



CabinetOffice

Public Sector Network

KPSN Study Case - Initial Findings

v1.0

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Executive Summary

The 'Study Case Workshop' has been developed to help public sector organisations plan for a successful transition to the Public Sector Network (PSN).

Utilising real operational information from an organisation (or group of organisations) a Study Case will discuss the challenges encountered during such a transition.

The outputs will identify areas for further investigation in order for an organisation to plan and undertake a transition programme. It considers Technical, Commercial, Service Management, Governance and Security challenges facing an organisation wanting to move to a PSN environment.

KPSN Workshop

A PSN Study Case Workshop took place with Kent Connects and Kent Public Service Network (KPSN) on 14th September 2009. This document records the initial findings; questions asked; risks, dependencies and actions identified.

The next step is to publish these findings and distribute the resulting questions and concerns to the appropriate PSN workstreams for further investigation.

Following further investigation and additional workshops, this information will be used as a basis for the first PSN Transition Guide for Local Government bodies.

What is PSN?

The Public Sector Network (PSN) is a private, secure 'Network of Networks' for the Public Sector. It will lead to the development of a new type of market place providing opportunities for industry and savings for the Public Sector.

PSN will significantly change the way Government and its associates buy and use Voice and Data Networks. It will drive efficiency savings, while setting a range of technical and service standards.

PSN will support:

- all Departments and Agencies in England;
- Devolved Administrations;
- Local Government;
- International Bodies; and
- the Third Sector.

Benefits include:

- better responsiveness to organisational change;
- more opportunities for cross border working in the Public Sector;
- lower procurement costs;

- more niche products in the Public Sector, without multiple implementations; and
- better common standards assurance, interoperability and security across the Public Sector.

What is a Study Case?

A Study Case Workshop is a paper/data based transition planning exercise.

A number of public sector organisations will be identified and asked to volunteer to explore their transition requirements in depth within a Study Case.

Each study will involve a one or more workshops designed to identify all the necessary steps to undertake a successful transition to PSN. Any knowledge gained from these workshops will provide input to create transition guides that can be used by other similar organisations.

Although these guides may initially be paper based, it would be more suitable to create a series of web-based tools to provide guidance for transition. These could include a Transition Wiki or Web 2.0 Collaborative environment where different organisations can share success stories and pitfalls to avoid.

Purpose of the KPSN Study Case Workshop

- Allow KPSN to learn about PSN, understand the benefits, begin planning to become PSN compliant and begin planning to use PSN services to meet business needs.
- Enable the PSN programme to develop guidance notes to aid other organisations when planning for the transition to PSN.

Outcomes

- High level transition plan and activities.
- All parties will be better informed to make strategic IT strategy decisions in the context of the PSN marketplace.
- Lessons learned related to technical, service management, governance and security requirements.
- Considerations for procurement and commercial strategies.

Running Order / Agenda

The Agenda below was used for the Workshop.

09:00 What is PSN, Transition Planning and Current Status
10:15 Industry Perspective on PSN
10:45 Break
11:00 Kent ICT Landscape
12:30 Lunch
13:30 Transition Planning Approach
14:00 Breakout Sessions
16:00 Report Back and Conclusion

Overview of Current Situation

PSN

- The PSN programme is rapidly maturing and ready to start supporting initial transition activities based on work completed to date with the aim to help early adopters prepare for PSN.
- PSN awareness and interest is growing and workshops are designed to produce material and insights that can be shared with a wide range of stakeholders that cannot each be engaged individually.

Technical Workstream Recent Activities

- Refining requirements and descriptions of central components and service interoperability.
- A GCN focus group is forming along with joint security/technical working groups where required.
- The Design Assurance model was established and launched. First review held based on Local Government case (Hampshire Isle of Wight).

Service Workstream Recent Activities

- A Service Management workshop was held to capture Service monitoring requirements from both a supplier and consumer point of view.
- The previously issued Service Management document set is being extended and updated to support SIM procurement.

Governance Workstream Recent Activities

- Drafted operating plan and constitution for PSN and GCN governing bodies.
- Articles of Association, Constitution and Memorandum of Understanding for PSBGB under review by industry legal teams.
- Plan to inaugurate interim PSNGB.
- Code of Connection (CoCo) is being drafted.

Security Workstream Recent Activities

- Three sub-groups have been established to cover Identity Management, Accreditation and Authorisation, and IA Issues and Design.
- The Accreditation and Authorisation group has begun its initial risk assessment for PSN.
- First draft of 'PSN cardinal statement of security' has been created.

PSN Components – Progress Update

GCN

Service Providers have commenced detailed GCN network designs. Workstreams and focus groups are monitoring and contributing to interoperability refinements.

SIM

A recent workshop agreed that the SIM will sit over the PSN as an information repository which will provide relevant information to assist in the effective end-to-end management of the PSN and services running over it. The aim of the SIM is to assist suppliers and consumer service desks in identifying the most likely service event that has caused an incident. It will provide near real-time service status information and consider service interdependencies.

Authentication, Authorisation & Directory Services

The PSN core team is identifying and reviewing authentication options based on existing programmes across government. Selection criteria include federation of major systems and facilitation of security level interoperation. The goal is to achieve ease of adoption (and use).

KPSN

Kent Connects is the lead technology partnership in Kent and Medway. With a membership that includes all the Kent and Medway authorities, Kent Police and Kent Fire & Rescue Service, the partnership is a powerful alliance of public service providers. Its role is to tackle the barriers that hinder the joining up and sharing of public services. Kent Connects is one of the founding investors in Kent Public Service Network (KPSN) together with Kent County Council.

KPSN is a single ICT infrastructure for Kent Connects' alliance of Kent and Medway authorities, Kent Police and Kent Fire & Rescue. Serving 1,100 sites and 250,000 users, KPSN has increased ICT capacity, resilience and security to deliver faster, more accessible, and better public services to residents by overcoming technological barriers to collaboration.

Key to KPSN's success is its governance through a partnership structure. All 16 partners have, in KPSN, standardised and joined up their ICT provision which supports the integration and sharing of services. Shared building control, revenues & benefits services, a virtual call centre and the Medway/Kent regional data centre are just four examples.

KPSN was the first partnership in the country to achieve an aggregated solution to the Government Connect Secure eXtranet (GCSx) providing its Partners with a fully compliant 2-2-4 network.

Study Case for KPSN

A Pre Workshop questionnaire was sent to KPSN, so that they would be able to consider the implications of a move to the PSN environment, prior to the workshop.

A copy of the questionnaire can be found in Appendix B.

Key Findings and Questions

The following is a summary of the workshop's major findings. They will be provided as input to the relevant PSN workstreams along with the details notes taken during the workshop breakout sessions which can be found in Appendix A.

1. If CoCo compliance is cumbersome, there is a danger that Local Government organisations will not 'buy in'.
2. Procurement guidance prevents expansion of contract arrangements beyond limits/scope defined in original OJEU. Local Government need guidance on how to address this.
3. Local Government want to use their networks to provide the public with internet access (libraries, schools, etc) – how will PSN support this?
4. Local Government want to use their networks to achieve Digital Britain objectives – how will PSN support this?
5. When will the list of PSN services be made available?
6. What is the likely cost for PSN compliance and who bears that cost? Both suppliers and consumers of PSN services need to understand what's required of them. If the cost is too high, Local Government will not want to pay.
7. PSN Governance Model looks overly complex and cumbersome. How can it be simplified and how does Local Government (as a body and individual departments) interface with it?

Next Steps

- Content review with KPSN representatives.
- Publish these findings (this document)
- Distribute any questions etc to the appropriate PSN workstreams for further investigation.
- Following further investigation the information will be used as a basis for the first PSN Transition Guide for Local Authorities.

Appendix A – Breakout Session Notes

Breakout Session: Security

Actions

- Work through current KCC and KPSN environment to create draft security requirements for CoCo, Code of Interconnection (CoIco) and Code of Practice (CoP). This work would cover those services likely to be PSN services, especially those currently offered under GCSx.
- Specific study of public internet provision across a PSN compliant network in a secure manner, e.g. IL0 (C,I,A) across PSN 2-2-4.

Dependencies

- Ongoing governance workstream progress on CoCo, CoIco and CoP.

Risks – Mitigating Action

- The outcome that might be recommended by PSN related to security could pose an unacceptable cost or limitation to the service. KCC and KPSN are content to release documentation as required.

Other

- Covered a variety of security related topics including: risk management, asset classification (BILS), compliance with existing CoCo's, onward connections, external connectivity, suppliers and offshoring and electronic connections with members of the public.
- Main Issues:
 - Who signs off CoCo, CoIco and CoP in the Kent Connect, KCC and KPSN scenario?
 - How do KCC and KPSN manage the risks posed by public internet service in a PSN environment (e.g. Wifi internet access in public libraries)?
 - Making the CoCo, CoIco, and CoP easy to use, understandable and explainable.
 - Getting balance right between telling people and organisations what to do and allowing flexibility.

Breakout Session: Service Management

Actions

- Service Management workstream needs a collaboration workspace.
- Work with Unisys on a technical and business operations basis to understand the interface with the SIM.
- The PSN team needs to better explain the additional value the SIM would bring to users of PSN (both central and local government) and highlight what it will cost.

Issues

- There are currently different standards required by different govt departments. Kent needs confidence that central departments would no longer ask for unique CoCos or widgets to interact. Example: Jobcentreplus workers in council building requiring separate internet connection to access DWP.
- Third party suppliers may not conform. There is a need to market PSN to suppliers so they understand the impact on public sector organisations.
- When will the list of PSN services be available? Currently there is visibility of 53 services provided over GSi.

Risks – Mitigating Action

- As suppliers become PSN compliant there is a risk that end users of existing services will face increased costs. There is a corresponding risk to PSN that it will develop a bad reputation if early adopters face significant cost. Where possible, PSN team needs to get involved in sample negotiations between public sector organisations and incumbent suppliers to better understand these issues.

Other

- Kent would like to see service information at SIM/KPSN/Unisys levels fed down to local service desks.
- KPSN requirements of SIM service
 - There should be proactive notification of changes affecting their service and visibility of known problems, their impact and resolution time.
 - They should be able to query SIM to identify issues affecting new services before they are added.
 - Consumers need to be assured that there is an agreement between suppliers to resolve incidents and problems even if the contacted service provider is not the cause of the breach.

Breakout Session: Commercial

Issues

- Sharing or selling services over PSN will be limited by OJEU rules on growth of contract value. The declared upper and lower limits of the contract value as issued in the OJEU notice also has an effect on the quality of the bid teams responding to the notice. Due to this KPSN cannot grow into London, Sussex etc. KPSN owns risk of bandwidth growth and there is sufficient capacity for 50% growth per annum over lifetime of contract.
- There is significant compliance overhead and expense for GCSx: a CoCo for each partner and an aggregator CoCo for Kent Connects partnership. PSN compliance must be inexpensive and more simple than current CoCos.

Risks – Mitigating Action

- Subcontractors may not accept flow-down of commercial conditions. Example: BT Open Reach do not necessarily accept terms and conditions of BT Global Services. Must engage with likely subcontractors to proactively address this. Also, a change of mentality is needed: if it's a commodity you cannot necessarily adjust terms.

Other

- KPSN vision includes:
 - Citizen access to local / county / central services from one place.
 - No partner lets a contract that cannot be shared with others.
 - Sharing of services with neighbouring authorities outside Kent.
- Although KCC has signed the contract with Unisys and holds the risk for KPSN, all public sector organisations including Kent Connects partners have access to the Unisys catalogue of services and make purchases directly with Unisys. Local authorities join the Kent Connects partnership through a partnership agreement. Any public sector organisation can access KPSN's catalogue of services by agreeing to and accepting the Memorandum of Understanding that allows them equal access to the catalogue. Charges for core backbone transportation are proportionate to usage or agreed by partners.
- KPSN partners are not exclusively committed to KPSN and can go elsewhere for services but Memorandum of Understanding says that partners will buy network circuits and are committed for a certain period of time.

Breakout Session: Technical

Issues

- It is expected that a number of partner LAN environments will require upgrading to support VoIP or video services.
- There are implications for PSN service delivery where KPSN partner site level customer-premises equipment (CPE) is not directly under the management of the aggregator partner, Unisys. There is concern about the requirements of edge devices supporting multiple VPNs and the potential cost of upgrading devices.
- There is no existing option A or option B gateway functionality beyond the confines of the KPSN itself.

Other

- The KPSN is constructed via partner or client MPLS VPNs , one per partner with associated inter-partner traffic management delivered via a primary transit VPN or “extranet”.
- There are 4 Classes of Service on KPSN: Voice, Video, Best Effort and Network Management. Currently, there is little usage of central application hosting and therefore little demand for critical IP class of service in support of this. Looking forward this will change as there is interest in both Unified Comms and centralised authentication (EAS).
- Each partner organisation employs its own historic private address range with instances of firewalling via the partner boundary into the transit VPN for KPSN. There is currently no common voice number or address plan across partners. DNS hosted by Unisys is responsible for upward resolution of .gov domains and local DNS requirements are dealt with within the partner networks.
- Twin 1GigE connections from JANET supply the upstream internet connectivity for KPSN.
- KPSN as an aggregated network was accredited by CESG for GovConnect.
- As a regional aggregator for PSN services, Unisys will need to investigate the requirements for connection to the GCN.

Breakout Session: Governance

Issues

- It was felt that some local or regional bodies/authorities were not included, represented, consulted or informed about PSN. Particular examples are from an HFE & Schools perspective including bodies such as the Regional Broadband Consortium, SWGfL and others.
- Procurement thresholds prevent the purchase of shared services from other public sector based PSN service providers. Procurement costs can be prohibitive.
- Draft PSN governance model seemed cumbersome, complex and overly bureaucratic. There was a suggestion to collapse the multiple PSN Authorities and related components down to a single PSN Authority body.

Risks – Mitigating Action

- Local Government will not participate in PSN if the CoCo is too onerous or expensive. The CoCo must:
 - be drafted with a full understanding of Local Government use of services;
 - include document sets for standards that are cross-referenced in the main document; and
 - not assume a single IL2/IL3 risk profile for information assurance and security for all local authorities.

Other

- The KPSN framework was let under a single contract between KCC and Unisys. The partner member organisations benefit from KPSN Services under the auspices of a Memorandum of Understanding which sets out terms of reference including Schedules covering Service Levels, Service Provision and Cost Recovery. KPSN Partners contract directly with Unisys and dispute resolution is achieved through the contract provisions. The overall Governance structure comprises a Management Board and a Service Management Board/Committee.
- Each KPSN member organisation is a GCSx CoCo signatory. Could GCSx compliance be used as a base upon which PSN CoCo compliance could be built?

Appendix B – Pre Workshop Questionnaire

Public Sector Network - Study Case Questionnaire

This questionnaire will be used as the basis for the Study Case Workshop.

The responses will be used to inform the discussions during the breakout sessions during the workshop.

General ICT Overview:

1. What kind of Network services do you currently buy and use?
2. What kind of IT services do you buy and use that run over your network?
3. How many users / devices / nodes relate to each of these services / networks?
4. How well is your ICT infrastructure aligned to your needs?
5. What is your strategy for future development of IT infrastructure?
6. What are the main problems or issues related to network and related IT services?

Business Requirements / Expectations...

7. What do you expect from PSN?
8. What would you like from PSN?
9. What do you think the biggest barriers are to the success of PSN adoption in relation to Kent's requirements?
10. What lessons have you learned from other change / transition programmes?
11. On a scale of 1 - 10 do you think you have a good understanding of PSN?
12. How far away from PSN do you think your current environment is?
13. Are there any specific questions you would like to ask the PSN Programme?

Service Management:

14. What Service Management best practice Tools/Processes do you use and how do you apply them within your organisation?
15. Do you manage and support ICT services internally or do you outsource some or part of this work?
16. Do you have a Service Desk/help Desk? (if so, how many and are they Outsourced or internal?)
17. How do you currently collect management information / monitor your services?
18. Do you or your outsourcer monitor your ICT services today? If yes, how many suppliers' networks/systems are monitored?
19. Are these monitored by receiving feeds from the supplier(s) and/or do you have your own probes within the suppliers networks/systems?
20. What information do you or your outsourcer get from your network supplier? I.e. do you get a direct feed of some/all of their circuit failures?
 - a. If not why not?
 - b. If not, do you think you need them?
21. Are external Incidents etc managed for you by your outsourced Service desk or does your Operational Service Management team manage external Incidents etc?
22. What processes do you have to resolve service incidents and problems? Typically what are the interactions and communications between your service desk and the suppliers'?
23. What are the thresholds for alerting you? And why those levels?

24. Do you do any active management once alerted? If yes, is it only when multiple suppliers are involved or when it is a very major impact?
25. Is there any link with suppliers' incident management system?
26. How often do you get incidents where the cause of failure is not immediately obvious? Do you have any tools or processes to help you identify the cause(s) of failure? Do you need to know?
27. Do you have SLA's with your current suppliers?
 - a. How do you ensure that these are met?
 - b. Do you have a regular review with your supplier to discuss performance and other Service Management issues?
28. What lessons have you learned from your system monitoring and incident management processes as you have used them over time? If you were setting up such 'systems' today what, if anything, would you do differently?
29. Are all of your current suppliers under contract with you/your outsourcer, or are there some inter-supplier contracts/agreements? If so how do you monitor the performance of these?

Technical:

30. How does your network currently link into other government organisations?
31. Do you have a good understanding of likely standards that the PSN will adopt?
32. Do you think you could adopt PSN standards?
33. Do you have any specific technical requirements e.g. bandwidth, application types, integration challenges etc?
34. Please Describe any current use of VoIP or Video services via converged solutions presently or planned.
35. Are there any instances of Infrastructure being specifically built or leased e.g. Dark Fibre aside from primary data centres?
36. Are there any current encryption mechanisms employed via network elements i.e. non-application based (IPSEC primarily).
37. Can you describe the current QoS to CoS mappings in use on the network , per community(ideally including DSCP code points).
38. Can you describe user authentication mechanisms in place currently and planned including use of MS AD / LDAP components.
39. Can you describe the current IP addressing in use across the Kent network including the use of NAT between authorities.
40. Can you describe hierarchy of DNS utilised in the scope of interest and any usage of authority internal proxies.
Can you describe any common number plans in use between local agencies / authorities.
41. Can you describe the usage of secure internet access for and upstream / national connectivity currently and planned.
42. Can you describe the interaction with CESG currently in support of solution planning.
43. Can you describe any Protective Monitoring / Intrusion Detection Systems (IDS) capabilities currently.
44. Can you describe any network management portal and reporting mechanisms currently provided.
45. Can you describe any lawful intercept mechanisms currently in place.
46. Can you describe any current or planned remote access or mobility solutions planned.
47. The KPSN is described as providing MPLS VPN capabilities for individual communities - are there any transit VPNS also for inter-community connectivity as required?

48. Can you describe any current plans as referenced in receive documents regarding possible sub loop unbundling or FTTC plans.

Security:

49. What methodologies do you use for owning, assessing and managing IA risks, e.g. ISO27000 series, HMG Infosec Standards No.1 and No.2?
50. What mechanisms do you currently use for information asset classification?
E.g. Business Impact Levels?
51. What impact levels for Confidentiality, Integrity and Availability do you currently operate?
52. What is the extent of your GovConnect compliance, e.g. whole of segregated part of your network?
53. What IA governance do you exercise over your suppliers, particularly those who handle your information?
54. What operations have been off-shored and how are the risks managed?
55. How are electronic interactions with members of the public risk managed?
56. What over external connectivity is in place that has not been covered elsewhere?

Governance:

57. What is your current Governance model? Which body is the ultimate arbitration authority in your model and what 'powers' do they have?
58. What CoCo's etc have you already signed for connecting to Government systems?
59. Do you monitor your performance against the CoCo? Does any other organisation?
60. If you were developing your CoCo today, what, if anything, would you do differently?
61. What do you want from a PSN CoCo?
62. If you intend to be a PSN Supplier what do you want from a ColCo and CoP?

Procurement / Commercial:

Please note:

Answers to this section will be commercial in confidence and only available to public sector employees, unless you are willing to share the responses with a wider audience.

63. What is your procurement strategy / timeline?
64. Do intend to adjust your current contracts to be PSN compliant or re-procure?
65. Would you consider procuring from an existing framework or managing a pan government framework?
66. Who are your current suppliers?
67. Are all of your current suppliers under contract with you/your outsourcer, or are there some inter-supplier contracts/agreements? If so how do you monitor the performance of these?
68. Do you intend to sell / share services with other users of PSN?
69. Would you consider using another public sector organisations shared services?