

<b>Board:</b>	<b>Date:</b>
Information Systems Sub Committee	11 <sup>th</sup> March 2015
<b>Subject:</b>	<b>Public</b>
Head of IT Report - Technology Roadmap	
<b>Report of:</b>	<b>For Decision</b>
Chief Information Officer	

### Summary

This report provides Members with the technology roadmap and an update on progress on some of the key activities within this roadmap, including the PSN and PSNp accreditation, Joint Network Refresh Programme, Unified Communications and the Centralisation of IT Device spend. It also seeks approval for the approach taken and notes our intention to return with a design and a costing / business case in Q3 of 2015.

#### **Technology Roadmap**

The Technology Roadmap is a development of our IS Strategy and sets out our direction of travel across a broad spectrum of technology areas. The version attached to this report is work in progress and represents a transition from the efforts of the last three years, which included:

- IS Sourcing Review;
- Managed Service Implementation;
- Reorganising the IS Function;
- Defining and setting up major change projects such as the Oracle Programme and the Telecommunications Strategy.

Future areas of focus include:

- integrating and implementing the Police IT Managed Service;
- jointly renewing network & Telephony infrastructure and implementing a Unified Communications Strategy;
- improved device management;
- contract consolidation and further savings;
- implementing the Superfast City Programme.

#### **Joint Network Refresh programme**

Both for the Police and the Corporation our network and telephony infrastructure is at or past end of life. This project seeks to renew this infrastructure and implement a joint network to facilitate closer working between the Police & the Corporation.

#### **Unified Communications**

As part of the telephony replacement work is now underway to design a replacement system, which will enable full use Unified Communications Functionality (see Paragraph 15 for a definition). This will provide a reduction in cost / cost avoidance and support changes to working practices.

### **Centralisation of IT device spend**

In the last 3 years the organisation has spent nearly £500,000 on new PCs, laptops and monitors. These have been purchased under a single contract, however spend is within the control of the relevant department and the frequency of renewal is dependent on the department's budget. There is therefore an inconsistent spend across the organisation, leading to additional costs and a variable user experience.

This report is proposing to centralise the budget for purchasing new devices and implement an organisation wide refresh.

### **Public Service Network and Public Service Network Police**

The PSN IT health check is complete. Eight vulnerabilities have been identified including 1 critical risk pertaining to Microsoft, 1 high risk around an unsupported web server and 6 others classified as medium risk.

The PSNp IT health check has also been conducted on the Police network. Six critical to high risk issues have been identified.

We are now working with the accreditors to resolve the remaining issues and gain accreditation during the 2<sup>nd</sup> Quarter of 2015 in both areas.

### **IS Strategy**

The 2013 – 2018 IS Strategy was agreed with Committee in mid 2013. Two years into this period, and in light of significant changes (e.g. Service Based Reviews and integration with the Police), this Strategy will be reviewed and reported back to IS Sub in Q3 of 2015.

### **Recommendations**

Members are asked to:

- Review the Technology Roadmap;
- Endorse the approach being taken across the main project areas, in particular the Joint Network Refresh Programme;
- Note the intention to return with detailed design, costing and business cases in Q3 2015;
- Note the intention to review the IS Strategy and report back to IS Sub in Q3 of 2015.

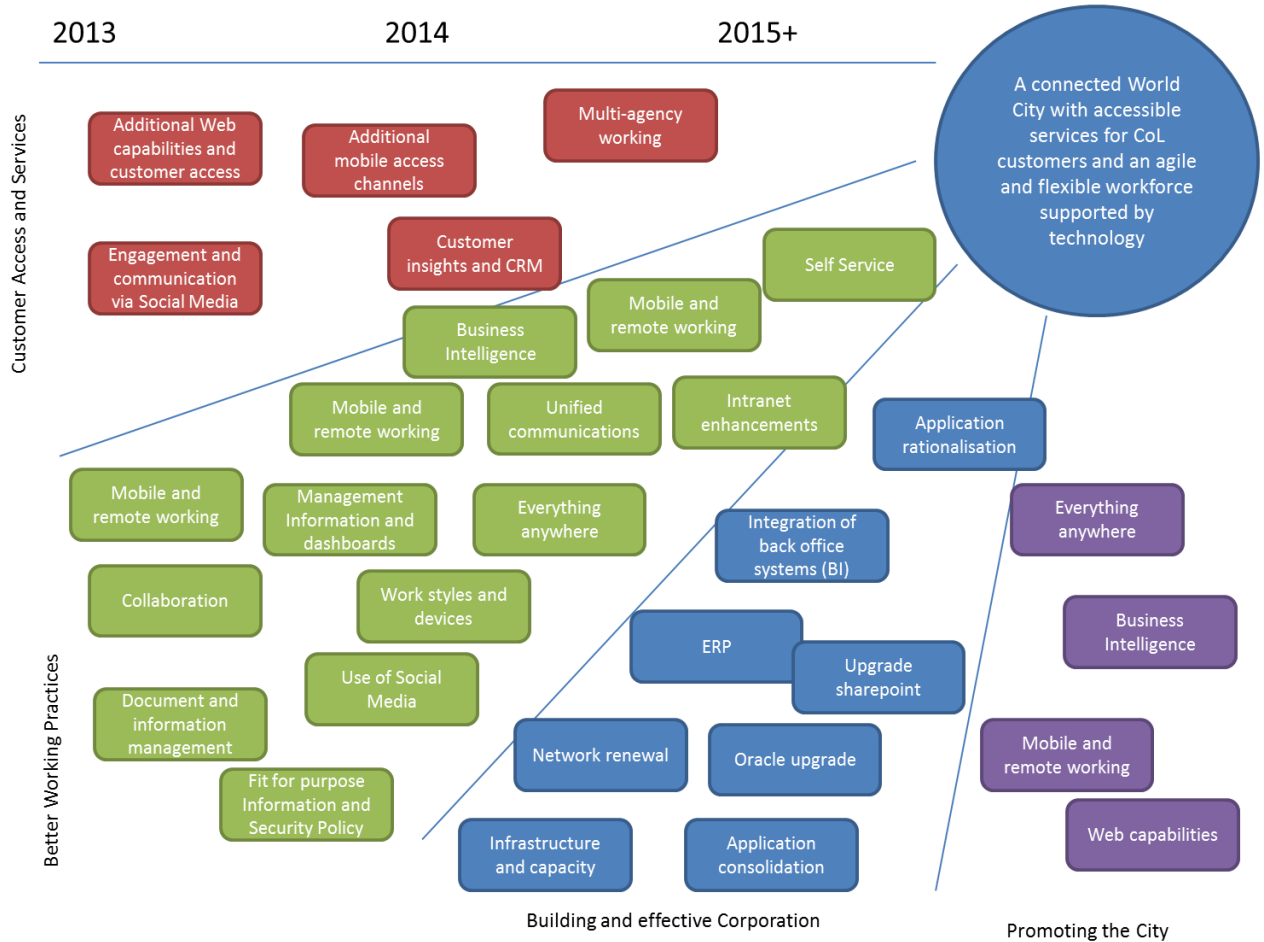
## **Main Report**

### **IS Division Technology Roadmap**

1. The Technology Roadmap is contained in Appendix 1 and sets out our direction of travel across a broad spectrum of technology areas. The version attached to this report is a work in progress and represents a transition of past and future priorities.
2. Efforts of the last three years include:
  - Procuring and implementing a managed service for the provision of core technology service and a strategic partner for the support and delivery of change in the organisation;
  - A major reorganisation of the IS Division to refresh and renew the management, change the structure and better shape the group to support the Corporation;
  - Working with the Police to review the IT provision to the Force and begin the implementation of the conclusions of this review, including the setup of an integrated IT function and an extension to the Agilisys Managed Service;
  - Setting up and implementing major change projects, including a new Wide Area Network (WAN, between buildings) for the Corporation and the Oracle Enterprise Resource Planning (ERP) Programme;
  - Develop the Telecommunications Strategy to improve wired and wireless connectivity for all stakeholders in the City;
3. Future Priorities include:
  - Working with Agilisys to implement the 8 mandatory transformation projects, which will transition the Police onto the Managed Service, greatly improving reliability and resiliency of their IT Services;
  - Supporting an ambitious change programme within the Force, from the Accommodation Programme through to major upgrades and consolidations across all major Police Systems;
  - Jointly renewing our network & Telephony and implementing a Unified Communications Strategy to replace existing ageing telephony systems and support flexible working;
  - Improving our device management, providing a consistent user experience across all parts of the Corporation;
  - Pursuing further contract consolidation and savings across both the Corporation and the Police;
  - Implementing our Superfast City Programme, turning the Telecommunications Strategy into a series of tangible improvements to both Wired and Wireless Communications.

- This work sits within the IS Strategy, primarily within the Better Working Practices and Building and Effective Corporation Themes, as illustrated by the attached Transformation Map, taken from the IS Strategy agreed by IS Sub in 2013.

### Transformation Map



### Joint Network Refresh Programme

- The Police Local area network (LAN, within buildings), WAN, Corporation LAN and Wi-Fi across both organisations were last fully refreshed in 2006. They are slow by modern standards, are approaching end of life and are struggling to deliver the performance required.
- WAN circuits between CoLP main buildings are frequently overloaded and are often the cause of the slow response experienced by users. As both organisations introduce new applications and existing ones are updated this pressure will only increase.
- The CoLP network operates at a minimum IL3 security standard with some areas at IL4. Inter-building main data circuits are encrypted for IL4 level security data. The Wi-Fi infrastructure is lacking some security features. Much of the current network equipment is not capable of supporting IP Telephony (VoIP).
- The current Corporation and Police Wi-Fi service is old, difficult to maintain and no longer fit to meet business requirements. In order to meet the varied and changing requirements, increased demand and new devices and technologies the Wi-Fi service is in need of a complete refresh.

9. The Joint Network Refresh Programme (JNRP) is currently being set up and comprises a redesign and renewal of the Police WAN and LAN and the Corporation LAN to support the strategic requirements of both Police and Corporation. There are a range of individual projects both inflight and planned, which are now being managed as a single Programme, these include:

### **Inflight**

- **IP Telephony and Voice Recorder Upgrade**, which is a tactical project to upgrade key elements of the Police telephony and voice recorder at significant risk of failure. This is currently progressing through implementation and funded from Police Capital budget.
- **PSN** is a Corp project to renew PSN Compliance. Progressing and is funded from Corporation revenue budget
- **PSNP** is a Police project to gain CoCo Compliance, implement to new PSN lines and transition from CJX to PSN services. Progressing and currently funded from CoLP Revenue budget.
- **Three Police infrastructure remediation projects** (PEN Test Remediation, Network Remediation and IAMM) addressing issues identified during 1st IT Health Check (ITHC). These projects are funded from the Police Revenue budget.

### **Planned**

- **Open Mediated Wi-Fi (OMW)** – Working in partnership with Telefónica UK Ltd to provide uniform Wi-Fi access to visitors at key Corp and Police sites. This will also enable colleagues (Corp and Police) to use the Wi-Fi to access key applications and systems in their respective networks.
  - **Police wide area network renewal**, following the same principles as the new Corporation WAN to upgrade connectivity between Police Buildings.
  - **Renewal of LAN infrastructure** across both Corporation and Police, tied into the Police Accommodation programme and making greater use of Wi-Fi as a default communications channel, rather than fixed cabling to desks.
  - **Energy Management** of devices and infrastructure across the estate to reduce energy consumption and improve the Corporation environmental position.
  - **Network Intelligence Strategy** Corporation and Police Network Access Control (NAC), Public Key Infrastructure, Security Information, Event Management and Single Sign On to reduce cost, increase security and improve user experience.
10. Approaching these projects under a single JNRP will facilitate efficient management, improved governance and increased control of scope and budget by the programme board and governing bodies within both organisations.
11. The programme will seek to complete replacement of the telephony and data network across both organisations. This will be achieved in collaboration with the Police

Accommodation Programme and the Corporations developing review of operating properties.

12. At all stages, where possible, the programme will seek to provide a joint data and telephony network design. Data and telephony network equipment will be replaced with the latest designs, a pervasive, uniform Wi-Fi infrastructure will be installed. As a cost reduction solution the programme will investigate a Wi-Fi only solution i.e. no cabling, for green field sites or sites that will be refurbished by the Accommodation programme. Where cabling must be retained, it will be progressively replaced with the highest appropriate specification to accommodate future business requirements.
13. Further design and approvals are being developed and we will return in Q2/3 of 2015 to progress these through both Police and Corporation Governance.

### **Unified Communications (UC)**

14. The current telephony system is VoIP, which is based on desk phones plugged into the same network as PCs and laptops. The infrastructure required to support this in both Police and Corporation is nearing end of life and will be increasingly expensive to maintain and renew. The system does not support flexible working and can only be extended by placing additional handsets in users homes, which is inefficient and expensive.
15. We are currently developing a functional and business case for Unified Communications, which will deliver integration of real-time enterprise, communications, such as instant messaging (chat), presence information, voice, mobility features (including extension mobility and single number reach), audio, web & video conferencing, fixed-mobile convergence.
16. There are also a number of other services which can be delivered as part of this suite of tools, including support for call centres, call routing via Interactive Voice Response (IVR), the requirements for which will be discussed with the Business.
17. This will be a joint project between the Corporation and the Police and will deliver savings through technology change, as well as being cheaper to support as well as making savings from support and maintenance. There will also be savings by not having to pay for conferencing services.
18. It will also deliver resilience by moving telephony onto virtualised servers software and allowing access to the telephony through any network connection. The concept of disaster recovery is largely removed as the solution will be highly resilient and highly available.
19. Flexible working is also supported by allowing telephony to be delivered through a software based phone, which could sit on any device, including a laptop, tablet or mobile phone. In conjunction with the JNRP this will mean that City staff and Police Officers can work in Police/Corporation buildings and take their Unified Comms functionality with them.
20. The City is currently using Office Communicator OCS 2007R2. This allows limited UC functionality, including showing presence, allowing instant messaging, internal telephone and video calls. This does show the potential of a UC product.

21. UC also allows closer connections to other organisations, allowing functionality to be shared.
22. Work is now underway to develop a full functional and business case for taking this project forward in conjunction with the JNRP.

### **Centralisation of IT device spend**

23. In the last 3 years the organisation has spent nearly £500,000 on buying new PCs, laptops and monitors. Although purchased through a central, single contract this has been done under the control of the relevant departments. This means that some departments have relatively new IT equipment, while many others relying on out of date devices.
24. This approach means that the user experience across the corporation is variable with users on older devices suffering poorer performance, more failures and service desk calls.
25. There are around 2,500 devices in the Corporation, with around 200 laptops. There are nearly 1,000 devices more than 4 years old, over 100 of which are more than 7 years old. Best practice recommends that a device is replaced on a max 4 year cycle as beyond this period the performance issues and cost of repairs mean continued maintenance is not financially viable.
26. The current spend averages out to £160,000 per annum. This equates to around 300 laptops / PCs, with the remaining budget being spent on monitors and peripherals such as USB docks. This is not sufficient to renew all devices within 4 years. It is therefore likely further funding will be required to implement this strategy.
27. This report is proposing to centralise the budget for purchasing new devices and implement an organisation wide refresh. This would be take an average of spend over the last three years out of service budgets and put it into a central pot. This would then be used to fund a refresh of devices, oldest first.
28. Current estimates indicate this approach would need to be supplemented by an additional budget of £340,000 per annum. If budgets were not centralised, additional funding of £500,000 per annum would be required.
29. An annual spend of £500,000 equates to around 800 devices plus monitors, USB docking stations and the installation of devices in batches larger than 5. This means the devices are refreshed every 3 - 4 years.
30. Going forward the strong preference would be to purchase laptops, which are now not significantly more expensive than PC's and are the most flexible device. By replacing a desktop with a laptop that member of staff can then work from a number of different locations and can work from home as required.
31. Modern devices are much more power efficient, laptops in particular have very efficient processors and low power consumption. Later devices will also support power saving technologies such as sleep on LAN. Therefore, replacing older devices will result in a reduction of power consumption for the Corporation.

32. IS are looking to procure the same devices for the Corporation and the Police to streamline the procurement process and speed up deployment times. The principle of a central budget for devices is also now part of the Police approach.
33. Approval is sought for the approach being taken and to proceed with the development of a detailed business for a centralised and structured replacement programme.

### **Public Service Network (PSN) and Public Service Network Police (PSNp)**

34. The PSN accreditor has been kept up to date with progress to date. City IS commissioned a full health check of the network in December and this was carried out in January. The report identified 8 vulnerability groups, the majority of which are in the medium risk category. There is one critical risk around Microsoft patching.
35. A remediation plan will cover how these issues will be dealt with and by when. This plan will be sent to the PSN accreditor who will then give their findings.
36. The report did not highlight an issue with the Citrix access gateways used for some remote access, as reported to the last IS Sub. However, as they are a risk we have a plan to decommission these and replace them with Managed Access Gateways (MAGs) provided by Juniper. The MAGS are already in place and a process has begun to move staff from the CAGs onto the MAGs, this will complete on. 1 June 2015
37. There is an issue with MacOS devices using the MAGs. We have 20 Mac users, one of which is a Member. This is being dealt with via a separate process. No user will be left without access, the issue with MacOS will have a solution.
38. The PSNp is working to a timeline of the first weeks in August, but all of the remedial work needs to have been carried out and accreditation received. The intention is to send out the application for Code of connection compliance in April 2015.

### **Conclusions**

39. This report sets out a series of activities which sit under the IS Strategy, Building an Effective Corporation and Better Working Practices Themes and lay out a roadmap for technology in the Corporation and the Police.
40. Members are asked to agree the principles and approach set out in this Report and receive further detailed proposals during Q2 & 3 of 2015.
41. Two years into the 2013-2018 IS Strategy, we will also return to members in Q3 of 2015 with a review of the IS Strategy, in light of the Service Based Reviews, incorporation of the Police and the Corporations revised approach to delivering Corporate Change.

#### **Contact:**

*Graham Bell*

[Graham.bell@cityoflondon.gov.uk](mailto:Graham.bell@cityoflondon.gov.uk)

*Gary Griffin*

[gary.griffin@cityoflondon.gov.uk](mailto:gary.griffin@cityoflondon.gov.uk)