%</b>	
<b>Scope</b>	<p>“Get the scope of requirements right before looking for suppliers.”</p> <p>“Don’t forget that it is not ‘all or nothing’ – hybrid solutions can help minimise risks.”</p>
<b>15%</b>	
<b>Due diligence</b>	<p>“G-Cloud still takes effort.” “Explain your vision to the shortlist of suppliers - don’t rely on service descriptions!”</p> <p>“Look for alignment between your roadmap and supplier roadmaps.”</p>
<b>12%</b>	
<b>Delivery</b>	<p>“Have data migration and contingency plans in place for all stages!”</p>
<b>6%</b>	
<b>Architecture</b>	<p>“Focus on your information architecture moving forwards.”</p> <p>“Ensure that legacy data standards are accommodated and that it is easy to move in future.”<sup>6</sup></p>
<b>6%</b>	
<b>Price isn’t king</b>	<p>“Price is not always the best factor to make a decision on.”</p> <p>“Understand your baseline costs and the potential value of solutions on offer.”</p>
<b>6%</b>	

**Other tips and advice proffered by the group (total = 8%):** Focus on good governance structures. Have a clear operating model. Use commodity / commercial off the shelf products where possible.

## 10.2 Post-award – Service take-on

### 10.2.1 Concerns

<b>Security</b>	<b>34%</b>
Where will my data be? “How can you prove that it is secure?”	
<b>Costs / benefits</b>	<b>22%</b>
<p>“Can we control this ongoing?” “How quickly can we realise the benefits?”</p> <p>“What happens when things need to change to meet new requirements? Do the costs go up?”</p>	
<b>Trust</b>	<b>22%</b>
<p>“Can I really trust them to be as diligent as me?”</p> <p>“What if it breaks? How quickly will they fix it?”</p> <p>“What if there is something vital not mentioned that will be key down the line that will push costs up?”</p>	
<b>Skills</b>	<b>11%</b>
<p>“As data owner I am not sure I know all the right questions to ask suppliers during migration.”</p> <p>“What skills do we need to retain in-house?”</p>	
<b>Lock-in</b>	<b>11%</b>
<p>“How can we change provider if the relationship breaks down?”</p> <p>“How do we create an effective exit strategy upfront?”</p>	

## 10.2.2 Tips and advice

<b>Scope</b>	<b>30%</b>
<p>“Know what you want. Know how you want to use it.”</p> <p>“Put effort up front on ensuring you have the scope covered.”</p>	
<b>Assurance</b>	<b>14%</b>
<p>“Have continuous assurance processes in place.”</p>	
<b>Costs</b>	<b>14%</b>
<p>“Ensure it is flexible, PAYG and that the money adds up now and in the future.”</p> <p>“Track the benefits from the start.”</p>	
<b>Governance</b>	<b>14%</b>
<p>“Understand the governance model - multivendor / internal control / supplier management.”</p> <p>“Have a clear governance plan from the outset.”</p>	
<b>Ownership</b>	<b>14%</b>
<p>“You must retain technical and data ownership in house.”</p> <p>“Design your architecture to be ‘lift and shift’ for the future – come what may.”</p>	
<b>SLAs</b>	<b>7%</b>
<p>“Have clear service level agreements in place to ensure that quality of service remains high.”</p>	
<b>Integration</b>	<b>7%</b>
<p>“Make sure that service integration is well thought through and documented in the ops manual.”</p>	

## 10.3 Public Sector Cloud use Today: A Snapshot

Of the public sector organisations participating in the workshop over four in 10 (42%) currently used cloud. The remainder were either in the process of buying cloud services (31%) or considering buying cloud (27%) this year. 92% of attendees were using or had used G-Cloud to procure their cloud solutions.

Stages in the use of cloud and G-Cloud	%
Use cloud, but not procured through G-Cloud	4
Use cloud procured through G-Cloud	38
Currently procuring cloud services through G-Cloud	31
Considering procuring cloud services through G-Cloud in 2016	23
Considering cloud in 2016 but would not use G-Cloud	4

## 11. Sentinel in the Cloud

In August 2012 Sentinel by SCC<sup>15</sup> became the first multi-tenant Pan Government Accredited Cloud for what was at the time IL0, IL2 & IL3. This accreditation has been successfully renewed every year since and the platform is now aligned to Government Security Classification Scheme and accredited to OFFICIAL (with SENSITIVE caveat) under PSNA. The Sentinel platform also has ISO27001:2013 certification and is IG-SOC compliant for the NHS.

### 11.1 Why build it when you can buy it ready to roll out?

Like most of the other cloud providers SCC originally concentrated on secure IaaS, but unlike others, has since then concentrated on developing the complementary secure SaaS offerings that you would associate with being able to function as an organisation or department.

Sentinel SaaS offerings now comprise:



Hosted Exchange – with self-service control panel.



File & Collaboration – secure file sharing.



Hosted Desktop as a Service (VDI) - with self-service control panel.



Multi-Tenant Remote Access Service.



Managed Desktops – with self-service provision.



Sentinel Connect – secure compute HDMI based stick.



iOS MDM for mobile device management.



Database as a Service.

All SCC SaaS offerings are independently accredited and all have their own PSNA certificate for OFFICIAL. The company constantly strives for innovation in product development – for example development of a multi-tenant hosted Skype for Business offering for G-Cloud<sup>9</sup> has just been completed.

As a UK company with UK-based data centres and skilled people, SCC aims to help you transform the way your organisation operates by planning, supplying, integrating and managing your technology.

We make technology work for the end user through partnership, knowledge and passion.

## 11.2 SCC heritage



UK company with top tier data centres in the UK, guaranteeing up to 99.995% availability.



Over 500 vendor-trained professional services consultants and engineers.



Over 5,000 employees.



Dedicated service desk supporting more than five million users.



Leading strategic partner to all key vendors.



The technology division of Rigby Group PLC.



Profitable track record since 1975.







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