

Network Domain Roadmap

Technology Roadmaps

DOCUMENT CONTROL

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1.0 Introduction

This document describes the target architecture roadmap for the Network Domain. The network Domain consists of the global internal and external connectivity systems including data and voice.

1.1 Objectives

The objectives of this document are:

- To provide a summary of the roadmap for the Network Domain
- To communicate an understanding of the Network Domain target architecture to stakeholders at an appropriate level of detail
- To position the Network Domain within the overall British Council enterprise architecture and describe the capabilities covered by this domain
- To describe how the business direction and technology opportunities have shaped the target domain architecture
- To explore the options available to British Council for this domain
- To identify the major deadlines and milestones for the delivery of the capabilities provided by this domain
- To identify at a high level the resources and skills required to implement the capabilities
- To describe the Network Domain roadmap

2.0 Executive Summary

The British Council's enterprise architecture is currently organised into seven domains; data, applications, collaboration, platform, networks, system management and security. This document focuses on the network domain.

The British Council global network is outsourced; therefore the Council should not need to be overly concerned with the finer details of the network architecture in the same way as for the other domains. It is however important that the service interfaces are clearly defined and that the network service fits the requirements and meets the standards of the overall enterprise architecture.

Because the platform optimisation strategy is partly based on centralisation, the network is a critical resource for the British Council. If the network does not perform or becomes unavailable, business can be seriously disrupted, however, this must be balanced against cost and feasibility.

2.1 Optimising the Network Service

Priority	Initiative	When	Key Benefits
High	Improve service monitoring & reporting	ASAP ¹	<ul style="list-style-type: none"> Improved service quality Reduced operational risk
Medium	Standardise voice telecommunications provision	By end 2010	<ul style="list-style-type: none"> Increased flexibility Improved scalability
Medium	Contact Centre and CRM Integration	By end 2011	<ul style="list-style-type: none"> Improved business efficiency Better access to information

Table 1 - Network Domain Strategic Approaches

There is not much that can be done within the scope of the existing network outsource agreement, however there is a possibility to optimise the existing service and improve the level of service monitoring and reporting.

There is also a potential to standardise and simplify voice communications, potentially making greater use of the network to carry internal voice traffic. Closely linked to this is the potential to utilise network capability to provide an integrated CRM capability, however this is dependent on the provisioning of a British Council CRM solution that is within the scope of the Applications Domain.

2.2 Outsourcing

Most of the current outsourcing agreements come up for renewal in 2012, including the Network contract. There are a number of potential sourcing options to be explored, to enable a sourcing decision by the end of 2010.

- Stay with existing providers
- Find alternative providers

¹ Should already be part of service contract, just need to ensure that it is implemented – this may require changes to the Supplier Management ITIL processes

- Find a partner or group of partners for joint sourcing agreement
- Use existing service, e.g. FCO
- In-source / off-shore, e.g. Ocean Programme

The 'outsource' third option provides an opportunity to reduce contract management duplication and to pursue "joined up" solutions with one or more organisation. These would lead primarily to improved planning and delivery capability rather than reduced overall costs.

The opportunity of planning around joined up solutions (unified communications and CRM projects) is particularly interesting as this would give the Contractor, or their designate, total project management responsibility. It may even be possible to identify specific projects which can be folded into the 'outsource' or used as a test of the suppliers capability in the procurement cycle.

3.0 Network Domain Architecture Description

The Network domain contains the components that provide the connectivity globally for the other architecture domain layers.

The scope of the Network Domain covers all forms of connectivity including voice communications.

Currently the network domain is outsourced to Global Crossing who provide and manage network services on behalf of the British Council. Global Crossing has a strong footprint in the UK Government sector and is well suited to organisations with an international flavour. For example they are also providing services to the Foreign and Commonwealth Office which has strong ties with the British Council itself.

The detailed architecture which Global Crossing uses is their responsibility. This extends to choices about supply management where applicable. From the British Council's perspective, the networking capability is delivered as a service and therefore primary concerns should be less about whether the Supplier's technical capability and service are sufficient and more about:

- 1) The service interfaces (relationship and supplier management)
- 2) Performance and availability (quality and availability management)
- 3) Agility (performance and availability management)

...and associated management information provided to GIS by Global Crossing. It is also worth periodically reviewing whether GIS has sufficient capabilities to assess this data (for example whether more than one person understands the contract, SLAs and data sets).

A supplier review process with Global Crossing is currently underway focusing on these issues. This is likely to lead to some improvements. However, this cannot address the issue of limits of responsibility arising from split service provision. For example, the Council may experience degraded service. Global Crossing identifies that the Network appears to be functioning effectively. The task of further analysis - to try to identify whether there is an infrastructure or application problem (or both) - reverts to the Council. Typically these issues only get properly resolved in a percentage of cases.

British Council's Enterprise Architecture Approach

The enterprise architecture is a comprehensive framework used to manage and align an organization's business processes, Information Technology (IT), software, hardware and information requirements with the organisation's overall business strategy.

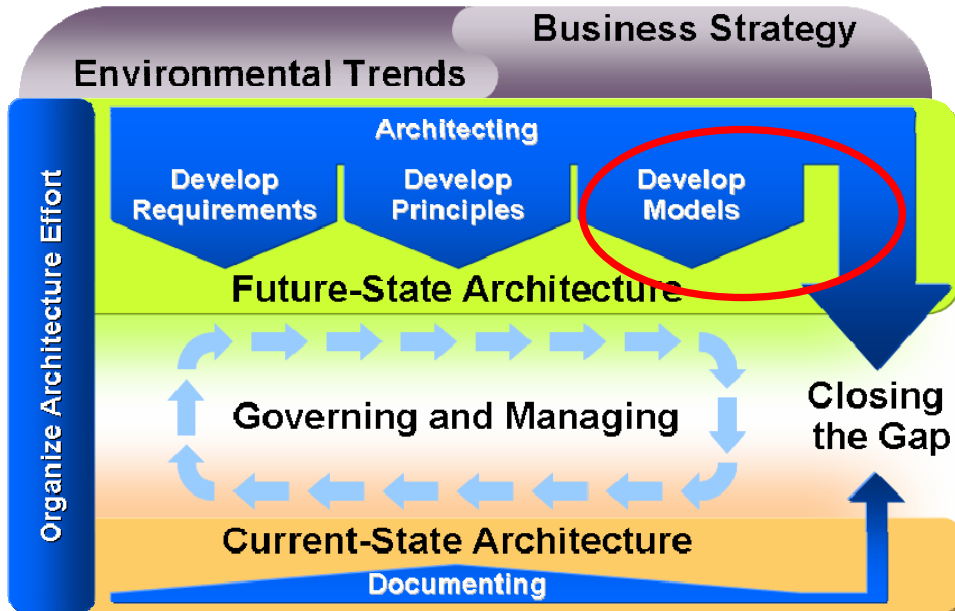


Figure 1 - British Council Enterprise Architecture Approach

This document focuses on service architecture model for the Network Domain.

3.1 Position of the Network Domain within the overall British Council Enterprise Architecture

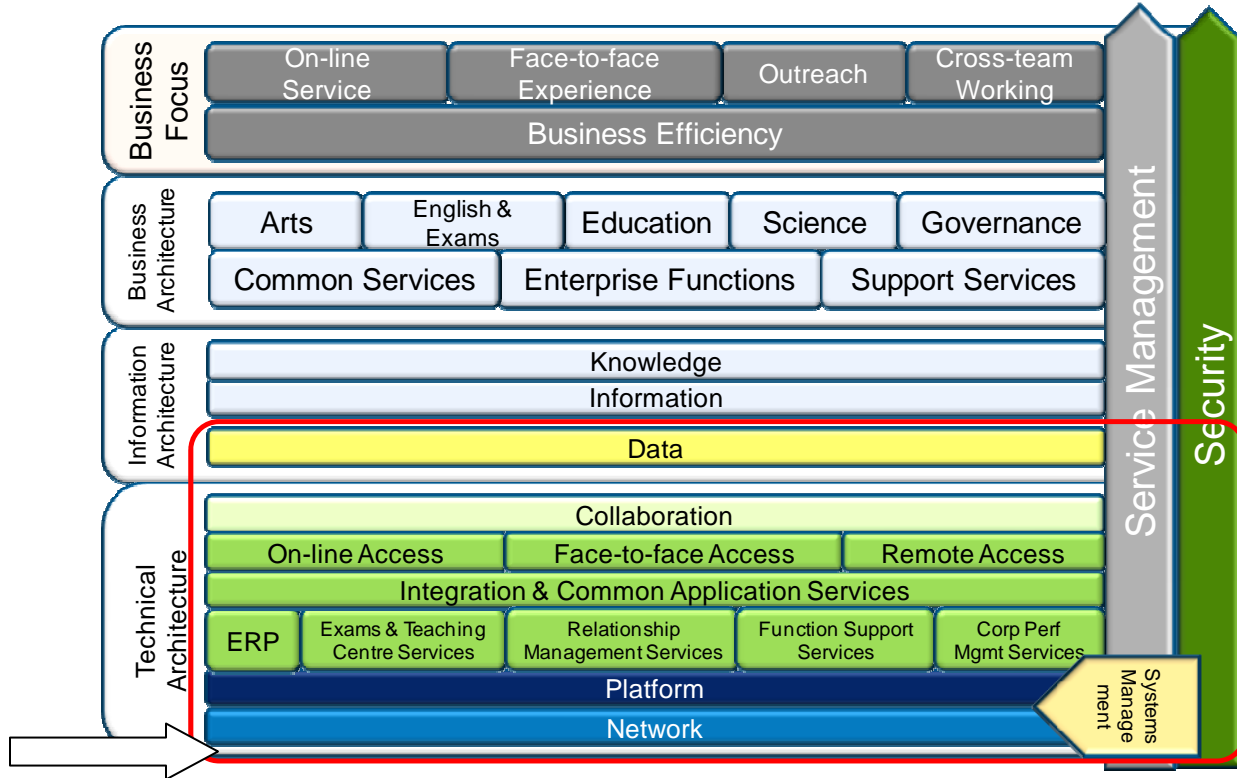


Figure 2 - British Council Enterprise Architecture domains

The network domain is one of seven enterprise architecture domains currently identified within the British Council. The 'in-scope' domains are shown within the red box in the picture above. The network domain incorporates the internal and external connectivity of IT systems and includes voice communications.

These capabilities are listed in summary below.

3.2 Capability Summary

The key end-user capabilities enabled by the network domain are likely to evolve as more use is made of the network capabilities, for example for carrying voice traffic.

Data:

- Internal data traffic
- Public network connection
- Internet acceleration

Voice:

- VOIP
- PABX connectivity

However it is important to note that network services are enabling services. For example in the contact centre arena alone the availability, performance and agility of the network helps enable:

1. **Customer Centric Routing** – accurate call (contact) routing to ensure every interaction is routed to the resource most able to deal with the query. Calls can be routed to specific skill groups within an organisation, irrespective of physical location.
2. **Workforce Management** – tools allowing organisations to forecast and schedule agents dynamically based upon traffic volumes.
3. **Business Process Routing** – it is possible to integrate back office applications e.g. CRM into the contact centre. As an example the incoming telephone number could be recognised before the call is answered and the customer details and contact history could be surfaced to the agent.
4. **Virtual Contact Centres** – Single platform Contact centre platforms can be ‘virtualised’ to accommodate up to 250 ‘virtual’ agent groups. As an example a single physical platform within a region could manage the routing of calls to customer agents across different countries. In addition, during peak periods of activity calls could be overflowed between countries to maintain customer satisfaction. This virtual capability would also allow agents to be home based.
5. **Basic Features** – include the ability to provide customers with informative information (e.g. position in queue), music on hold, the ability to leave voice mail messages.
6. **Integrated Self service** – allows the ability to use touch tone or speech enabled processes to provide the customer with automated handling of calls.
7. **Internet & Multi Media integration** – allows customers to interact with the British Council based upon the preference of the individual e.g. through voice’ eMail, Web Chat, instant messaging and even video calls).
8. **Proactive Contact Management** – allows outbound customer contact to target specific profiles of customers with campaigns, through the use of predictive dialler or bulk SMS solutions.
9. **Reporting and Analytics** – provides comprehensive management information relating to call volumes, handling times and agent performance.

4.0 Direction of Travel

4.1 Business changes impacting the Network Domain

The British Council's business-driven enterprise architecture strategy includes a number of Priorities and Principles that drive the Network Domain. These are:

- Business Priority 7 - Increase Efficiency
- Business Principle 1 - Climate Change and Environmental Policy
- Business Principle 2 - Business Agility
- Business Principle 3 - Maximising Efficiency

The following sections discuss how alternative architecture may increase alignment with the Priorities and Principles shown above.

4.2 Architectural and technical opportunities

The current architecture of the network provision itself should be considered a black box. Global Crossing provides an MPLS "cloud" which can be used to reduce costs and improve the speed with which new solutions can be provisioned.

Voice over IP telephony services are currently being rolled out over the network by integrating the existing PABX estate. This provides costs benefits through the ability to generate inter site and break-out calls free of charge. The capability to achieve this functionality is enabled through the translation of traditional telephony based standards (in this case TDM) to IP services which can be delivered across the network.

The Global Crossing MPLS network provides the British Council with the opportunity to exploit a number of converged (voice/data/video) applications which could significantly improve the experience of customers contacting the British Council.

However there are factors which affect the overall service, performance and planning and which are hampering effective service management.

4.2.1 Standardise voice telecommunications provision

The Council has historically acquired solutions in a piecemeal manner which means it has a large number of suppliers and solutions. These require refresh and support at different periods. This creates a control and asset management overhead of its own.

The variety in the telephony platform impacts

- Day to day management – it adds to the difficulties of incident management and problem resolution. What may be a fix for a problem in one area cannot be predicted to apply in another (where the configuration differs). This encourages a "wait and see" approach, rather than a proactive approach to solution and asset management. Standardisation would reduce these costs.
- Innovation (including the ability to deploy and exploit shared application services globally). Standardisation of the telephony platforms would allow applications to be deployed and shared without the need to build separate interfaces and deploy translation gateways to effect intercommunication between platforms.

In order to meet specific, strategic business requirements, a business case would be required to justify any capital investment. Such a business case should be part of a strategic programme case supporting overall enterprise architecture requirements rather than attempting a point “solution” case (see Findings and Recommendations report), However, even without such a case/investment, replacing existing legacy PABX systems based upon natural end of life will provide some opportunities to begin to roll-out a standardised telephony platform.

2. Contact centres and CRM design

One future challenge for the Council will be to establish highly adaptable solutions for Contact centres.² These solutions would have two functions

- To provide services to current and future Council customers
- To provide internal British Council helpdesk operations, providing intelligent routing of calls and emails to specific service groups (e.g. fault resolution services)

These systems can be tailored to meet Council needs. For example, all the contact centres can be “joined up” to enable each contact centre to fail over to another when all operators in one centre are engaged. This allows appropriate specialisation (e.g. by function or by geography) but also ensures that no caller is ever lost or passed around.

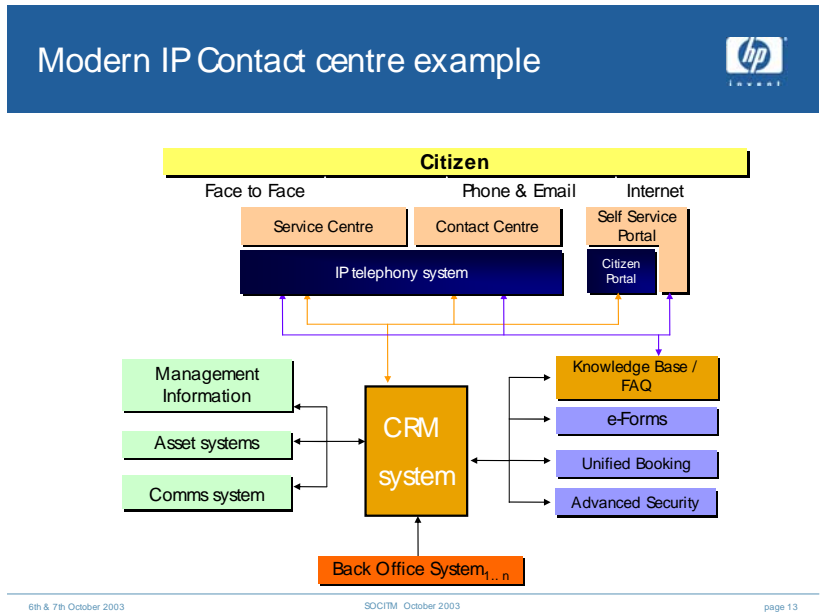


Figure 3 - Modern IP Contact centres help drive service transformation

By establishing such systems, the Council can quickly establish and set up new service functionality while still retaining a “whole council” approach.

² ‘see Global IS Strategic Requirements’

4.3 Overview of Change

The following assessment positions the network changes in the context of the overall EA Benefits model. The priority for these changes could be increased if radical change to service operations and delivery is introduced in the next three years. The changes are relatively easy to implement. There are however dependencies on EA strategy, service management and other network changes. For example, standardisation of the telecommunications platform and improvements to the desktop infrastructure would logically precede the introduction of flexible contact centres. That said it may be possible to look at contact centres as a specific group and accelerate the provision of standardised platforms and services to that group, if required.

		Network		
		Outsourced Service Monitoring & Reporting	Standardisation of Voice Telco Provision	CRM Integration
Prioritisation Rating		23	12	14
Difficulty (1 = easy, 5 = difficult)		1	3	2
Cost (1 = low, 5 = high)		1	3	3
Dependency Factor (1 = has dependents, 5 = no dependents)		3	4	4
Benefit	Importance (1 = low, 5 = high)			
Increase business efficiency	5	2	3	5
Reduce operational risk	3	5	3	3
Faster time-to-market	3	1	3	3
Flexible business relocation	3	3	5	3
Flexible delivery channel support	2	1	3	4
Flexible working (e.g. 3rd parties)	2	1	2	4
Better access to information	4	3	3	4
Improve service quality	3	5	3	4
Improve scalability	3	2	5	3
Reduce IT costs	5	4	3	2
Strengthen compliance & security	4	5	2	2
Reduce training needs	1	1	3	2
Value (Higher = more value)		115	120	125

Figure 4 - Enterprise Architecture Benefits Matrix

The most important and urgent of these are:

- Increased business efficiency
- Flexible working and delivery
- Better access to information
- Improved service quality

5.0 Making it Happen

5.1 Technology Choices

There are a number of standardised network and telecommunications products ranging from telecomm products, to system monitoring products and CRM solutions. The detailed choices may vary slightly depending on the exact strategy and purpose. However an immediate and general adoption of standardisation will reduce costs, increase flexibility and make it easier to outsource services in 2012.

5.2 Key Organisation Processes

The following processes are required to ensure successful implementation of this roadmap:

- Enterprise architecture governance
- ITIL processes:
 - Supplier management
 - Capacity management

5.3 Resources and Skills

In the longer term, the actual resource required depends on the sourcing strategy adopted. Currently sufficient skills exist within GIS to support the network domain.

5.4 Provision Assumptions

This document assumes that there will be an ongoing requirement for network services and a rich market in terms of supply. It also assumes that, in the coming four years, the availability of internet and standard network services (as opposed to satellite) will progressively increase across the globe and in particular to places which are currently “hard to reach” across the Council estate.

5.5 Milestones and Deadlines

The Council has stated that it will decide on an outsourcing strategy by 2010, and that should outsourcing be adopted as the way forward the Council aims to have contracts signed by the start of 2012.

5.6 Domain Strategic Roadmap

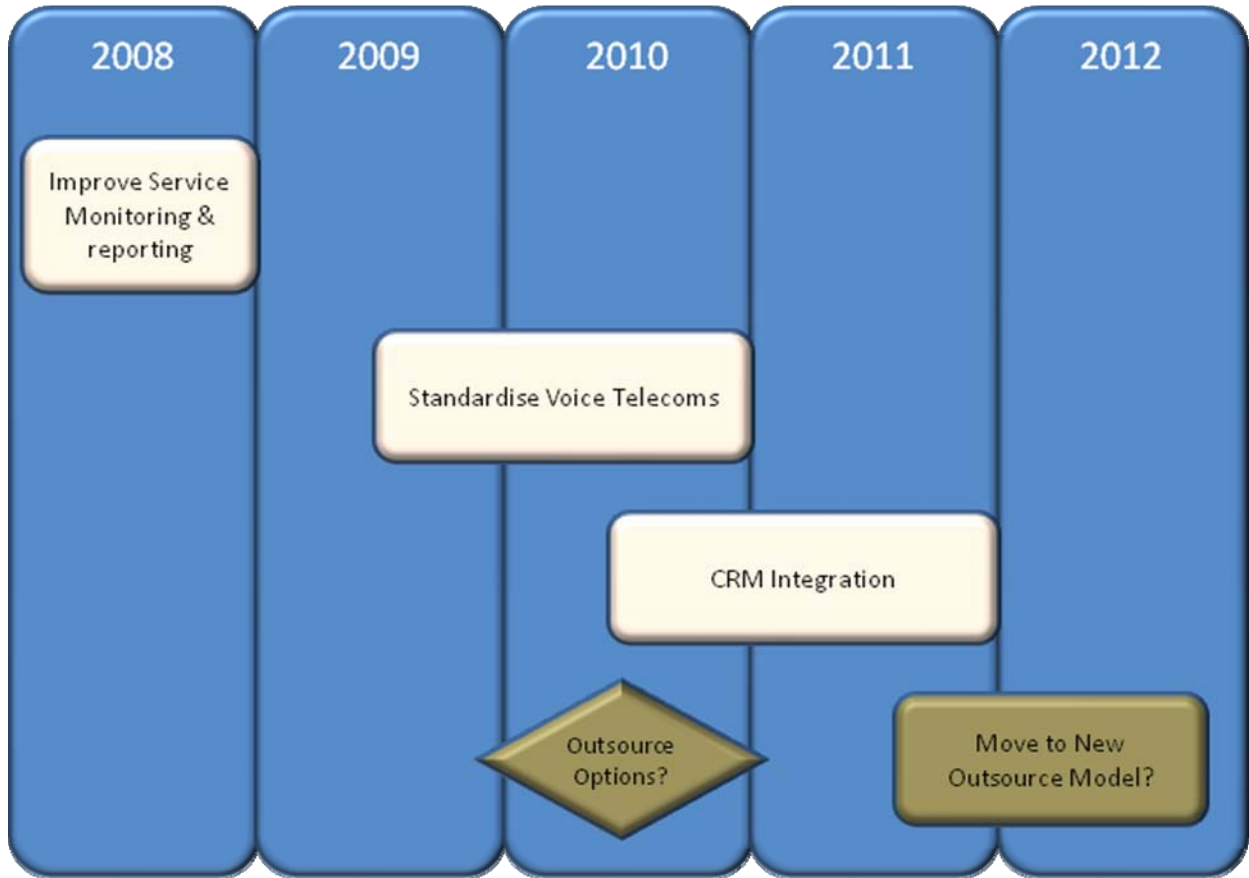


Figure 5 - Network Domain High-Level Strategic Roadmap

5.6.1 Step 1 - Improve Service monitoring & reporting

The first step is to improve service monitoring and reporting for the existing network service.

5.6.2 Step 2 - Standardise Voice Telecommunications

Move to a unified voice telecommunications model.

5.6.3 Step 3 - CRM Integration

Integrate CRM capability into the network.

6.0 Appendix 1 - Principles Guiding the Network Domain

6.1 Business Principles

Business Principle 1 - Climate Change and Environmental Policy

Business Principle 2 - Business Agility

Business Principle 3 - Maximising Efficiency

Business Principle 5 – Security Strategy

6.2 Functional Principles

Functional Principle 3 - Scalability and performance

Functional Principle 4- Legal and Regulatory Requirements

Functional Principle 5 – Confidentiality, Integrity and Availability of Data and Systems

Functional Principle 6 – Security Policy

Functional Principle 8 – Business Continuity

6.3 Technical Principles

Technical Principle 2 – Maximising Microsoft Infrastructure Benefits

Technical Principle 3 - Industry Standards

Technical Principle 4 - Buy not build

Technical Principle 5 - Flexibility

Technical Principle 6 - Non-vendor specific solutions

Technical Principle 7 – Security Standards

6.4 Implementation Principles

Implementation Principle 1 – Health & Safety

Implementation Principle 2 - Strategic Suppliers and the British Council

Implementation Principle 3 - Provision of Services

6.5 Governance Principles

Governance Principle 1 - Enterprise architecture is business driven

Governance Principle 2 - Architectural values are to be publicised

Governance Principle 3 - Architecture efforts must be unified across the Enterprise

7.0 Appendix 2 - Network Domain Standards

For future use: This section will contain a list of network specific architecture standards.