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(By email)

Our Ref: MGLA130521-3044

4 June 2021

Dear ████████

Thank you for your request for information which the Greater London Authority (GLA) received on 13 May 2021. Your request has been considered under the Freedom of Information Act 2000.

Please find below and attached the information we hold within the scope of your request.

1. Do you have a cloud strategy? (Please provide a link to the strategy)
   **A) YES –Please see pages 2-4 of the GLA IT Strategy 2016 (attached)**
   B) No

2. When was the cloud strategy defined? **2016**

3. If yes, what is the focus of your cloud strategy?
   A) All in on public cloud (no private cloud or on-premise infrastructure)
   **B) Cloud First (new services in public cloud with some on premises infrastructure or private cloud) YES**
   C) Hybrid cloud (some combination of one or more public clouds, private cloud and on-premises)
   D) Private cloud (no public cloud)

4. What public cloud(s) do you use?
   A) AWS                    **YES**
   B) Alibaba Cloud          **NO**
   C) Azure                  **YES**
   D) Google Cloud Platform  **YES**
   E) Oracle Cloud           **NO**
   F) UK Cloud               **NO**

5. What percentage of your applications and/or workloads is on premise?
   A) 0%
   B) 10% - 25%
   **C) 25% - 50%   YES**
   D) 50% - 75%
   E) 100%

6. What percentage of your applications and/or workloads is in the public cloud?
   A) 0%
   B) 10% – 25%
   **C) 25% – 50%   YES**
   D) 50% – 75%
   E) 100%

7. What percentage of your data is on premise?
   A) 0%
   B) 10% – 25%
   C) 25% – 50%
   **D) 50% – 75%   YES**
   E) 100%

8. What percentage of your data is in the public cloud?
   A) 0%
   **B) 10% – 25%   YES**
   C) 25% – 50%
   D) 50% – 75%
   E) 100%

9. What percentage of your infrastructure is legacy?
   **A) 0%           YES**
   B) 10% – 25%
   C) 25% – 50%
   D) 50% – 75%
   E) 100%

10. Do you have third-party services or solutions on premise that are not cloud-ready or fit for cloud migration?
    **A) YES**
    B) No

11. What workloads or functions have you moved to the cloud? (Multiple answers. Please specify other if not listed)
    A) Office productivity (e.g. Microsoft 365, Google Workspace) **YES**
    B) Citizen-facing digital services (e.g. GOV.UK) **YES**
    C) Back-office applications (e.g. transaction processing) **YES**
    D) Artificial Intelligence, Machine Learning, cognitive services **YES**
    E) Software development/DevOps **YES**
    F) Corporate functions (e.g. HR, Finance, CRM) **YES**
    G) Intranet
    H) Public website
    I) Backup, business continuity and disaster recovery **YES**
    J) Other

12. What challenges did you face when moving to the public cloud? (Multiple answers. Please specify other if not listed)
    A) Migrating certain applications
    B) Legacy infrastructure
    C) Different refresh cycles
    D) Difficulty proving cost illustrations

E)  Funding paths (Capex/Opex)
F)  Data gravity
G)  Data Classification
H)  Licensing concerns
I)  Data privacy concerns
J)  Offshoring & data residency
K)  Lack of in-house skills
L)  Vendor lock-in/ Egress cost prohibitive
M) Other

**We do not hold information in scope**

13. What percentage of your infrastructure do you plan to be public cloud based in 12 months' time?
F)  0%
G)  10% - 25%
**H) 25% - 50%   YES**
I)   50% - 75%
J)   100%

14. What percentage of your infrastructure do you plan to be public cloud based in three years' time?
A)  0%
B)  10% - 25%
C)  25% - 50%
**D) 50% - 75%   YES**
E)   100%

15. How much has your organisation spent on public cloud since the Government's G-Cloud or 'cloud-first' policy was introduced in 2012? **£ 985,892**

16. How much has your organisation spent on on-premise infrastructure since the Government's G-Cloud or 'cloud-first' policy was introduced in 2012? **£4,884,979**

17. How much has your organisation spent on cloud/infrastructure consultancy services in FY 20-21? **£0**

18. How much was spent on public cloud data egress charges in FY 20-21? **£0**

If you have any further questions relating to this matter, please contact me, quoting the reference MGLA130521-3044

Yours sincerely

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**Information Governance Officer**

If you are unhappy with the way the GLA has handled your request, you may complain using the GLA's FOI complaints and internal review procedure, available at:
https://www.london.gov.uk/about-us/governance-and-spending/sharing-our-information/freedom-information

## 3. Objectives

The objectives for technology include improving the culture of collaboration, flexibility and efficiency through the provision of:

- A scalable, cloud-based infrastructure to deal with growth in data
- Up-to-date office systems with improved support for collaboration and mobile working
- World class interactive web services that support the GLA's ability to engage and involve citizens in our work
- An upgraded intranet that supports the automation of internal workflows and improves the user experience
- Additional resource capacity and improved procedures to support the delivery of digital projects in a fast and reliable fashion
- Business continuity for our business systems that allow services to continue to operate in an emergency
- Integrated data and improved reporting to maximise the intelligence gained from existing systems

## 4. The Planned Changes

### 4.1 Dealing with the growth in data by installing a scalable, cloud-based Infrastructure

The GLA has a major challenge in dealing with the growth of data stored on the network. Over the last 10 years the amount of storage space required by the GLA has doubled every 2 years – and this growth shows no sign of slowing down.

The GLA currently provides and supports its own infrastructure (mainly based in TfL's data centre in Woking). To deal with the growth in demand additional data storage has been bought and implemented every couple of years. As the amount of data stored increases, the amount of time between procurements reduces, so that we will shortly be in a position where we are constantly buying and installing additional capacity.

To deliver a more sustainable solution we are currently exploring the possibility of storing our data as part of a "public-cloud" based service. This would allow us to easily increase the amount of capacity available to us on demand.

The delivery of technology services has seen rapid changes in recent years. The purpose of the IT Unit in many organisations has also changed. While there is still a need to support the growing variety of devices used by individuals – it is also the case that recent years have also seen a move away from large scale in-house technology systems – with the greater use of externally hosted or "Cloud" based services.

These services can be "Public-Cloud" where an external company provides functions that the organisation does not want to buy, maintain and manage. If the organisation does want to manage and maintain the service it can chose to deploy the system in a "Private cloud" where the service is run on a network that can be spread over multiple locations (offering much of the resilience and flexibility offered by Public cloud solutions).

The GLA has been deploying "Private Cloud" services (on a network shared with TfL) for a number of years now, trying not to add to the infrastructure built and managed within City Hall.

While this service offers resilience and security – the service is operated by the GLA and TfL staff and still requires the procurement and installation of equipment and systems onto this network.

Public Cloud services (where a third party provides these services to the GLA over the internet) would offer the GLA the ability to scale up and down services as required without the need to procure and install equipment and systems. This would offer the GLA increased flexibility, should reduce down-time and, over time, will reduce the cost of the service.

The Public Cloud environment is now very mature, a wide range of suppliers exist and earlier concerns regarding security are being dealt with.

The GLA has not been able to take advantage of these sorts of solutions in the past as City Hall currently only has a single route to the internet (through a single purpose built access route). Any disruption to this link would result in downtime to everyone working in City Hall. An additional route, to increase the resilience associated with access to the cloud, has now been agreed with the landlord and the new route will be implemented shortly. This means we can switch to this alternative route should the main route to the internet be compromised.

Discussions are taking place with Surrey County Council who provide cloud services to their 11 district councils and other public sector partners. They have negotiated a framework for a range of IT services that can be made available to any authority that borders Surrey, including the GLA. We are also talking to TfL and looking at potential cloud providers that are available to the GLA as part of the Government's G-Cloud procurement framework.

### 4.2 Support collaboration and mobile working by installing up-to-date cloud based Office systems

The first elements of the IT infrastructure to be hosted in the cloud (as opposed to on the City Hall infrastructure) will be Office 365, the latest version of the existing MS Office system currently used. The GLA's MS Enterprise agreement expires in April 2017 and an alternative Office solution will need to be in place for then. The GLA has been using Microsoft Office systems since 2002 in line with a common approach across the GLA Group.

Having used MS Office for 15 years, the office product set is deeply embedded in the organisation. Not only are regular files such as documents, spreadsheets etc. created in office products, there are large number of templates, macros, formats and styles that these files use, which are all specific to the products being used. Further, there are a number of commercial and bespoke applications the GLA uses that are integrated with MS Office products; including the Mayor's Questions database, SAP, the Election Management System and WriteON. A change in the product set would include the migration, conversion and re-integration of all of the above to the new suite.

All members of the GLA Group have committed to using MS Office 365 as their Office system and the use of a common system allows documents to be shared without reformatting.

The next version of the software comes with a number of tools to aid collaboration. These include:
- "OneDrive" which allows individuals to access files from any device and supports the sharing of those files
- Skype for Business – which allows video conferencing and screen sharing

The application and the documents / data created in the application will all be held in the cloud – reducing the necessity to implement and manage in-house data storage to store this capacity.

Cloud based office systems can be accessed by a range of mobile devices allowing individuals with tablets and laptops to work on email and documents without having to use the remote access system (giving a much more straight-forward user-experience).

Notwithstanding the strong case for retaining MS Office suite, we will continue to explore potential alternative office suites. There are small pockets of use in the GLA for Google docs in particular for business use but, starting in mid-2016, we will introduce more formal pilots within the GLA for project teams and business units to use alternative office products where appropriate. For example, teams that largely conduct their business operations using email, will pilot for example Gmail, coupled with an option of using either MS Office or Google docs. Project / programme teams will be set up with full the Google productivity and collaboration suite. These pilots will be coupled with a detailed examination of the migration, conversion and integration effort and cost as well as a full and detailed examination of all technical and commercial considerations outlined above. The aim will be to make a decision, by 2018/19 on whether to change the GLA's office suite.

### 4.3 Implement interactive web services that support engagement with citizens and involve them in providing solutions

The new GLA website was launched at the end of 2015 – designed with a high degree of involvement from 'real' users – Londoners themselves. Enhancements to the site have included: improved search, the ability to work on a wide range of mobile devices and high definition web-casting. A programme board continues to oversee the development of the site. Additional development planned includes further enhancements to search functionality, integration of microsites and the introduction of digital asset management functionality to improve the way we store and manage images and video.

Work is progressing on implementing cloud-based crowd-funding services to support potential regeneration projects. These assist the GLA in identifying work that has support among the community and provides a means of allowing individuals and organisations to pledge money which can be matched with GLA funding. There are a number of potential uses of this type of functionality in other policy areas also.

### 4.4 Upgrade our intranet and implement automation for our internal workflows

To reduce the need to sign paper documents an electronic signatures system will be evaluated and piloted.

There will be a fundamental review of the intranet. This work will include updating the look, design and core functionality. Changes will be made to enhance collaboration (including the greater use of discussion forums, instant messaging and video tools) widening access to allow all individuals to post information; and a new and improved search function will be implemented to improve the relevance of the results.

The use of workflow over the intranet will be examined as part of the review so that, alongside the work on electronic signatures. Existing manual approval processes will be analysed to see whether they can be replaced with an electronic process.