

# Enterprise Architecture Roadmap

## Technology Roadmaps

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## 1.0 Introduction

This document describes the target enterprise architecture for the British Council.

### 1.1 Objectives

The objectives of this document are to:

- Communicate an understanding of the enterprise architecture to stakeholders
- Describe the process of developing and maintaining the enterprise architecture
- Provide an assessment against an Architecture maturity model
- Describe how the architecture is structured, and how the various architecture domains fit into the overall picture and how the architecture links to GIS strategy
- Explain the relationship to the CRV (Common Requirements Vision)
- Highlight Principles, structure, process and relationship to EA models
- Describe how the business direction and technology opportunities have shaped the target enterprise architecture
- Identify the business benefits enabled by the enterprise architecture
- Define the programs of work that will deliver the business benefits identified above
- Identify the major deadlines and milestones for the delivery of the above
- Identify the skills and resources required to move forward

## 2.0 Executive Summary

The British Council has been developing its enterprise architecture for some time and has made excellent progress. Recently HP has been working with the British Council to develop architecture roadmaps at the enterprise level and for specific technical domains. These roadmaps will drive initiatives that will lead to specific programs of work.

An overall technical architecture framework has been created and owners assigned to technical domains within GIS. Some work has already taken place to define the future-state architecture within this framework, especially in the infrastructure domains.

To drive the enterprise architecture forward now requires strong engagement with the businesses and the implementation of robust enterprise architecture governance.

In addition, the British Council must make a number of sourcing decisions. These could have a significant effect on the shape of network, platform and systems management domains.

In the following sections, we have used “business” to mean any part of the Council’s organisation that has the ability to take decisions about how services will be provided and authority to develop or grow such services.

### 2.1 Enterprise Architecture Governance

In order for enterprise architecture to be effective and realise the potential business benefits, it must be put into action. Experience with other customers has shown that organisations may invest significantly in enterprise architecture but often fail to connect it into the ongoing governance lifecycle. Key IT decisions – which should be informed and controlled by the Enterprise Architecture – continue to be made within business units (or even parts of the IT organisation itself) which disregard or subvert the architecture. Strong governance ensures that architectures are put into practice rather than remaining as ‘shelfware’.

Part of the problem is that people are sceptical about the value of architecture, may see it as a threat or impediment. The work of the architecture team is to sell the value of enterprise architecture to IT and the businesses. Section 4.0 of this document, *The British Council EA Benefits Model* focuses on the key benefits arising for the Council from the proposed EA programme.

Effective governance requires the buy-in of senior management at the highest levels within the organisation, because enterprise architecture requires support and consensus at a global level. It also requires the implementation and monitoring of governance processes to ensure that solutions are conformant.

It is therefore of the highest priority to establish strong enterprise architecture governance across the organisation, involving senior IT and business management in the process.

### 2.2 Engagement with the Business

The purpose of enterprise architecture is to ensure that IT delivers maximum value to the business. In order to do this it is necessary to reduce the amount of duplicated effort and expenditure and ensure that solutions are consistent and integrated, allowing information to flow freely across the organisation.

To make this happen, it is essential that the businesses be directly involved in the architecture process and that requirements are considered across the whole organisation. At the most strategic level, the objectives of the business are relatively clear. However, significantly more detail and understanding of business requirements globally is required in order to define a true enterprise architecture future-state for the Council as a whole.

Through the work done so far, it is clear that there is difficulty in articulating the business requirements at this level required for enterprise architecture. Businesses tend to be comfortable at the strategic level or the detailed solution level but struggle to focus on requirements at the enterprise level. This is partly organisational and partly cultural – in the past businesses have been used to being responsible for their own solutions and continue to operate as a “federation” of separate organisations.

An example of this in the Council is customer relationship management. Detailed requirements have been produced by the business, but there is still no clearly articulated common requirement for CRM, nor a cross-Council business case to underpin it. In our understanding, some of the businesses are creating their own solutions with their own justifications outside the control of the overall architecture.

Clearly, it would be a significant challenge for the architecture team within GIS to try to engage with the whole business directly; however, it should be possible to work with one part of the business initially. English and Exams would be an excellent place to start, partly because there are already good relationships established, but also because the requirements of the E&E business tends to be somewhat clearer and more stable than those in other areas.

### 2.3 Establish the Sourcing Strategy

The British Council will establish its IT sourcing strategy for the next period by 2010. Current contracts terminate in 2012 and 2 years is a normal lead time for the procurement required to establish the new ones. The sourcing strategy will have a very significant impact on the enterprise architecture; therefore it does not make sense to invest too heavily in creating a future state until the strategy is clear. As an example, if the overseas platform is outsourced to a third party, responsibility for the detailed technical architecture will move to the supplier. In that case, British Council's focus will be on supplier management, managing the service interfaces and maintaining control of the architecture and governance at the enterprise level. The extent to which the Council will need to manage the service will depend on how the outsourcing arrangement is structured, i.e. prime / sub-contractor or multiple primes.

However, there are still some areas of the technical architecture which need to be addressed in the short term. This document and the associated domain roadmaps take this into account.

## 3.0 The Enterprise Architecture Process

### 3.1 Overall Approach

The British Council is following the classic enterprise architecture approach based on the following:

1. Develop future state architecture in terms of Models, Standards and Principles, based on understanding of the business strategy
2. Document current state architecture
3. Create architecture governance processes and structure
4. Identify and manage programs and projects which will close the gap
5. Ensure that the programs and projects are governed to achieve the desired future state

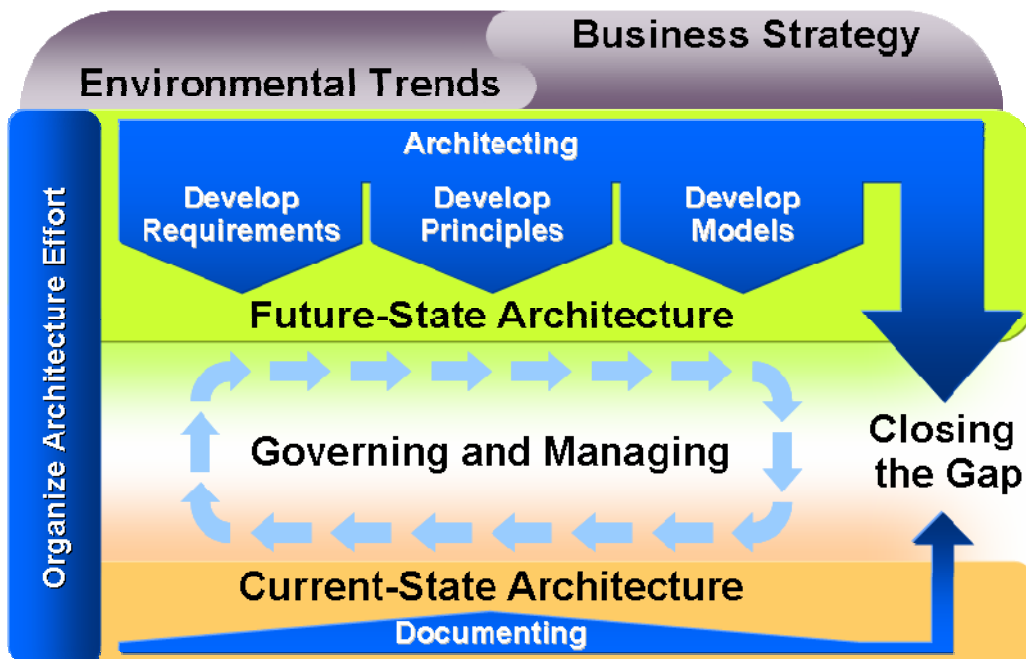


Figure 1 - British Council Enterprise Architecture Approach (Gartner)

### 3.2 Environmental Trends & Business Strategy

The starting point for the development of the enterprise architecture is an understanding of the environmental trends and the business strategy.

Using the Gartner EA methodology, the British Council has developed a *Common Requirements Vision* that maps environmental trends and business priorities to IT requirements that define the ea focus areas.



**Figure 2 - Common Requirements Vision Summary**

### 3.2.1 The Common Requirements Vision

The Common Requirements Vision (CRV) provides a prediction of the future-state architecture. It links the British Council purpose, outcomes and business priorities with the IT requirements that Global IS needs to deliver on to satisfy the business strategies.

The CRV is a fundamental deliverable of the Gartner enterprise architecture process and influences all future architecture work including the development of principles and models for the future-state architecture. Additionally, it provides a mechanism for evaluating the business alignment of potential projects and the existing architecture.

### 3.2.2 The Vision

(Extract from the British Council's *Common Requirements Vision V3.0* 18<sup>th</sup> September 2007)

***By 2010, the British Council will have a much smaller requirement for grant-in aid with additional income streams and lower running costs. It will have transformed itself into a quasi-commercial organisation with new sources of income compatible with its corporate purpose. Additionally, the British Council will have driven down operating costs to increase efficiency and reduce its carbon footprint.***

***Our online presence will better meet the needs of our customers, will directly support our public diplomacy agenda and will provide new income streams. The new online presence will be transactional providing functionality such as registering and paying for courses, events and exams online, viewing our art collection and buying prints, as well as buying British Council publications and teaching materials. It will be tightly linked to the Customer Contact and Profiling system providing customers with "self-service" access to their personal details and to control their subscriptions to British Council services. It will also provide online networking opportunities through the use of online community building functionality. This will enhance our contribution to the UK's International Strategic Priorities and support our business priorities.***

***All staff will be able to quickly and easily find the information they need to do their job. In fact, the information will find them through the use of intelligent search agents. For example, when a key contact attends an event this is flagged to the event organiser who might perhaps offer the guest a complimentary drink. Later, when the contact sends an e-mail or SMS to thank the organiser the relationship manager is automatically informed and can follow up appropriately.***

***The British Council will be more customer-focussed, through the use of Customer Campaign and Feedback Management systems, and will have a mature sales organisation able to efficiently convert prospects to customers increasing income and improving other key performance indicators.***

***The organisation will know its customers and markets much better and will be able to develop innovative products, perhaps with partners that exactly meet the needs of the customer, generate new income streams and contribute to our business priorities. This will be facilitated by mature customer service processes and an effective information management system, which will have mitigated any reputation risk associated with FOI and Data Protection legislation.***

***The value of the work we do will be clear to all members of staff, stakeholders and partners with reports readily available showing key performance indicators.***

***Managers at all levels will have management information available in a customisable online dashboard, providing an "at-a-glance" view of performance in their area of responsibility.***

***The organisation will be much more responsive with a much more flexible IT infrastructure deployment model able to provide new services and capabilities quickly so that opportunities to deliver business priorities can be maximised.***

***A number of IT services such as e-mail and our ERP system (FABS) will be shared with other government departments and non-departmental government bodies significantly reducing our running costs, improving efficiency and lowering the carbon footprint for all the involved partners.***

### 3.2.3 Comments on the Vision

The IT Vision is a good general view of a to-be state for the capabilities that the Council will be able to demonstrate and deploy by 2010. It also provides a springboard for gaining the governance control required. It appears a very challenging Vision if it is to be materially completed by 2010, given the current level of maturity and development.

The following questions may be useful in turning the Vision from a GIS "internal" document into the basis for governance and change. They should be applied at each stage of future evolution. Is the answer is "No" to any of the following; this would constitute a threat to the achievement of the Vision. A specific action plan should then be implemented to achieve the necessary changes to achieve a "Yes".

A significant number of potential projects will need to be established. A number of these are explored in section 5 and their related domain documents. However other "non technical" elements, including governance, funding, communications and risk management, will need to be incorporated if a true programme – with appropriate governance – is to be achieved. This will require concerted effort from both within GIS and the Council as a whole. Some of the products are described in section 6 of this document. HP would emphasise that it is overarching governance (at Council Executive Board level) which will prove crucial to achieving change.

- Is the Vision formally signed off by the Executive Team?
- Is the Vision embraced and used by the Executive Team in strategic planning?
- Is there a blueprint for the plan and each key component?
- Is there a priced plan for delivering each of the projects required to deliver the necessary changes?
- Has the priced plan been developed into an overall programme of change?
- Has the programme Governance been established?
- Does the Programme Governance have appropriate senior business input?
- Has the priced programme been approved by the Executive Team?
- Have the necessary resources been allocated to the programme and plans for each financial year (2008-11)?
- Do the resources include necessary contingency funds to release/acquire appropriate staff to implement the changes?
- Have business champions been appointed to the programme as a whole and to each major project?
- Are these champions and their projects empowered to act on a cross BU basis?
- Are there clear communication and publicity arrangements in place for the programme?
- Have ground rules and controls been established to ensure that non-compliant or divergent solutions development can be captured and either incorporated or curtailed (for example at budgetary, PID and Gateways stages)?

Other useful questions and tools can be found in the recent *Managing Successful Programmes*<sup>1</sup> publication.

### 3.3 Defining the Future State Architecture

The future-state architecture is described in terms of:

- Models – which describe in words or pictures what the future state will look like
- Principles – which guide how the models are created and implemented
- Standards – specific well-defined policies and measures to which solutions will comply

#### 3.3.1 Requirements

The requirements for the future-state architecture are provided by the business. Currently the British Council's enterprise architecture does not include the business architecture within its scope. This means that GIS must rely on the businesses providing requirements through the normal channels. This often means that the enterprise architecture team are involved too late in the process.

It is imperative that the enterprise architecture team is involved early in the process of requirements definition to ensure that requirements are factored into the overall enterprise architecture and are part of an enterprise-wide decision making process. The team will also ensure that individual solutions are compliant with architecture principles and standards.

## 4.0 The British Council EA Benefits Model

Unless enterprise architecture leads to action, it has only academic value. A key objective of the enterprise architecture program within the British Council is to establish a set of program initiatives that will enable the Council to achieve the desired future-state.

It is therefore important to be able to identify the strategic initiatives that emerge from the enterprise architecting process and then to prioritise those initiatives based on business benefits.

It is also necessary to recognise where an initiative is a significant dependency for others and adjust the prioritisation accordingly.

### 4.1 Benefits Model Mechanics

The benefits model (Figure 3 below) is derived as follows.

1. Each domain, together with the overall enterprise architecture, is broken into a number of key initiatives; these appear across the top of the model.
2. Further analysis of the *Common Requirements Vision* has produced a set of business benefits that appear down the side of the model.
3. Each business benefit is allocated a value from one to five where one represents low importance and five represents high importance.

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<sup>1</sup> Need web link here

4. Each initiative is then scored against each benefit in terms of the impact it can have. If an initiative has low impact it is scored one if high it is scored five.
5. The *value* score is totalled for each initiative.
6. Each initiative is rated for difficulty, cost and dependency. Dependency means to what extent other initiatives depend on this one.
  - a. Difficulty: 1 = easy, 5 = hard
  - b. Cost: 1 = low, 5 = high
  - c. Dependency: 1 = has dependent, 5 = no dependents
7. An overall prioritisation rating is then calculated as follows:

$$\text{Value Score} / (\text{Difficulty} + \text{Cost} + \text{Dependency})$$

In the model in Figure 3 colour is used to depict value or prioritisation: Red = high value, Yellow = low value.

## 4.2 Refining the Model

The model is populated with an initial assessment that needs to be refined through working closely with business stakeholders. However, the ratings depicted do represent a reasonable starting point.

	Overall EA			Business		Data			Applications				Collaboration			Platform			Network			Sys Mgmt				Security											
	EA Governance	Common Architecture Approach	Global IT Standards	Business Process Standardisation	Information Sharing	Core Customer Record	Core Metadata for Managed Content	High-level Data Architecture	Master Data Management	Complete SAP Rollout	Application Standardisation	Common Application Services	Application Integration	Presence Management	Requirements Analysis for Collaboration	Shared Service Collaboration Platform	Workflow	Server Centralisation / Virtualisation	Platform Standardisation	Virtual Desktop Infrastructure	Outsourced Service Monitoring & Reporting	Standardisation of Voice Telco Provision	CRM Integration	Complete SMS Rollout	Implement Integrated Service Management Tools	Centralised Backup / Restore	Performance & Experience Monitoring	Implement Short-term Security Fixes (e.g. Patches)	Risk Assessment Framework	Security Architecture Governance	Global Security Ops & Monitoring	Security Incident Management					
<b>Prioritisation Rating</b>	24	25	27	15	19	25	18	18	16	20	21	20	15	21	22	19	18	20	16	14	23	12	14	22	13	14	14	34	29	28	14	12					
<b>Difficulty (1 = easy, 5 = difficult)</b>	4	3	3	5	3	2	3	4	3	3	2	3	3	1	2	2	2	2	2	3	1	3	2	1	3	2	2	1	2	2	3	4					
<b>Cost (1 = low, 5 = high)</b>	2	2	2	3	2	2	3	2	3	3	4	3	3	1	2	3	2	2	2	2	1	3	3	2	3	2	2	1	1	1	3	3					
<b>Dependency Factor (1 = has dependents, 5 = no dependents)</b>	1	1	1	3	2	1	2	2	3	1	1	2	3	4	1	2	3	3	3	4	3	4	4	3	3	4	4	1	1	1	2	2					
<b>Benefit</b>	<b>Importance (1 = low, 5 = high)</b>			<b>Impact (1 = low, 5 = high)</b>																																	
Increase business efficiency	5	5	3	3	5	3	4	4	4	4	5	4	5	3	4	5	5	5	1	1	2	2	3	5	2	2	3	3	1	3	2	2	2				
Reduce operational risk	3	5	4	5	4	5	3	4	4	4	5	4	3	2	2	5	5	3	4	3	3	5	3	3	4	4	5	3	5	5	5	5	5				
Faster time-to-market	3	4	5	5	5	2	3	4	3	4	4	5	5	2	2	3	2	4	4	4	5	1	3	3	4	1	1	2	1	1	1	1	1				
Flexible business relocation	3	3	5	5	5	2	1	2	3	3	4	5	3	3	5	3	3	3	5	5	5	3	5	3	4	2	3	2	1	1	1	1	1				
Flexible delivery channel support	2	3	4	5	3	4	2	3	3	3	4	3	5	5	2	1	2	4	4	2	3	1	3	4	2	2	1	2	1	1	1	1	1				
Flexible working (e.g. 3rd parties)	2	3	4	5	4	4	2	3	3	3	3	1	4	5	3	2	2	4	4	1	2	1	2	4	2	2	1	2	1	1	1	1	1				
Better access to information	4	5	5	5	2	5	5	5	5	5	4	3	5	5	4	3	3	3	3	1	1	3	3	4	1	2	1	3	1	1	1	1	1				
Improve service quality	3	4	3	4	3	5	5	5	5	5	4	3	4	3	4	3	4	5	4	3	3	5	3	4	4	5	4	5	5	5	5	5	5				
Improve scalability	3	4	3	3	4	3	4	4	3	3	4	4	4	3	4	1	3	3	5	5	5	2	5	3	4	3	3	4	2	3	3	3	2				
Reduce IT costs	5	5	5	4	5	2	1	3	3	2	2	5	3	5	5	3	3	2	5	5	5	4	3	2	5	5	4	3	5	5	5	5	5				
Strengthen compliance & security	4	5	3	5	5	5	5	5	5	5	3	3	5	2	1	2	4	4	4	3	4	5	2	2	5	5	5	3	5	5	5	5	5				
Reduce training needs	1	3	2	1	5	1	2	3	2	2	1	4	1	1	2	2	4	2	1	2	2	1	3	2	4	1	2	1	2	2	2	2	2				
<b>Value (Higher = more value)</b>	165	150	162	160	133	123	147	143	141	141	144	156	137	128	110	134	129	141	114	130	115	120	125	131	117	113	111	101	115	110	110	107					

Figure 3 - Enterprise Architecture Benefits Model

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
EA	EA Governance	24	High	Put EA governance into practice	ASAP	<ul style="list-style-type: none"> <li>IT Alignment with business goals</li> </ul>
EA	Common Architecture Approach	25	High	Use common BC architecture approach for all new programs and projects	ASAP	<ul style="list-style-type: none"> <li>Improved business and IT efficiency</li> <li>Reduced IT costs</li> </ul>
EA	Global IT Standards	27	High		ASAP	<ul style="list-style-type: none"> <li>Reduced operational risk</li> <li>Faster time-to-market</li> <li>Improved flexibility</li> <li>Reduced IT costs</li> </ul>
Data	Core Customer Record	25	High	Develop conceptual 'core' customer record	ASAP	<ul style="list-style-type: none"> <li>Provide informed design decisions</li> </ul>
Data	Core Metadata	18	High	Develop 'core' metadata for managed content	By end 2008	<ul style="list-style-type: none"> <li>Inform the consistent implementation of new content management solutions</li> </ul>
Data	As above	Same as above	High	Implement consistent metadata across content management solutions	Ongoing from end 2008	<ul style="list-style-type: none"> <li>Enable management of assets throughout their lifecycle</li> </ul>

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
Data	High-level Data Architecture	18	High	Develop High-level data architecture	Agree architecture By mid 2009  Embrace in procurement and change of existing systems from thence forward	<ul style="list-style-type: none"> <li>• Manage customers effectively through their lifecycle</li> <li>• Facilitate Master Data Management</li> </ul>
Data	Part of Application Domain, Common Application Services	See app domain	High	Implement identity management <sup>2</sup> solution for web users	By end 2009	<ul style="list-style-type: none"> <li>• Maximise knowledge and value of web user data</li> <li>• Improve customer perception of web presence</li> </ul>
Data	Master Data Management	16	High	Develop Master Data Management plan and implement	By end 2010	<ul style="list-style-type: none"> <li>• Become a vendor of unique, high quality data</li> <li>• Provide a best-in-class user experience</li> </ul>
Data	Part of Application Domain, Application Standardisation	See app domain	Medium	Reduce portfolio of applications that manage customer data <sup>3</sup>	Ongoing from mid 2008	<ul style="list-style-type: none"> <li>• Minimise the cost and complexity of Master Data Management</li> </ul>

<sup>2</sup> Part of the Application Domain, initial pilot in 2008 followed by roll-out in 2009

<sup>3</sup> This is actually part of the Application Domain simplification and standardisation initiative, but is included here as there is an impact on the data architecture

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
Application	Complete SAP rollout	20	High	Complete the FABS rollout Implement financials MI within SAP	By end 2010	<ul style="list-style-type: none"> <li>Return on SAP investment</li> <li>Increase IT and business efficiency</li> <li>Minimise operational risk</li> </ul>
Application	Application Standardisation	21	High	Simplify and standardise the application architecture, specific areas of focus: <ul style="list-style-type: none"> <li>Web Content Management<sup>4</sup></li> <li>Relationship Management</li> </ul>	Agree architecture By end 2009 Implement as driven by business cases	<ul style="list-style-type: none"> <li>Reduce procurement costs</li> <li>Improve customer experience</li> <li>Improve use of corporate data assets</li> <li>Reduced support costs</li> <li>Reduced operational risk</li> </ul>
Application	Common Application Services	20	High	Pilot common application services in 1 or 2 business areas (E&E, MCS), candidates include: <ul style="list-style-type: none"> <li>Identity Management</li> <li>Global Search</li> </ul>	Pilot By end 2008	<ul style="list-style-type: none"> <li>Maximise use of corporate data assets</li> <li>Improve customer experience</li> <li>Reduced operational risk</li> </ul>
Application	Application Integration	15	Medium	Develop integration framework and implement common application services	By end 2011	<ul style="list-style-type: none"> <li>Reduced procurement costs over time</li> <li>Reduced support costs</li> <li>Maximise use of corporate data assets</li> <li>Improve customer experience</li> <li>Reduced operational risk</li> </ul>
Collaboration	Presence Management	21	High	Implement presence management (quick win)	By end of 2008	<ul style="list-style-type: none"> <li>Reduce IT costs<sup>5</sup></li> <li>Improve service quality</li> <li>Increased business efficiency</li> </ul>

<sup>4</sup> Note that general enterprise content management (ECM) is within the Collaboration Domain, though Web Content Management should be considered a subset in architectural terms

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
Collaboration	Requirements Analysis for Collaboration	22	High	Develop functional needs for collaboration both inside and outside the enterprise	By late 2008	<ul style="list-style-type: none"> <li>• Provide informed design decisions</li> <li>• Avoid functional duplication</li> </ul>
Collaboration	As above	22	High	Develop Gap analysis from Microsoft Office SharePoint Server capabilities	By early 2009	<ul style="list-style-type: none"> <li>• Identify areas where enhancement is required or divergence allowed</li> </ul>
Collaboration	Shared Service Collaboration Platform	19	Medium	Continued development of shared service platform for internal & external collaboration	By mid 2010	<ul style="list-style-type: none"> <li>• Leverage Microsoft investment</li> <li>• Cost effective service delivery</li> <li>• Increased business efficiency</li> </ul>
Collaboration	Workflow	18	Medium	Develop workflow functional needs	By end 2009	<ul style="list-style-type: none"> <li>• Improved service quality</li> <li>• Increased business efficiency</li> </ul>
Platform	Server Centralisation / Virtualisation	20	High	Reduce number of servers (outside UK) through consolidation, virtualisation and centralisation	By early 2009	<ul style="list-style-type: none"> <li>• Reduced hardware costs</li> <li>• Reduced support cost (depends on mix of consolidation, virtualisation and centralisation)</li> <li>• Less space requirement</li> <li>• Reduced carbon footprint</li> </ul>
Platform	Platform Standardisation	16	Medium	Simplify and standardise the desktop and server configurations	By end 2009	<ul style="list-style-type: none"> <li>• Reduced support costs</li> <li>• Reduced operational risk</li> </ul>
Platform	Virtual Desktop Infrastructure	14	Medium	Deploy thin client desktops	Pilot By early 2009 Deploy by end 2010	<ul style="list-style-type: none"> <li>• Reduced hardware costs</li> <li>• Reduced support costs</li> <li>• Less space requirement</li> <li>• Reduced carbon footprint</li> </ul>
Network	Improved Service monitoring & Reporting	23	High	Improve service monitoring & reporting	ASAP <sup>6</sup>	<ul style="list-style-type: none"> <li>• Improved service quality</li> <li>• Reduced operational risk</li> </ul>

<sup>5</sup> By reducing the number of ineffective communications

<sup>6</sup> 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

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
Network	Standardisation of Voice Telco Provision	12	Medium	Standardise voice telecommunications provision	By end 2010	<ul style="list-style-type: none"> <li>• Increased flexibility</li> <li>• Improved scalability</li> </ul>
Network	CRM Integration	14	Medium	Contact Centre and CRM Integration	By end 2011	<ul style="list-style-type: none"> <li>• Improved business efficiency</li> <li>• Better access to information</li> </ul>
Systems Management	Complete SMS Rollout	22	High	Complete SMS rollout	ASAP	<ul style="list-style-type: none"> <li>• Reduced support cost</li> <li>• Improved service quality</li> <li>• Reduced operational risk</li> </ul>
Systems Management	Implement Integrated Service Management Tools	13	High	Implement standardised, integrated tools to support key ITIL processes: <ul style="list-style-type: none"> <li>• Incident management</li> <li>• Problem management</li> <li>• Service management</li> <li>• Security management</li> </ul>	By end 2010 <sup>7</sup>	<ul style="list-style-type: none"> <li>• Reduced support cost</li> <li>• Improved service quality</li> <li>• Reduced operational risk</li> <li>• Increased value from service providers</li> </ul>
Systems Management	Centralised Backup / Restore	14	Medium	Implement centralised backup and restore	By mid 2010	<ul style="list-style-type: none"> <li>• Reduced support costs</li> <li>• Reduced operational risk</li> </ul>
Systems Management	Performance & Experience Monitoring	14	Medium	Implement performance and experience monitoring	By end 2011	<ul style="list-style-type: none"> <li>• Improved service quality</li> </ul>
Security	Implement Short-term Security Fixes	34	Very High	Roll out infrastructure patches	ASAP	<ul style="list-style-type: none"> <li>• Reduced operational risk</li> </ul>

<sup>7</sup> This timeline will be driven by the Service Management function; however, this is not unrealistic in term of implementing the tools.

Domain	Domain Group	Prioritisation Rating / Benefits Score	Priority within Domain	Initiative / Project	When	Key Benefits
Security	Risk Assessment Framework	29	Very High	Establish risk assessment framework	ASAP	<ul style="list-style-type: none"> <li>• Reduced operational risk</li> <li>• Optimise IT cost</li> </ul>
Security	Security Architecture Governance	28	High	Security architecture governance	By end 2008	<ul style="list-style-type: none"> <li>• Reduce operational risk</li> <li>• Reduce procurements cost<sup>8</sup></li> <li>• Reduce support cost<sup>9</sup></li> </ul>
Security	Global Security Ops & Monitoring	14	High	Global security operations and monitoring	By mid 2009	<ul style="list-style-type: none"> <li>• Reduced operational risk</li> </ul>
Security	Security Incident Management	12	Medium	Security incident management	By mid 2010	<ul style="list-style-type: none"> <li>• Reduced operational risk</li> <li>• Reduced support cost (over time)</li> </ul>

**Table 1 - Priorities Mapped to Domains**

<sup>8</sup> It is more cost effective to factor in security early in the solution development/procurement lifecycle

<sup>9</sup> Reduce the need to implement security measure post implementation

### 4.3 Converting Initiatives to Projects

The next step is to feed the above information into the GIS Programme Portfolio Management (PPM) process to derive a number of prioritised programmes and projects.

#### 4.3.1 Linking of Principle-Derived Actions to Projects

In some cases, it may be beneficial to link some actions that have been identified from architecture principles to the above projects.

## 5.0 Strategic Roadmaps

This section summarises the domain specific strategic roadmaps. For more information, please refer to the domain specific documents.

### 5.1 Data Domain Strategic Roadmap

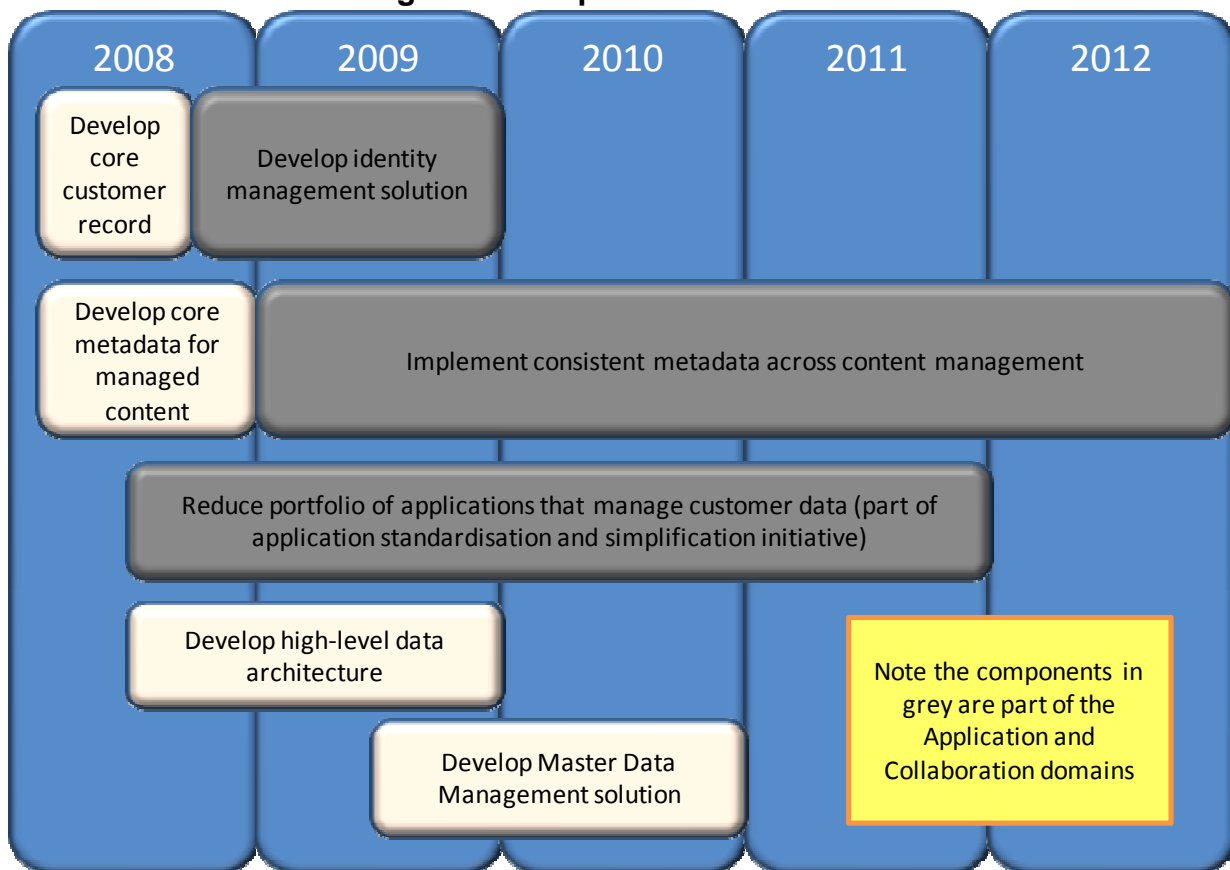


Figure 4 - Data Domain Strategic Roadmap

#### 5.1.1 Step 1 - Develop Core Customer Record

Working within one or two areas of the business, develop a simple core customer record defining the key information required to identify each customer and the important information that needs to be captured and tracked.

#### 5.1.2 Step 2 - Develop Core Metadata for Managed Content

Establish a small core set of data that will be used to ensure that consistent metadata is applied to all managed content. Suggest that this is based initially on the *Dublin Core*.

### 5.1.3 Step 3 - Develop High-level Data Architecture

Develop an overall understanding of the critical data across a significant part of the organisation. Identify and prioritise which data needs to be managed as master data.

### 5.1.4 Step 4 - Develop Master Data Management Solution

Once the high-level data architecture has been sufficiently developed and the key data items prioritised, implement the master data-management solution.

## 5.2 Application Domain Strategic Roadmap

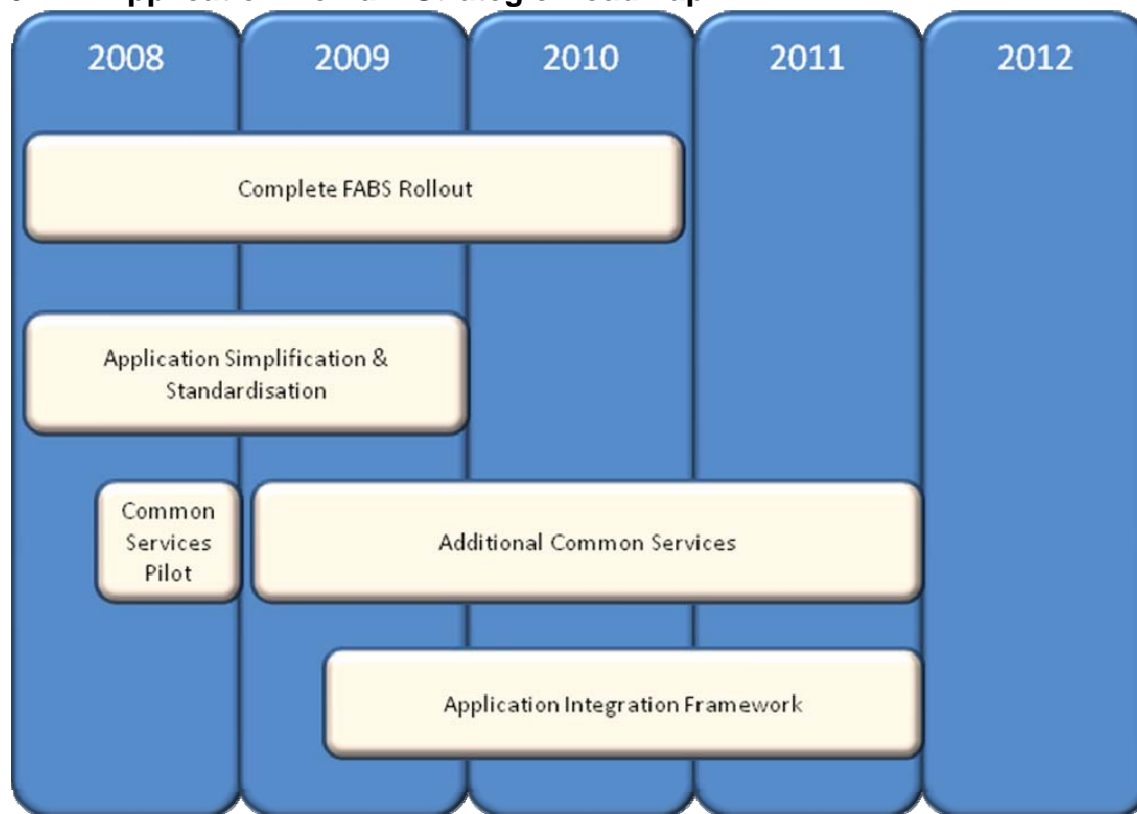


Figure 5 - Application Domain Strategic Roadmap

### 5.2.1 Step 1 - Complete FABS Rollout

The current FABS / SAP rollout, due to complete in 2010, should be completed. During this period, any impact on the SAP environment should be limited to reduce risk to the business.

### 5.2.2 Step 2 - Implement Application Simplification / Standardisation

There is currently evidence that there could be a risk of proliferation of application systems, especially in the areas of web content management and relationship management. Work with the businesses needs to take place to ensure that this does not happen in an uncontrolled manner, and that any procurement decisions are aligned to the British Council's enterprise architecture.

### 5.2.3 Step 3 - Pilot Common Services

A small number of services have been identified that are required by a number of areas within the business. These include identity management and global search capabilities. It would be beneficial to implement these as common application services – services that would be available for use by all applications.

### 5.2.4 Step 4 - Implement Lightweight Application Integration Framework

Currently the British Council does not have a formalised integration mechanism with the consequence that integration takes place in an ad-hoc manner. There will be benefits over time of implementing a formalised framework for application integration, though this can initially be very lightweight.

## 5.3 Collaboration Domain Strategic Roadmap

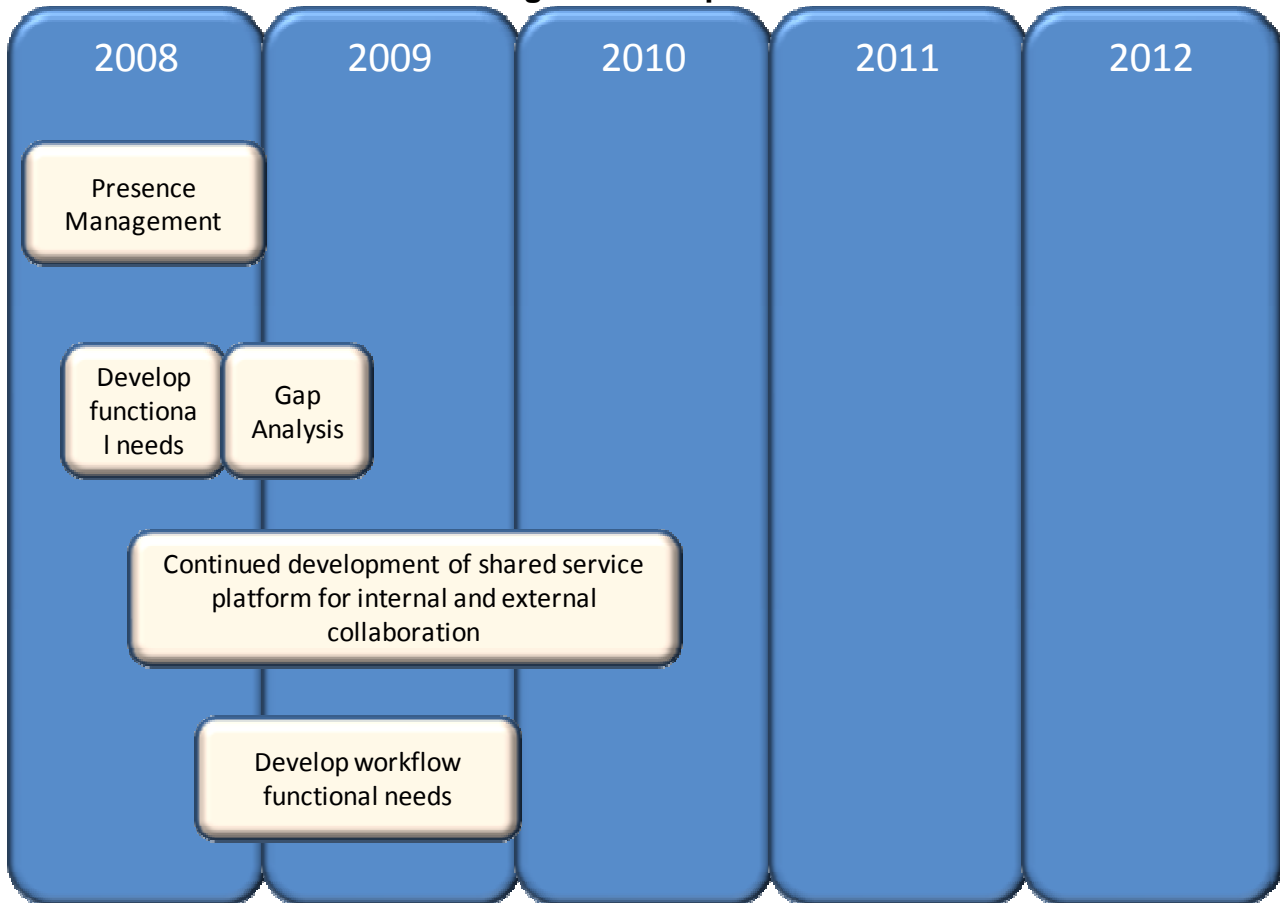


Figure 6 - Collaboration Domain Strategic Roadmap

### 5.3.1 Step 1 - Presence Management

Develop presence management solution based on using pre-existing Microsoft technology. This should be seen as a quick win activity.

### 5.3.2 Step 2 - Develop Functional Needs for Internal & External Collaboration

Establish the requirements for both internal and external collaboration, based on existing and emerging uses. This will overlap work within the application and data domains. Part of the work will be to develop the data requirements and standards, e.g. metadata, taxonomies and ontology.

### 5.3.3 Step 3 - Gap Analysis

Establish to what extent the existing MOSS solution can meet the overall collaboration requirements, and what, if any other tools would be required.

### 5.3.4 Step 4 - Continued Development of Shared Service Platform for Internal & External Collaboration

Develop the existing MOSS collaboration solution to become the global shared service platform for internal and external collaboration.

### 5.3.5 Step 5 - Develop functional workflow needs

Develop functional requirements for workflow.

## 5.4 Platform Domain Strategic Roadmap

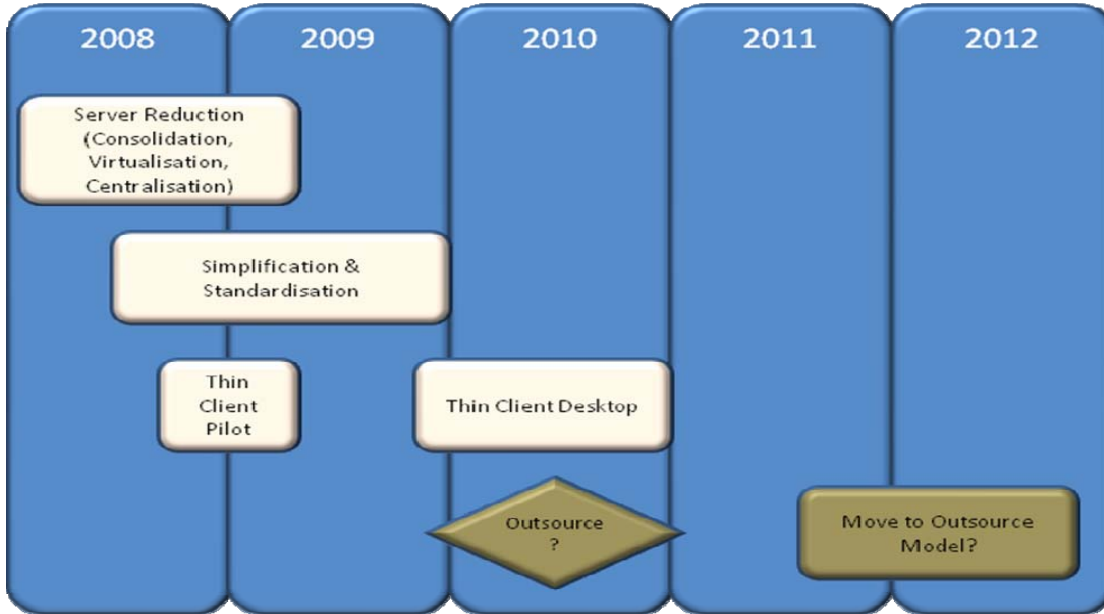


Figure 7 - Platform Domain Strategic Roadmap

### 5.4.1 Step 1 - Server Reduction

The first step is to complete the current program of server reduction.

### 5.4.2 Step 2 - Platform Simplification & Standardisation

Continue and accelerate the process of standardising the hardware and software platform. Ensure that the exceptions process is carefully managed.

### 5.4.3 Step 3 - Thin Client Desktop

Move some desktops to thin client:

- Select approach
- Select thin client technology
- Implement PoC and initial Pilot
- Full rollout

### 5.4.4 Step 4 - Full Outsource

Further investigation of the potential for full outsourcing needs to take place. In particular, it needs to be established whether there are significant cost benefits.

In any case, the three steps outlined above should still take place as this will ensure that the platform environment is in an optimum state for outsourcing (working on the principle that transform before transition is most cost effective).

## 5.5 Network Domain Strategic Roadmap

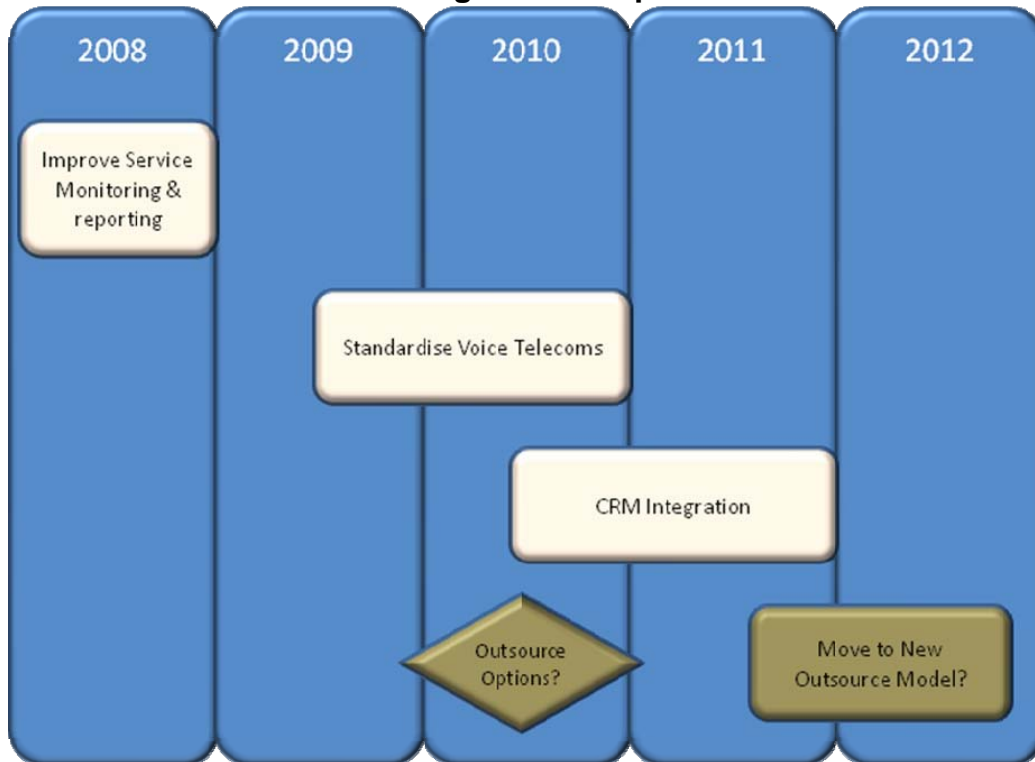


Figure 8 - Network Domain High-Level Strategic Roadmap

### 5.5.1 Step 1 - Improve Service monitoring & reporting

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

### 5.5.2 Step 2 - Standardise Voice Telecommunications

Move to a unified voice telecommunications model.

### 5.5.3 Step 3 - CRM Integration

Integrate CRM capability into the network.

## 5.6 Systems Management Domain Strategic Roadmap

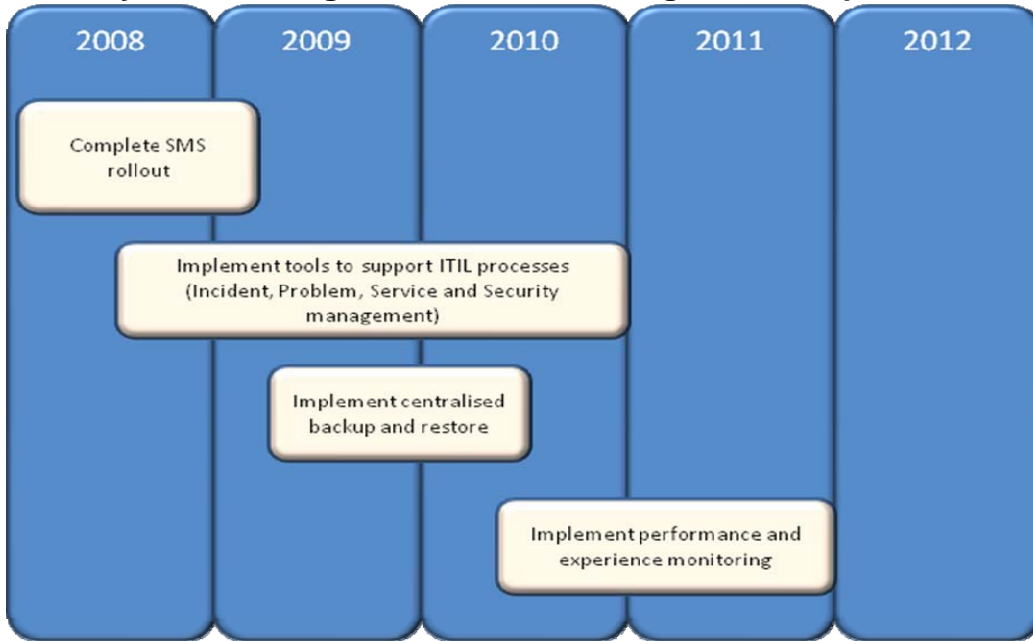


Figure 9 - Systems Management Domain High-Level Strategic Roadmap

### 5.6.1 Step 1 - Complete SMS rollout

The first step is to complete the current program of rolling out SMS.

### 5.6.2 Step 2 - Implement integrated tools to support key ITIL processes

Four key service management processes have been identified:

- Incident management
- Problem management
- Service management
- Security management

While some limited tool support exists for these processes where defined, the recommended approach is to move to an integrated service management toolset.

The priority should be:

1. Implement tools where they do not already exist, ensuring that all new tools are part of an integrated systems management toolset architecture
2. Integrate existing tools over time (or migrate to integrated tools as replacement)

### 5.6.3 Step 3 - Implement Centralised Backup and Restore

Centralised backup and restore can return significant benefits in terms of reduced operation cost and improved availability management.

Some work has already been done to develop a business cases, and this should continue.

### 5.6.4 Step 4 - Implement Performance and Experience Monitoring

In the slightly longer term, additional benefits can be realised by improving the performance and experience monitoring capabilities. Tools to support this should be synchronised with the implementation of the availability management process.

## 5.7 Security Domain Strategic Roadmap

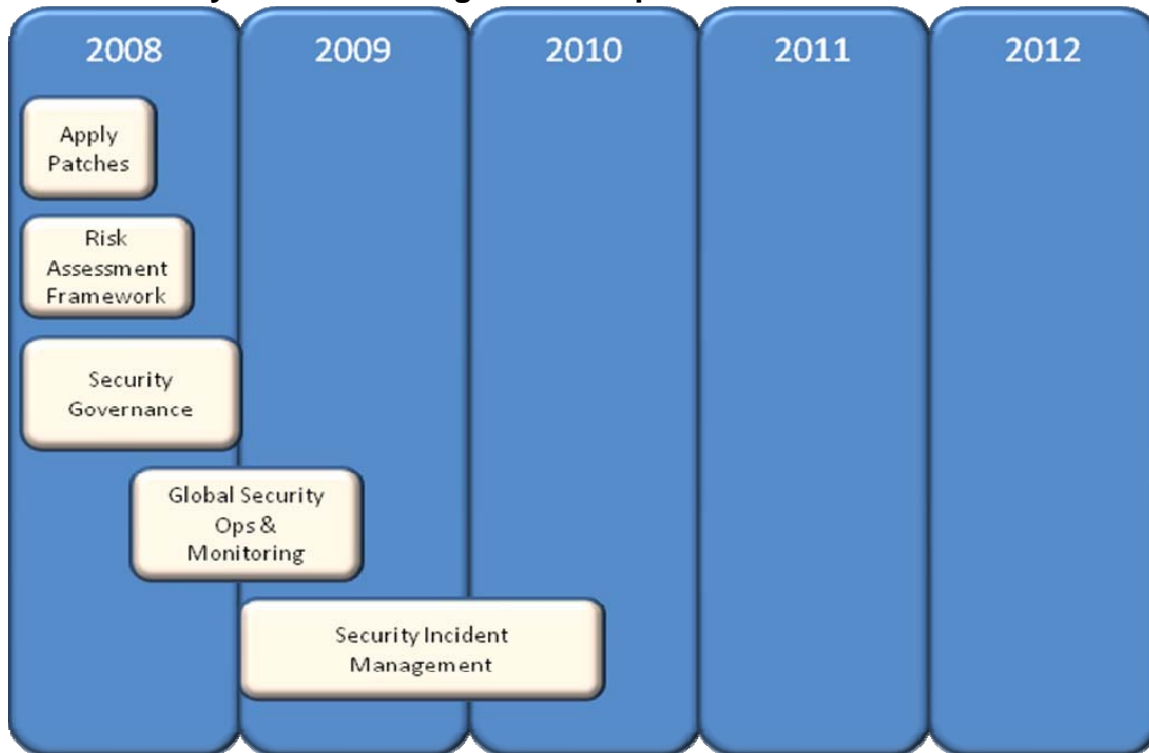


Figure 10 - Security Domain Strategic Roadmap

### 5.7.1 Step 1 - Establish Risk Assessment Framework

Provide a mechanism to assess the British Council's security requirements that can drive the business and IT security architecture.

### 5.7.2 Step 2 - Establish Security Architecture Governance

Put into action strong governance to ensure that implementation of the IT security architecture. Ensure that all new solutions are compliant with security requirements, standards and policies. Review all existing solution against the architecture and carry out remedial action where required.

### 5.7.3 Step 3 - Set up Global Security Operations & Monitoring

Set up the mechanism to monitor security so that there is a known British Council security state at all times.

### 5.7.4 Step 4 - Introduce Security Incident Management

Introduce *Security Incident Management Process*; ensure that this is done in harmony with the wider IT service management initiatives.

## 6.0 Enterprise Architecture Governance

Enterprise architecture has no value unless it is put into practice. This requires a robust approach to governance. Governance requires both stakeholder buy-in and controlling processes.

### 6.1 EA Stakeholders

Many stakeholders have an interest in enterprise architecture. These include:

- The executive board
- Business managers
- Solution users, internal and external
- IT senior management
- Business & IT program management
- Internal implementation teams
- 3<sup>rd</sup> party solution and component suppliers
- 3<sup>rd</sup> party service suppliers

### 6.2 Governance Strategy

An initial model for governance has been created. This model needs to be implemented as soon as possible. Over time as there is stronger engagement with the business, the governance model will be extended to operate beyond the IT organisation.

(The following is an extract from the *Architecture Governance V3.0* 16<sup>th</sup> November 2007)

The British Council enterprise architecture (EA) will be created, implemented, managed and evolved by a tightly integrated set of teams, each with a specific set of responsibilities. These are the teams that will be ultimately responsible for ensuring the success of the EA and all related initiatives.

#### 6.2.1 Programme Board

##### Description

The programme board is responsible for prioritisation and selection of projects and programmes to be initiated using a Project Portfolio Management approach. The composition of this board and the specific details regarding the process used is maintained by GIS Programme Management.

#### 6.2.2 Enterprise Architecture Board

##### Description

The Enterprise Architecture Board (EAB) has primary decision authority over enterprise architecture. This authority provides business context and validates the supporting architecture process results and products. For practical purposes, the authority for day-to-day architecture decision making is delegated to the Technical Architecture Community (TAC).

##### Responsibilities

The EAB is chartered with championing the EA effort and providing the British Council with EA vision and direction. This includes responsibility for the following EA tasks:

- Provide the strategic context
- Provide input to the TAC on the common requirements vision
- Approve the allocation of resources (budget, people, facilities and assets) to approved projects
- Authorise individuals and teams to approve lower-level EA deliverables
- Approve the CRV
- Deny/approve/escalate exceptions to the EA standards when escalated to the EAB
- Validate and support architecture process results and products

#### 6.2.3 GIS Strategy Manager

##### Description

The Strategy Manager is charged with adopting the annually revised EA, incorporating new or changed standards, evaluating new technologies and realigning the EA with changing business priorities. Figure 1 shows the British Council's annual architecture review process, and Figure 2 shows the British Council's architecture assurance process.

## Responsibilities

All changes to business processes, information, technology and solutions are subject to architecture assurances and approval by the Strategy Manager. This step ensures that all changes are compliant with the EA. If the changes are not compliant, petitions for exceptions go through review. In the case of an exception, the Strategy Manager may issue a waiver to approve the exception. Alternatively, it may deny the exception. The responsibilities granted to the Strategy Manager by the EAB are as follows:

- 1 Provide EA initiative recommendations to the EAB
- 2 Review TAC updates to the Common Requirements Vision, then forward approved updates to the EAB for validation
- 3 Review TAC recommended projects and then forward approved projects to the EAB
- 4 Review and approve TAC recommended architecture principle updates
- 5 Conduct yearly architecture reviews to verify compliance with all approved EA principles, models, solutions and requirements
- 6 Approve or reject requests for waivers to approved EA principles, models, solutions and requirements

## 6.2.4 Technical Architecture Community

### Description

The TAC is composed of the Technical Architects led by the Deputy Strategy Manager. The TAC is responsible for developing the architecture process and the architecture assurance process, driving the development of EA, and creating and maintaining deliverables. The extended TAC will comprise of representatives from Account Management, Programme Management, GIS Commercial Contracts, Service Management as well as strategic suppliers.

### Responsibilities

- 1 Maintain EA processes
- 2 Prepare and submit EA updates to the Strategy Manager including revisions to the CRV
- 3 Oversee development of domain architectures
- 4 Review domain architecture deliverables including principles, roadmaps and bricks; produced by Domain Teams
- 5 Submit project proposals to Strategy Manager based on gap analysis
- 6 Assist with project design issues
- 7 Train key change project staff in EA processes and compliance requirements
- 8 Conduct project reviews
- 9 Solicit resource allocations for extended TAC
- 10 Prepare and present the annual EA revisions to the EAB
- 11 Develop information, technology, business and solution architectures
- 12 To meet monthly and to maintain complete records of meetings

## 6.2.5 Domain Teams

### Description

The Technical Architecture comprises of a number of domains with each domain being led by a member of the TAC.

- Platforms Domain
- Applications Domain
- Collaboration Domain
- Network Domain
- Security Domain
- Data Domain
- System Management Domain

### Responsibilities

- 1 Develop domain architectures including deliverables; principles, patterns, and bricks
- 2 Solicit resource allocations for Domain Teams and brick custodians
- 3 Select product standards
- 4 Define technical services and infrastructure patterns

- 5 To meet monthly or more often as required, and to fully document the meetings

## 6.2.6 Suppliers

### Description

British Council's main suppliers are invited to participate in the creation of the British Council's Enterprise Architecture in collaboration with relevant Domain Teams and the wider Technical Architecture Community. This represents a major opportunity for suppliers to help the British Council deliver its strategic aims by delivering services more efficiently and effectively and suggesting new services.

### Responsibilities

- 1 Assist in the production of architecture deliverables through participation in TAC and domain teams.
- 2 Suggest opportunities for service improvements.
- 3 Feed in industry best practice into the development of the British Council's Enterprise Architecture.

### The engagement will be based upon the following principles:

- 4 An understanding that all project proposals need to be approved by the EAB before initiation and some will be rejected
- 5 Non-competitive and collaborative behaviour
- 6 Non-judgemental approach to performance, escalations or disputes
- 7 Respect for commercial in confidence information and disclosure
- 8 Decisions and activity agreed based upon best disposition (skill and expertise) and existing contracting supply arrangement
- 9 Seeking mutual benefit for all parties and a focus on customer satisfaction
- 10 Pro-active response to service requirements, preventative management and where necessary root-cause analysis
- 11 Conformance to EU procurement regulations, legal standards and assurance of Chinese wall in competitive scenarios

## 6.3 Governing Processes

### 6.3.1 EA Creation/Revision

The EA must be initially created and revised annually. The TAC will perform these tasks under the direction of the Strategy Manager and with the support and contributions of industry analysts and subject matter experts. The revision process will include:

- 1 Incorporating previously approved amendments
- 2 Incorporating new technical standards, services, information, solutions and business processes
- 3 Evolving the future-state road maps to reflect changes in business strategy

The TAC defines the architecture creation/revision process. The Strategy Manager and EAB reviews and approves the changes or sends them back for revisions. Figure 1 shows The British Council's annual architecture review process.

### 6.3.2 Architecture Approval

After each annual review, the EAB reviews and adopts the updated EA with guidance from the Strategy Manager. Any adopted information related to the EA is passed to Programme Management where it is made available to all teams. Figure 1 shows The British Council's annual architecture review process.

British Council Architecture Review Process Model

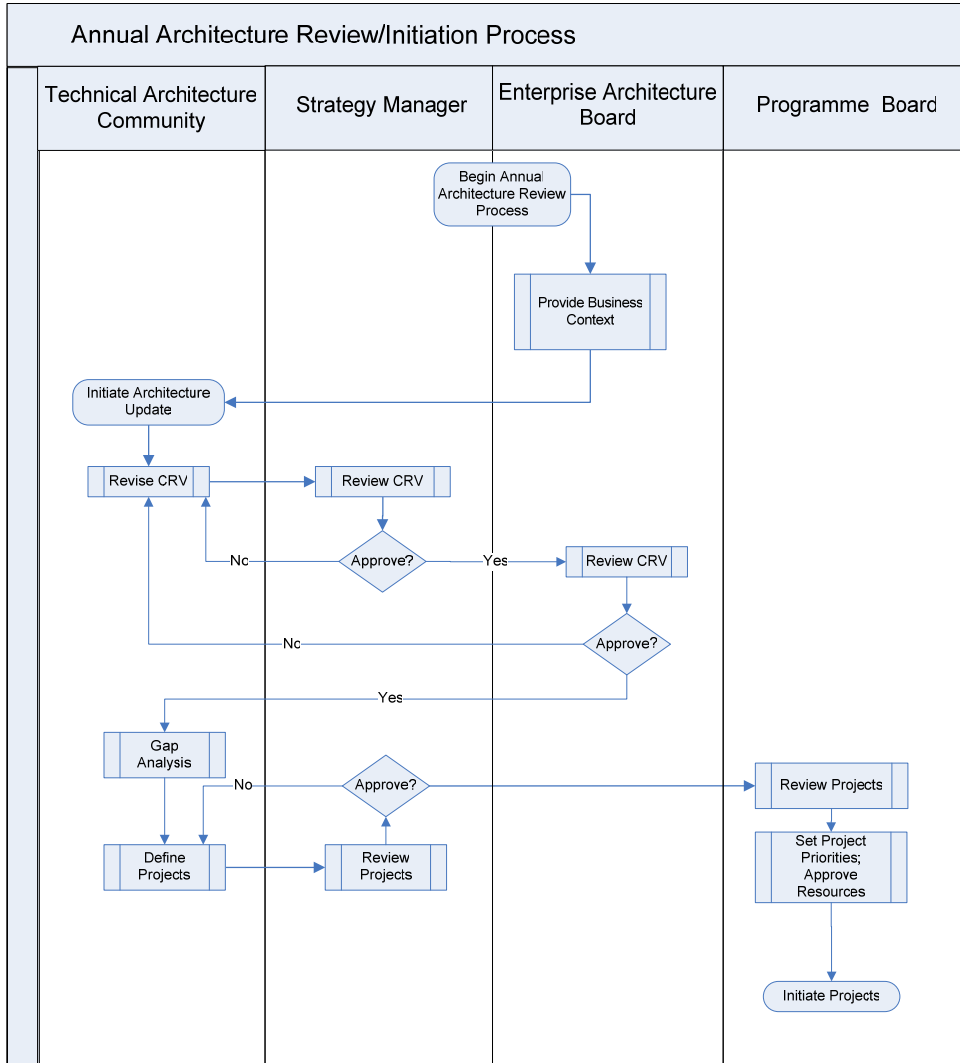


Figure 11 - Annual Architecture Review Process

### 6.3.3 Architecture Assurance

All changes to business processes, information, technology and solutions are subject to architecture assurance. This ensures that all changes are compliant with the EA. When exceptions are proposed, the Deputy Strategy Manager reviews the petition and may deny the exception or issue a waiver to approve it. Figure 2 shows The British Council's architecture assurance process.

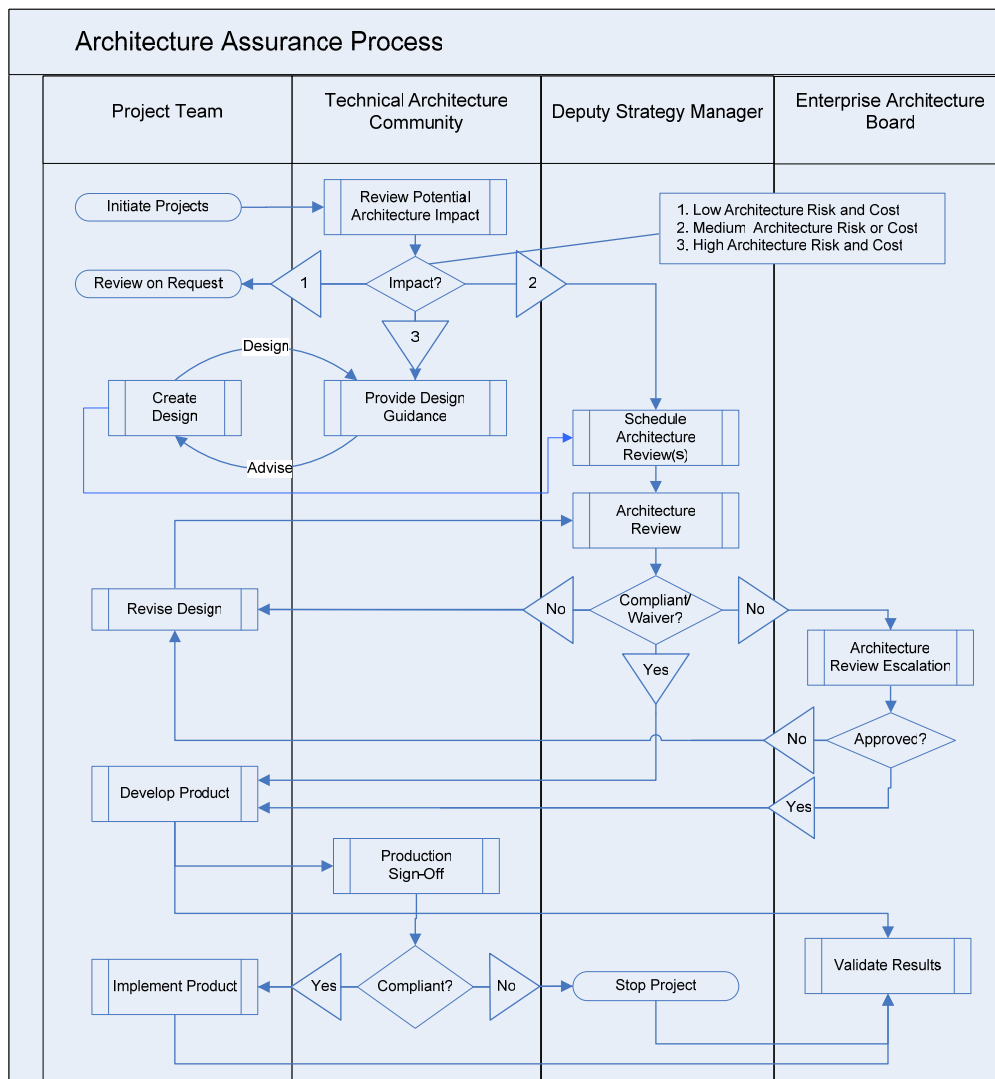


Figure 12 - Architecture Assurance Process

### 6.3.4 Architecture Assurance Appeals

If the Strategy Manager denies a project sponsor's petition for an exception, the project sponsor may appeal the decision to the EAB, which can overrule the Strategy Manager.

### 6.3.5 Design Documentation

Solution design documents must be:

- Submitted to the Technical Architecture Community prior to architecture assurance
- Proposed exceptions to the EA must be highlighted, and the business and/or technical rationale for divergence from the EA must be detailed.
- For special conditions, the Technical Architecture Community is authorised to require the solution designer to prepare additional solution design documents as the situation demands.
- The most recent approved versions of all design documentation should reside with Programme Management where they can be referenced by all teams.

## 7.0 Enterprise Architecture Structure

The Enterprise Architecture is a comprehensive framework used to manage and align an organisation's business and information technology requirements with the organisation's overall business strategy. This section examines the structure of the British Council's enterprise architecture models.

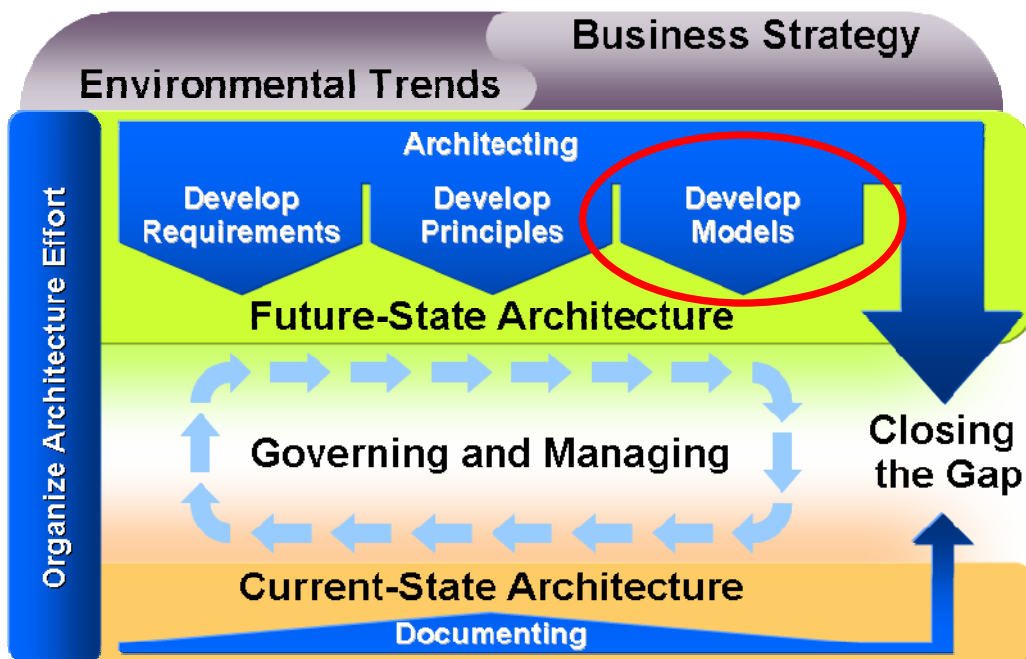


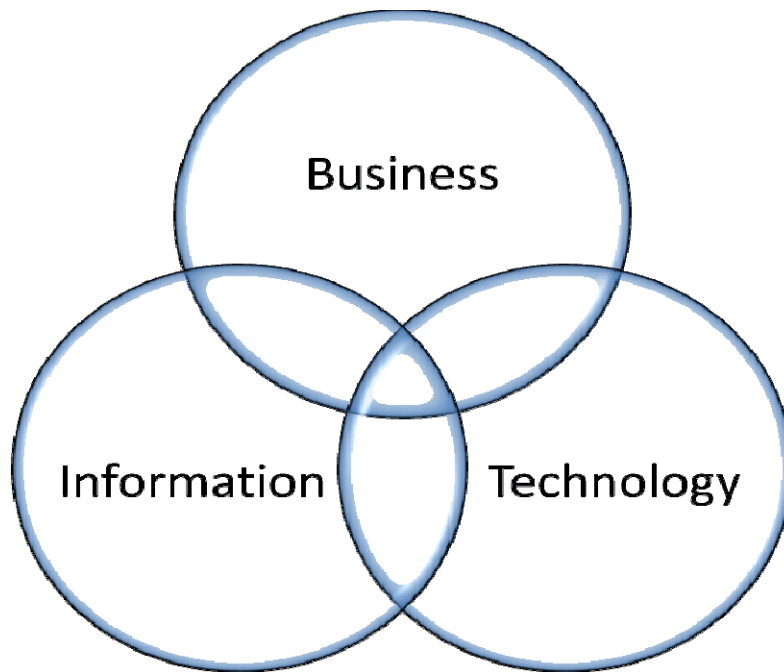
Figure 13 - British Council's Architecture Approach – Models

**Models are a means of describing, in words or pictures, the current and future state of the organisation's processes, information and information technology.**

This document focuses on the overall enterprise architecture at a high level. Each of the domains within the technical architecture is described in increasing detail within domain specific documents and associated architecture artefacts.

### 7.1 Business, Information & Technical Architectures

Enterprise architecture consists of business, information and technical architectures. To deliver maximum benefit to the business these architectures must be aligned. Solution architectures are the intersection of business, information and technical architectures, addressing a specific set of requirements.



**Figure 14 - Enterprise Architecture: Business, Information & Technology**

While we often represent enterprise architecture as a series of layers (see Figure 15 below), in practice the relationship between the layers is more complex.

There are points where the business, information and technology architectures intersect. To ensure that there is coherence across the architecture it is essential that these areas be developed in synchronisation.

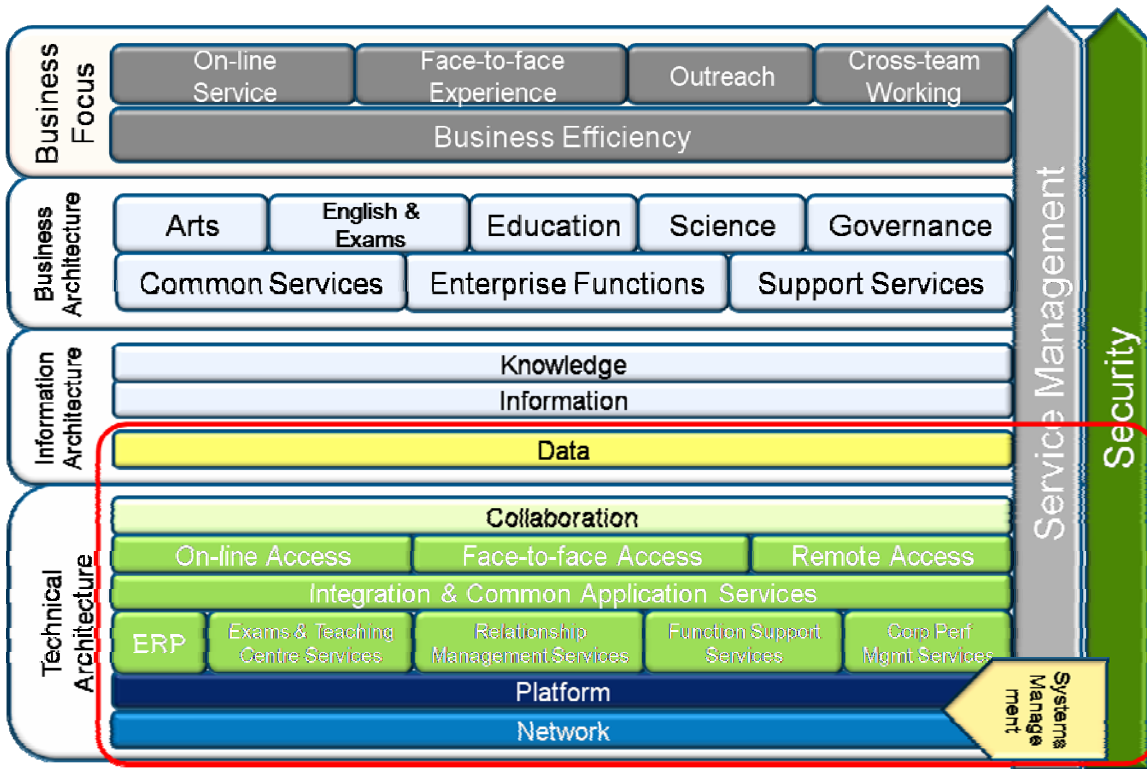
Requirements for the technical architecture come from the business and information architectures. The business and information architectures should also be cognisant of the technology architecture in order to leverage the maximum benefit through re-use and development.

Currently, only the technical architecture is in scope for the British Council's enterprise architecture. Over time, it is essential that the information and business architectures are included.

## **7.2 Top-level Enterprise Architecture Model**

Figure 15 below illustrates the top-level structure of the British Council's enterprise architecture.

The areas of 'business focus' are derived from the *Common Requirements Vision* IT requirements, though now they have been placed in a business perspective.



**Figure 15 - The British Council Enterprise Architecture model**

Over time, the enterprise architecture scope should incorporate the business architecture. The IT architecture is derived in response to the business architecture therefore; it is beneficial to consider them together. However, this will require a change to the current organisation of enterprise architecture within the British Council, potentially moving EA from GIS within IT into the business

The seven architecture domains that are currently defined in-scope are:

- Applications (Includes application integration)
- Collaboration (Includes Outlook & Exchange)
- Data (Includes information)
- Platform (Includes Operating systems and MS Office except Outlook)
- Networks
- Systems Management (Will connect to Service Management over time)
- Security (currently only covers IT security)

Each of these domains is described in significantly more detail in the domain specific roadmaps.

### 7.3 The Business Architecture

Although not currently in scope of the British Council's enterprise architecture, an understanding of the business architecture is essential because it drives the enterprise IT models, especially the applications, collaboration and data domain models.

Table 2 below is an initial attempt to model the business within BC at a very high level in order to establish the key high-level processes that are supported by IT systems.

Significantly more work needs to be done with the businesses to validate and develop this model, until such time it should be seen as a placeholder.

Sector or Service Category	Service Consumer	Service	Primary Activity	High Level Processes
Arts	Customers	Arts	Art Promotion	Registration (Event)

				Events Management
		Creative Economy		
Education	Customers	Learning	Teaching English	Registration (Course)
				Budget Planning
				Course Management
				Teaching
			Scholarships	Scholarship Management
			Counselling	Educational Counselling
		Teaching	Teacher Training	
			Accreditation	
			Teaching exchange	Exchange Management (Teaching)
		Exams	Examinations	Registration (Exam)
				Exam Management
				Examining
		International Experience	Youth Exchange	Exchange Management (Youth)
			Training Exchange	Exchange Management (Training)
		Promotion	Education Promotion	
Science	Customers	Science	Science & Technology	Accessing UK Science
			Library	Library Management
Governance	Customers	Governance		(Enterprise Function - ESS)
		Development	Development Project Management	(Enterprise Function - ESS)
English	Customers			(Enterprise Function - E&E)
Common Services	Customers	Finance	Billing	Billing / Invoicing
			Payments	Payment Processing
		Product	Product Development	Product Design
			Product Lifecycle Management	Product Service Catalogue
			Marketing	(Enterprise Function - Marketing)
Enterprise Functions (UK based)	Customers, Partners and BC	Sector Teams (Supporting fulfilment)	English and Exams (E&E)	Supporting Tools
			Education, Science & Society (ESS)	
			Arts	Finding artists and art professionals
		Partnership Teams	Commercial & Business Partnerships	Franchising
			UK Directorate (UKD)	
		Service Teams	Marketing & Customer Services (MCS)	Marketing
				Relationship Management
				Customer Service
			Contracts and Projects	Procurement
				Winning projects
				Project Management
				Governance (Society)
Support Services	BC		Global IS	Procurement
				Service Management
			Global Estates	

			Facilities Management	
			Corporate Affairs	
			Corporate Planning & Performance	
			Legal	
			Accounting	
			HR	
			Programme Support Office (PSO)	

**Table 2 - High-level Business Capability and Process Model**

Additional work has taken place in the context of the FABS program and other SAP initiatives and this work needs to be integrated into the wider enterprise architecture model.

### 7.4 Domain Models

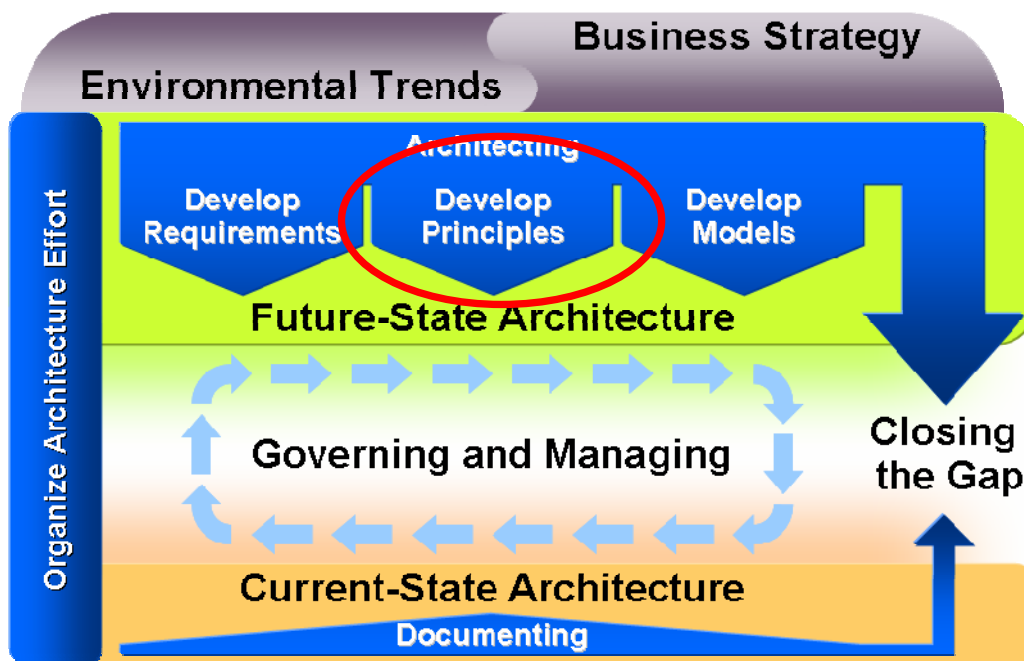
Each domain is modelled in increasing levels of detail. These models include pictures and descriptions of the domain future-state.

At the lowest level of technical detail, the components of the model are described in the form of 'bricks'.

## 8.0 British Council EA Principles – Overview of Approach

The following document defines the Architectural principles that will be used to underpin the delivery of the Enterprise Architecture.

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



**Figure 16 - British Council's Architecture Approach - Principles**

### 8.1 Objectives

The objectives of the Enterprise Architecture Principles are:

- To provide managers with the mandate to make decisions without unnecessary referral to senior managers
- To increase the effectiveness of IT governance and drive increased value from IT
- To ensure that the IT strategies and goals are in sync with those of the rest of the organisation
- To remove the need for excessive consultation and discussion when IT solutions are being developed
- To ensure standardisation across system components, interfaces and platforms

- To ensure the optimum design and interoperability of system components thus ensuring cost efficiencies and enabling the flexible deployment of systems  
To promote re-use of existing functionality across IT Domains

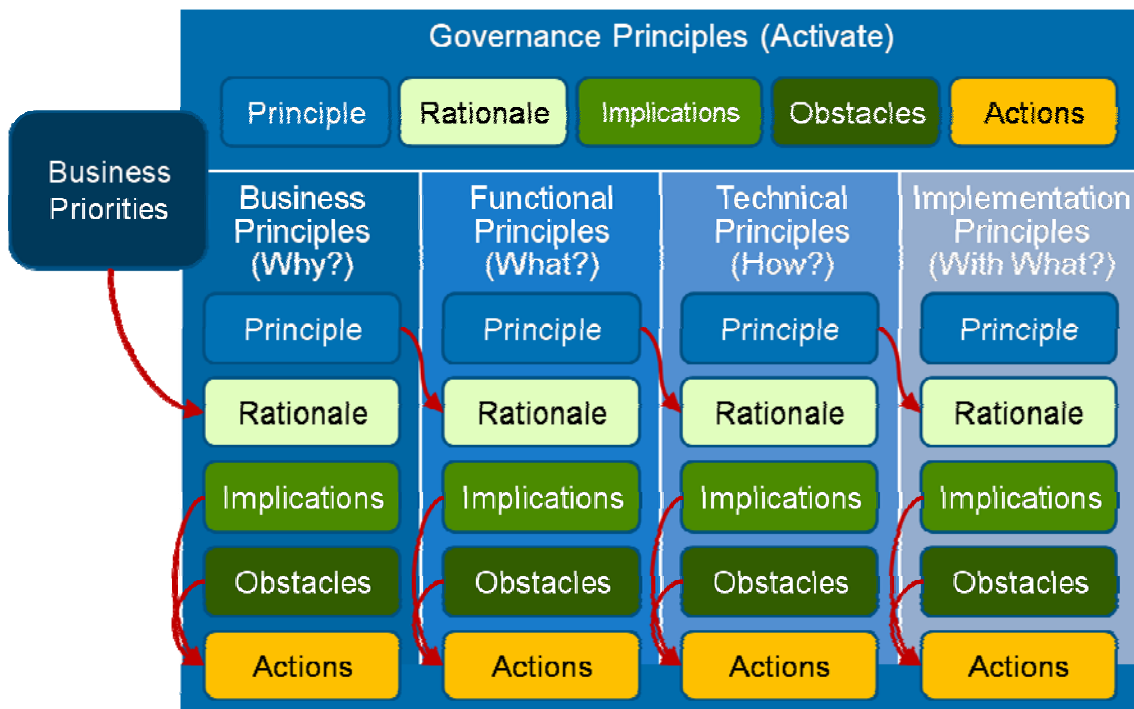
## 8.2 How Principles are organised

Principles are organised as a set of four fundamental views. A fifth view 'Governance' contains principles that define how principles in the other views are applied.

View	Primary Stakeholders	Content
Business	<ul style="list-style-type: none"> <li>➤ Business managers</li> <li>➤ System acquirer</li> <li>➤ Business analyst</li> </ul>	Business Context for the Solution: <ul style="list-style-type: none"> <li>➤ What is the motivation for the engagement?</li> <li>➤ Business drivers, goals, metrics, principles, stakeholders, value chain, business processes, environment</li> </ul>
Functional	<ul style="list-style-type: none"> <li>➤ System users</li> <li>➤ Business process designers</li> <li>➤ Information modellers</li> </ul>	What does the system do? What information does it provide? <ul style="list-style-type: none"> <li>➤ Overall view of system operation, capabilities, services, attributes, ...</li> <li>➤ Independent of technologies, products, and implementation</li> </ul>
Technical	<ul style="list-style-type: none"> <li>➤ System developers</li> <li>➤ Technology consultants</li> <li>➤ Subsystem suppliers</li> </ul>	How, in general, is the system realised with IT components? <ul style="list-style-type: none"> <li>➤ View of the applications, data, interfaces, component relationships, infrastructure</li> <li>➤ Focus on how the system attributes (e.g., performance, availability, scalability, security, evolvability, management, etc.) are achieved</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>➤ Project manager</li> <li>➤ System developers</li> <li>➤ System testers</li> <li>➤ System deployers</li> <li>➤ Operators/ Managers</li> </ul>	How, specifically, is system realised with IT components? <ul style="list-style-type: none"> <li>➤ What specific products and other components are used</li> <li>➤ In what organisation</li> <li>➤ Which processes are used</li> <li>➤ What is the execution plan (focus on staging/roll-out)</li> <li>➤ View of the existing and/or known future technical and organisational constraints</li> </ul>
Governance	<ul style="list-style-type: none"> <li>➤ Business managers</li> <li>➤ IT managers</li> <li>➤ All architecture stakeholders</li> </ul>	How, in practice are the architecture and guiding principles applied to real solutions? <ul style="list-style-type: none"> <li>➤ People involved</li> <li>➤ Governance processes</li> <li>➤ Communication</li> </ul>

**Table 3 - Architecture Views**

A view is a representation of a solution from the perspective of a related set of concerns. The architectural views, outlined below, organise all of the architectural description from the perspective of key stakeholders.



**Figure 17 - Architecture Views**

While it is possible to define views in any order, ideally it is best to proceed mostly in a top-down manner (i.e., Business, Functional, Technical then Implementation) with multiple iterations across all the views. In any case, the resultant solution description should be consistent across the views, with lower-level views motivated by and supporting the higher-level views. This layered approach enables the architecture effort to begin at the most critical level, and involves the appropriate expertise from our enterprise in addressing the priority issues.

### 8.3 Effective Principles

Good principles are clear, concise, constructive and compelling. The power of well-crafted principles lies in their role of guiding subsequent decision-making, and behaviour. Expression of the underlying ideas, thoughts and discussions, explored in their development, are in terms of:

- **Rationale:** The motivation behind a given principle. (I.e. the benefits of achieving, or the costs or consequences of not achieving, the principle). Definition of the rationale is often simply by referring to the specific driver(s), goal(s) or more-basic principle(s), which motivate the given principle.
- **Implication:** An explicit statement of the work or condition needed to achieve this principle or goal.
- **Obstacle:** A known issue, problem or constraint that may impede the achievement of this principle.
- **Action:** A specific task to address an obstacle or make progress on an implication.

Drivers, goals and principles, along with their interrelationships, provide a powerful structure for developing new solutions. Implications play an important role in this regard, in that they are a fruitful source of lower-level principles, and ultimately system features. Note also that the analysis of implications and obstacles provides a useful input into the action planning process.

Consider these two principles from two different organisations:

- *“Data is freely available to everyone within the organisation.”*
- *“Data is provided to people on a ‘need-to-know’ basis.”*

What do these Principles tell us? The organisations, to which they belong, not only have very different philosophies, but the impact of their principles means that the technical aspects of their architectures will also be very different. (The difference in aspects of security, access rights, etc, will be significant.)

## 8.4 Applying Principles Effectively

Principles only have value if they are applied. In practice this means ensuring that architecture models and solutions are created, reviewed and maintained in line with the architecture principles on an ongoing basis. Within the British Council, Enterprise architecture is organised as follows:

- Overall Enterprise Architecture – high level view across all domains
- Seven technology specific domains:
  - Data
  - Applications
  - Collaboration
  - Platform
  - Infrastructure
  - Security
  - Systems Management

It will be noted that principles in the different views are organised into different domain categories. However, within the 'Technical View' principle organisation closely follows the domain model described above. This approach ensures that there is an appropriate level of coverage across the complete enterprise architecture.

## 9.0 British Council Business Priorities

The following business priorities are taken from the *Common Requirements Vision* Version 3.0. Business Priorities are not principles in themselves, but they do provide rationale for principles.

### BP1: Contribute to Climate Security

- Description** Supporting the UK's International Strategic Priority (ISP) 6 "Climate Security"
- The international energy challenge is to maintain access to secure and affordable energy supplies while mitigating the effects of climate change. The British Council will contribute to this by promoting a faster transition to a sustainable, low carbon global economy.
- Initiatives**
- Credible global product commissioned and ready to roll out by March 2008, with strong narrative completed by October 2007
  - New partnership with DEFRA and credibility established with FCO
  - Focus on India and China and on changing young peoples' attitudes
  - Realise commitment to launch 'Low Carbon Futures' in 2008
  - Achieve project delivery by the 8 Public Diplomacy pilot countries and identify opportunities for scaling up and synergy with relevant work elsewhere

### BP2: Promote Intercultural Dialogue and Sustainable Development

- Description** Supporting ISP 1 "Safer World" and ISP 7 "Sustainable Development"
- By 2010 10,000 influential young people in the UK and a range of other countries will have the skills and relationships to take the world community into a new era of intercultural exchange and understanding.
- Initiatives**
- InterAction leadership programme extended to Jordan and Pakistan
  - Reconnect (education reform) with a focus on vocational education and on Pakistan, Saudi Arabia and Egypt
  - Bring together various school links programmes into a single coherent package
  - Achieve project delivery by the 8 PD pilot countries and identify opportunities for scaling up and synergy with relevant work elsewhere

### BP3: Support and Promote the UK's Knowledge Economy and Creativity

- Description** Supporting ISP 5 "UK Economy"
- To contribute to the innovation and creativity of the UK economy through international engagement and specifically by contributing to the development of partner countries, by strengthening the innovation and creativity of the UK economy, and by selling services directly
- Initiatives**
- Launch of Global English
  - Investment in marketing of Global English in key countries

- Achieve project delivery by the 8 PD pilot countries and identify opportunities for scaling up and synergy with relevant work elsewhere

**BP4: Removed (Support for European Neighbourhood)**

**BP5: Improve Perception and Demonstrate Value of Arts**

**Description** There is a view from our stakeholders that Arts provides poor value for money.

**Initiatives** - Improve stakeholder perceptions with development of clear narrative on, and demonstration of value of, our work in the Arts

**BP6: Increase Income Generation**

**Description** With income from Grant in Aid falling, it is imperative that the British Council maximises income from the existing income streams as well as through partners and web services to ensure that the organisation maintains a healthy level of growth.

**Initiatives** - Partnerships

New partnerships with DFID and DEFRA

Funds to be made available to develop new partnerships

- Income generation

New targets for Global English, including specific country targets

A regional strategy and targets for income generation in four priority regions, based on investment in market research and analysis

- Web services

A step change expansion of access to our work through web-based services with targets established by March 2008

**BP7: Increase Efficiency**

**Description** The British Council will reduce the costs of essential platform and assess the affordability of investment in discretionary spend which in the future must have a clear business priority and return to the businesses from the spend

**Initiatives** - Global IS Star Project.

- This will be the focus of a number of corporate initiatives

## 10.0 Enterprise Architecture Business Principles

Business principles are organised into the following business domain:

- Strategy

### Business Principle 1 - Climate Change and Environmental Policy

#### Domain: Strategy

All architectural decisions must consider any opportunities to deliver energy savings and cut our carbon footprint.

#### Rationale

Climate security is a global challenge. There is no disagreement that greenhouse gas emissions are growing and that the consensus of the scientific community is that these emissions are linked to the growing consumption of fossil fuels. The issues relating to climate change are well documented will create extreme weather conditions impacting global communities.

#### Supports Business Priorities: BP 1

#### Implications

1. The architectural roadmaps must consider the green implications of all solutions, with a view to minimising impact and where possible having a positive impact
2. All GIS business cases must consider climate change and our environmental policy

#### Obstacles

1. It may be difficult to establish the true overall impact of IT decisions on the environment since many other factors may be outside IT's control

#### Key Actions

1. The architecture team have instigated a working group to identify a series of actions to reduce environmental impact. This will become an on-going activity and will be published
2. Add climate change and environmental policy measures to all GIS business case templates

### Business Principle 2 - Business Agility

#### Domain: Strategy

We operate a business which is able to adapt quickly to changes in the market and political climate, alone or with partners.

#### Rationale

British Council operates as a business and must compete with other suppliers. This means that the Council must be able to respond rapidly to the demands of its customers and other external drivers.

The Council must also be able to react quickly to maintain stakeholder confidence.

#### Supports Business Priorities: BP 2, BP 3, BP 5, BP 6

#### Implications

1. The business organisation and its processes must be flexible and adaptable
2. Where possible we should re-use business processes, information and taxonomies
3. The IT architecture and its solutions must be able to respond rapidly to changes from the business, this means:
  - a. Simplifying, removing duplication and maximising reuse
  - b. Building solutions from components which can be combined quickly and easily to form solutions
  - c. Defining and publishing strong standards to enable the above
  - d. Implementing strong architecture governance to ensure effective implementation
4. Solutions should be configurable rather than requiring changes through development
5. Interface with partners must be standardised, re-usable and flexible

#### Obstacles

1. Legacy systems may not provide the necessary flexibility
2. Programme and project pressures and constraints may force non-compliance
3. Complexity is inherent with the spread of partners / providers which may reduce our ability to be agile

#### Key Actions

1. Create Enterprise Architecture which is flexible (e.g. works effectively where business requirements for existing solutions change over time) and adaptable (e.g. can be adapted, re-used to meet new business requirements)
2. Establish effective governance processes
3. Communicate the architecture to the key stakeholders in the business and IT

## **Business Principle 3 - Maximising Efficiency**

### **Domain: Strategy**

We are efficient in our business operations.

### **Rationale**

British Council provides a service to its customers and stakeholders. In order for our business to continue and grow, and to maintain continued funding from stakeholders we must operate efficiently.

### **Supports Business Priorities: BP 7**

### **Implications**

1. IT costs must be considered across the complete lifecycle
2. Solutions must balance costs and fitness for purpose
3. We should adopt an '80%' rule, we are not necessarily seeking a 100% fit to requirements for everything
4. Where possible solutions should be sourced as a 'service' which can flex to support changing demand from the business (only pay for what we need)

### **Obstacles**

1. Historically we have tended towards 'technical' over-specification
2. Some business partners are risk averse leading to a tendency to try to satisfy 'all' requirements

### **Key Actions**

1. Create Enterprise Architecture which is flexible and adaptable
2. Ensure that requirements are in line with the 80% rule, i.e. not over specified. We need to provide guidance on specifying requirements
3. Obtain buy-in from the business
4. Establish effective governance processes
5. Communicate the architecture to the key stakeholders in the business and IT

## **Business Principle 4 - Information as an Asset**

### **Domain: Strategy**

We view business information as an asset.

### **Rationale**

Information is often viewed as a cost and a risk. By viewing information as an asset, British Council can obtain considerable business benefit.

For example, by using existing customer data effectively, we can shape new and existing product to provide the most effective services and maximise our revenues.

### **Supports Business Priorities: BP 2, BP 3, BP 5, BP 6**

### **Implications**

1. The British Council business information model must be documented and communicated
2. Information must be consistent across the organisation
3. Information standards must be in place
4. Information must be governed and governance implemented globally
5. Information must be available where and when required
6. Tools are required to enable effective analysis of business information

### **Obstacles**

1. Information is currently held in silos

### **Key Actions**

1. Work with the business to establish benefits of moving from silo mentality
2. Define and document target information model
3. Define and publish information standards which should include standards for gathering, storing and using information as well as information formats and taxonomies
4. Establish information governance processes

## **Business Principle 5 - Security Strategy**

### **Domain: Strategy**

Information and supporting systems are designed and operated according to our security strategy.

### **Rationale**

The British Council operates as a business. It must operate securely to maintain customer and stakeholder confidence. The security strategy exists to maximise operational stability and compliance with legal and regulatory requirements. It is the starting point for, and the driving force behind, the subsequent security

policies, standards and procedures that work together to maximise the confidentiality, integrity and availability of the British Council's information and services.

**Supports Business Priorities: BP 1, BP 2, BP 3, BP 5, BP 6, BP 7**

Note: There is no specific business priority which focuses on security, however there is an assumed implication that we must comply with security requirements while supporting all BP's.

#### **Implications**

1. The security strategy must be aligned with internal business goals and external regulatory requirements
2. Security architecture must have sufficiently wide scope, and must cover for example software licensing, data compliance, movement of data
3. The IT architecture and its solutions must be implemented in line with the security strategy
4. The security strategy must encompass all aspects of the business life-cycle, from development through to operational support, governance and reporting
5. Staff need to be educated about the importance of security and what their responsibilities are

#### **Obstacles**

1. Security may be seen to restrict work flexibility so workarounds may appear
2. Currently there is a lack of awareness and possibly interest about the importance of security
3. Security strategy may prove restrictive / difficult to enforce working overseas or with partner organisations
4. US security rules about using technology in certain places prevents us from adhering to our standards in certain countries

#### **Key Actions**

1. Ensure business risk assessments are kept current
2. Establish effective governance processes
3. Ensure that the security strategy is driven by the key stakeholders in the business and IT

### **Business Principle 6 - On-line Working**

#### **Domain: Strategy**

Increase focus on-line working.

#### **Rationale**

Increasingly customers expect our services to be delivered on-line. In order to maintain and grow its market share, British Council needs to provide a class leading on-line presence.

**Supports Business Priorities: BP 2, BP 3, BP 6, BP 7**

#### **Implications**

1. Our on-line presence needs to be transformed
2. Global on-line requirements need to be defined
3. On-line services needs to connect to and integrate with many existing and future services
4. Solutions need to be flexible and adaptable because the on-line environment will continue to evolve rapidly in the foreseeable future

#### **Obstacles**

1. May be challenging to integrate some existing solutions

#### **Key Actions**

1. Develop on-line architecture
2. Develop integration architecture
3. Ensure that on-line solutions are compliant with and governed by the British Council enterprise architecture

## 11.0 Enterprise Architecture Functional Principles

Functional principles are organised into the following functional domains:

- Business capabilities
- Business process
- Information
- Collaborative Functionality
- Security

Please note that some functional principles apply to all of the above domains.

### Functional Principle 1 - Common Functionality

#### Domain: All

System design must re-use existing functionality to support products and services.

#### Rationale

Most business units share a considerable amount of common functionality. This must be understood and leveraged in future-state architectural design.

This functionality is often duplicated in different enterprise solutions, increasing costs and time-to-market, creating inconsistent customer experience and reducing quality and effectiveness.

#### Implications

1. The business must standardise business process
2. Business processes must be documented and published across the BC organisation
3. Existing solutions, available functional components and business services must be catalogued in such a fashion that makes it easier to determine their reusability, initially focussing on services which are likely to be reused frequently
4. A case may be made to build up the catalogue of reusable components and services to justify an internal build or Service Based Architecture implementation.
5. Governance processes, supported by appropriate tools must be put in place to ensure that common services and components are created, used and re-used.

#### Obstacles

1. Not all processes are owned and under the control of BC, e.g. other stakeholders or partners
2. Currently Silo'd organisation makes it difficult to identify how much common ground there is for business processes
3. FABs has already failed to get senior management commitment to significant business process change, the current appetite is for delivery
4. There is a risk of change fatigue, it becomes too hard

#### Key Actions

1. Document and publish business processes
2. Address the silo mentality
3. Identify existing services and components (focus on components which are most likely to be re-used)
4. Create and publish service catalogue
5. Specify existing catalogue capabilities in FABs/SAP and OTP
6. Establish and activate service governance processes and tools

### Functional Principle 2 - Modular Solutions

#### Domain: All

System designs are organised into re-usable functional components, separating business functionality from presentation.

#### Rationale

There is a fundamental business requirement for agile, re-usable solutions.

Separating presentation from business functionality will enable BC to modify or create channels, with minimum impact on existing services and functionality.

#### Implications

1. Solution designs should be modularised
2. Solutions must separate business functionality from presentation
3. Solution components must communicate via standard interfaces

#### Obstacles

1. Capacity (resources) to do this may be limited

### **Key Actions**

1. Define and publish BC interface standards
2. Review existing projects to ensure they are compliant
3. Ensure architecture governance processes are in place to ensure ongoing compliance

### **Functional Principle 3 - Scalability and performance**

#### **Domain: All**

Any system implementation, or modification, must be able to scale based on current understanding of business strategy and project requirements.

#### **Rationale**

Any breakpoints in a systems capability to handle transaction volumes, bandwidth, data capacity or messaging capacity should be identified and options for exceeding those breakpoints identified to ensure customer service levels are maintained.

#### **Implications**

1. A formal capacity planning process need to be embedded within the development lifecycle of all applications and services
2. We need to use technical solution to provide flexibility
3. We should implement and manage IT solutions as services

#### **Obstacles**

1. Existing systems may not be able to scale appropriately

#### **Key Actions**

1. We need to implement ITIL capacity management process
2. Ensure all solutions are reviewed to ensure they meet scalability and performance requirements

### **Functional Principle 4 - Legal and Regulatory Requirements**

#### **Domain: All**

Solutions must conform to legal, regulatory requirements.

#### **Rationale**

Non-conformance of the above may result in legal action being taken against the British Council which will both damage the reputation of the organisation and potentially result in compensation payments to regulatory bodies or disaffected personnel.

#### **Implications**

1. The architecture group need to be aware and regularly updated about new regulations which may impact the design of IT systems
2. The relevant requirements must be analysed to determine what impact they have on architecture standards
3. Standards need to be defined and published
4. Enterprise Architecture governance needs to be put in place

#### **Obstacles**

1. The global nature of the organisation may result in conflicts for compliance

#### **Key Actions**

1. Should become part of scope of the security domain group
2. Define and publish standards
3. Ensure that all solutions are reviewed to ensure compliance with standards

### **Functional Principle 5 - Confidentiality, Integrity and Availability of Data and Systems**

#### **Domain: Security**

All systems (including business and IT systems) must cooperate to protect the confidentiality, integrity and availability of data while being handled by the British Council systems, to a level commensurate with the assessed and accepted risks.

#### **Rationale**

Confidentiality, integrity and availability of systems and information are the foundations of information security.

#### **Implications**

1. Solutions must maintain the confidentiality of information at rest and in transit, at a level commensurate with the recognised risks. Examples include, but are not limited to:
  - a. the use of one-way encryption for storing user passwords and credit card information

- b. encrypting interactive network-based administrative access to systems
- 2. Solutions must maintain the integrity of information at rest and in transit, at a level commensurate with the recognised risks - this includes, but is not limited to, methods of data validation being incorporated into any solution that is capable of creating, modifying or deleting data
- 3. Solutions must maximise the availability of information and systems, at a level commensurate with the recognised risks - this includes, but is not limited to, the elimination of single points of failure for key business systems, such as billing systems and customer web portals
- 4. All solutions must be risk assessed

**Obstacles**

- 1. Existing systems and/or components might present security risks
- 2. Existing systems and/or components might not have been risk assessed
- 3. Unrealistic business expectations

**Key Actions**

- 1. Ensure that all systems (business and IT), components and information have been risk assessed
- 2. Ensure that the governance process includes regular reviews of risk assessments
- 3. Review architecture and designs to ensure that there is no single point of failure for key business systems. Include business and components within this assessment
- 4. Ensure that weak physical security does not undermine technological measures
- 5. Raise awareness that this extends to externally sourced contracts and systems and ensure that 'off-the-shelf' clauses are readily accessible for inclusion in contracts and service specification documents

**Functional Principle 6 - Security Policy**

**Domain: Security**

Security policies covering all explicit and implicit business activities must exist.

**Rationale**

Security policies, aligned to the higher-level security strategy, must exist to ensure that the British Council can comply with all business and regulatory requirements.

Examples of common policies include, but are not limited to:

- o the monitoring of email and web traffic to detect inappropriate content
- o recording of administrative users' actions
- o restricting physical and/or logical access to removable media at the desktop

**Implications**

- 1. Security policies must be available and publicised
- 2. The architecture must comply with security policies at the functional, technical and implementation levels
- 3. Governance processes must be in place to ensure that security policies are maintained and complied with

**Obstacles**

- 1. Existing systems or services may be non-compliant
- 2. It may be difficult to find out which systems are non-compliant

**Key Actions**

- 1. Ensure that existing security policies are current
- 2. Ensure that existing security policies are being applied
- 3. Ensure that the governance policy allows for the time limited and risk assessed dispensation of non-compliance to security policies.
- 4. Ensure that awareness is raised that security policies apply to all systems and services we commission whether internal or external

**Functional Principle 7 - Information Quality**

**Domain: Information**

Information must be maintained to an appropriate level of quality.

**Rationale**

Information is an asset. Inaccurate information is worse than no information at all as it is misleading.

**Implications**

- 1. Information quality standards need to be defined and published
- 2. Need to define and publish exactly what constitutes personal data

**Obstacles**

1. Lack of clarity as to what exactly constitutes personal data
2. There may be a reluctance to share data (and hence standards) across the organisation

**Key Actions**

1. Should become part of scope of the data domain group
2. Define and publish standards
3. Classify personal data
4. Ensure that all solutions are reviewed to ensure compliance with standards

**Functional Principle 8 - Business Continuity****Domain: Information**

Business systems must continue to operate at an appropriate level of service in the event of disaster or other unforeseen situation.

**Rationale**

If we cannot provide an effective level of service to our customers, we will lose their custom.

**Implications**

1. Business continuity requirements need to be defined and agreed with the business and then published
2. Business architecture must support business continuity requirements
3. IT architecture must support business continuity requirements

**Obstacles**

1. Cost may outweigh the business benefits
2. Unrealistic business expectations

**Key Actions**

1. Establish business case for continuity
2. Define and publish business continuity requirements
3. Review business architecture to ensure that is compliant
4. Review IT architecture to ensure it supports business requirements

## 12.0 Enterprise Architecture Technical Principles

These principles apply to all the technology domains within the British Council's Technical Architecture. When used in conjunction with the lower-level Technology Domain principles they provide technical decision support for managers and ensure that activities and projects are consistent in terms of planning, implementation and support.

Technical principles are organised into the following technical domains:

- Applications
- Collaboration & integration
- Data
- Platform
- Network
- System Management
- Security

Please note that the security domain does not exist in isolation but the security principles apply to all technical domains, including system management.

Also, some technical principles apply to all technical domains.

### Technical Principle 1 - Business Applications and the British Council

#### Domain: Applications

We re-use existing application functionality (including SAP) to support global business requirements where the existing solution meets all mandatory requirements i.e. it is considered "good enough".

When this is not possible the British Council will follow industry best practice and select new global business systems based on fit to business requirements and total lifecycle costs.

#### Rationale

1. The British Council can leverage its investment in SAP by utilising existing functionality to support additional business requirements - this can be done with minimal development effort utilising existing British Council staff skills
2. The British Council does not have an integration strategy or a middleware implementation to support a portfolio of solutions - this adds significant direct and in-direct costs to any non-SAP global solution and will impede business agility by increasing complexity
3. This supports the British Council's drive for application convergence and for a reduction in our platform costs
4. The British Council cannot afford "best-of-breed" applications that oftentimes come with a significant cost premium
5. The British Council as a Non-departmental Public Body must always be seen to follow UK and EU rules and regulations as well as internal policies
6. This approach will ensure that The British Council gets the best value for money for business solutions

#### Implications

1. The Architecture Group needs a good understanding of the capabilities of existing SAP functionality and the capabilities of additional modules
2. The Architecture Group needs a good understanding of the SAP technology roadmap
3. To support this strategy the British Council needs to develop an integration architecture to facilitate
4. Architecture governance needs to be involved in the decision making process because 'mandatory requirements' is open to interpretation

#### Obstacles

1. Existing system capacity
2. Limited IT capacity to understand existing capabilities - it may just be easier to pick a new system

#### Key Actions

1. The functionality of the British Council SAP system needs to be catalogued and communicated effectively in business terms
2. This principle needs to be communicated to all senior business managers
3. The Architecture Group needs to develop integration architecture
4. Architecture governance needs to be put in place

## Technical Principle 2 - Maximising Microsoft Infrastructure Benefits

### Domain: All

Solution designs maximise use of capabilities provided by the Microsoft infrastructure.

### Rationale

British Council has invested heavily in its IT infrastructure (including network, platform, collaboration, integration), and capabilities to support that infrastructure.

Leveraging the infrastructure capabilities will help to maximise return on IT investment.

### Implications

1. Infrastructure design must consider requirements across the British Council
2. We must ensure that solutions make best use of capabilities provided by the infrastructure

### Obstacles

1. Could potentially conflict with following principle (Industry Standards)

### Key Actions

1. Review the infrastructure architecture to ensure that it has considered requirements across the British Council
2. Review all solutions to ensure that they make best use of capabilities provided by the infrastructure

## Technical Principle 3 - Industry Standards

### Domain: All

The proposed architecture and constituent technologies must support open, industry standards and avoid proprietary interface protocols and Application Programming Interfaces (API's).

### Rationale

The use of industry standard interfaces will reduce development cost, integration costs and the time required to implement new functionality.

Where this is not possible all interfaces must be implemented through published API's.

A non unified approach will result in the creation of stand-alone technologies with no points of integration.

### Implications

1. Architecture Group need to create a set of patterns covering approved integration standards
2. Systems which do not conform to standards may need to be wrapped to enable integration

### Obstacles

1. Compliance of existing systems and services
2. Visibility – it may be difficult to establish which existing systems and services are compliant

### Key Actions

1. Create integration standards
2. Review existing system to identify which components may need to be wrapped
3. Develop roadmap for compliance

## Technical Principle 4 - Buy not build

### Domain: All

New functionality is met using commercial-off-the-shelf (COTS) products rather than developed using bespoke internal solutions.

### Rationale

In a mature market, it is generally the case that commercial-off-the-shelf (COTS) products will have a much greater range of functionality than internal built applications. This is because the product is built by a company specialising in the specific domain, producing the functions required both now and in the future for a large range of customers.

### Implications

1. The total cost of ownership for any system includes not only development and implementation costs, but subsequent maintenance, development and support costs which must be considered
2. Self Build needs to be considered in the following circumstances:
  - a. In a new market where commercial products do not currently exist
  - b. In-house development may be necessary to build competitive edge

### Obstacles

1. Lack of skills within the business community to specify requirements at system and service level
2. Capacity to do this
3. Culture, within some specific areas of the organisation

### **Key Actions**

1. The Technical Architecture Community should participate in all product selection processes to ensure architectural principles are being adhered to
2. Ensure that the business community are aware of the requirements for buy not build and that this is clearly communicated

### **Technical Principle 5 - Flexibility**

#### **Domain: All**

Any new requirements must be achievable through application configuration and not require additional application development.

#### **Rationale**

Application development generally requires greater effort, skills, cost and on-going maintenance than changes made through configuration.

#### **Implications**

1. Configuration changes must be subject to the same levels of rigorous change control mechanisms associated with program development
2. Configuration analysts must be fully conversant with the business processes associated with the application domain

#### **Obstacles**

1. Existing systems may not conform to this requirement

#### **Key Actions**

1. Establish change management process to ensure effective change control
2. Define and publish the business processes
3. Need to define strategy for system lifecycle management, taking account of flexibility

### **Technical Principle 6 - Non-vendor specific solutions**

#### **Domain: All**

No application or solution should dictate dependency on components from a single vendor.

#### **Rationale**

Inter-dependencies between application, hardware and operating software, database management software etc increase complexity and impede agility, as well as increasing the costs of change.

#### **Implications**

1. Architecture should be based on open standards
2. The architecture must not create interdependencies between layers (no tight-coupling) - the lack of inter-dependencies will allow layers of the architecture to be replaced independently of the other services

#### **Obstacles**

1. May be difficult to persuade users to give up their old systems

#### **Key Actions**

1. Ensure that the architecture (enterprise and solution level) is based on open standards
2. Ensure that the architecture and solutions does not introduce tight-coupling between components

### **Technical Principle 7 - Security Standards**

#### **Domain: Security**

Security standards must exist for all technologies used in the architecture

#### **Rationale**

Security standards are specifications for how a particular technology is to be configured and deployed. All technologies specified by the architecture must be risk assessed to ensure that they can be implemented and operated without introducing unacceptable risk.

Examples of security standards include:

- Operating system hardening (typically one standard per OS version)
- MS Exchange configuration
- Email client configuration

- Remote access tools e.g. CITRIX, Terminal Services, SSH
- Database configuration
- Web server configuration

#### **Implications**

1. Changes in individual technologies must be tracked and the accompanying security standards updated
2. Governance processes must include the auditing of systems against the security standards
3. Change management processes must include checks against applicable security standards

#### **Obstacles**

1. The architecture might require technologies for which British Council security standards do not yet exist

#### **Key Actions**

1. Ensure that the governance process allows for the timely risk assessment of new or changed technologies
2. Ensure that the governance process allows for the time limited and risk assessed dispensation of compliance with security standards
3. Maintain a list of “approved” and/or “recommended” security-assessed technologies to simplify architectural decisions

### **Technical Principle 8 - Common data model**

#### **Domain: Data**

All data stored in systems, and exchanged between components in systems must be mapped to the enterprise wide logical data model.

#### **Rationale**

An Enterprise Data Model is an integrated view of the data produced and consumed across an entire organisation. This high level model should be mapped to the physical implementation of data across all systems. This standard approach will assist in the identification of duplicate data across the enterprise, allow common naming standards and descriptions to be defined for each data entity and provide the basic building block for the generation of business intelligence.

#### **Implications**

1. A comprehensive entity-relationship data model will need to be developed and maintained
2. Data definitions or metadata covering key data entities need to be produced
3. The Enterprise Data Model (EDM) needs to be created

#### **Obstacles**

1. Capacity and competency
2. Sign-off from the business

#### **Key Actions**

1. Architecture Group to identify a single department and identify, define and describe agreed data entities

### **Technical Principle 9 - Data duplication**

#### **Domain: Data**

The duplication of data across systems must be avoided.

#### **Rationale**

Duplication of data across systems results in increased development and integration effort and complexity to ensure data integrity. Unnecessary duplication may result in the development of additional interfaces or may provide different interpretations of standard reports used within the business.

#### **Implications**

1. Data ownership within the business must be clearly identified
2. Data must be mastered in one place
3. Standardised mechanisms must be provided to enable data consumers to access data

#### **Obstacles**

1. Capacity and competency
2. Culture, may be difficult to persuade current data owners to give up ownership

#### **Key Actions**

1. Agree data ownership
2. Evolve Enterprise Data Model ensuring that data is mastered in only one place in a way that delivers incremental business benefits
3. Create data access architecture providing standard enterprise-wide data access mechanisms

### **Technical Principle 10 - Solution Characteristics**

#### **Domain: All**

All application solutions must be designed to provide the levels of service specified by the business (resilience, availability, etc.).

#### **Rationale**

Over as well as under engineering of resilience capability can be equally undesirable. In the one instance the degree of resilience may not meet business requirements with potential impact upon the quality of service, while alternatively; over-engineering results in additional unnecessary costs which may never be recovered.

#### **Implications**

1. Business owners must define expected levels of service for their applications and services from which the overall system design can be created
2. Need to define levels of resilience, availability, performance, usability etc.

#### **Obstacles**

1. Lack of understanding of criteria to be used when making business decisions

#### **Key Actions**

1. Create guidelines for making business decisions
2. Define levels of resilience, availability, performance, usability etc.

### **Technical Principle 11 - Systems Management**

#### **Domain: Systems Management**

All systems must be designed to be managed remotely via electronic interfaces.

#### **Rationale**

Systems Management capability will provide the operations and application support groups with information pro-actively which will identify faults and potential areas of concern within the environment. This will allow problems to be identified and fixed more readily and allow pro-active application and system maintenance to be performed before system services become impacted.

#### **Implications**

1. As a minimum the system should provide:
  - a. Configuration Management of platform and application.
  - b. Fault/alarm Management
  - c. Performance Management

#### **Obstacles**

1. Currently the service management processes required to drive these functions are not fully in place

#### **Key Actions**

1. Ensure that systems management requirements are designed into all solutions (both at the platform and application level)
2. Establish the service management processes to utilise remote system management

## 13.0 Enterprise Architecture Implementation Principles

Implementation principles are organised into the following implementation domains:

- Sourcing

Please note some implementation principles apply to all implementation domains.

### Implementation Principle 1 - Health & Safety

#### Domain: All

Solutions and services must conform to safety conditions.

#### Rationale

Non-conformance of the above may result in legal action being taken against the British Council which will both damage the reputation of the organisation and potentially result in compensation payments to regulatory bodies or disaffected personnel.

#### Implications

1. The architecture group need to be aware and regularly updated about new regulations which may impact the design of IT systems

#### Obstacles

No obstacles identified.

#### Key Actions

1. Create guidelines for health and safety conformance for solutions and services

### Implementation Principle 2 - Strategic Suppliers and the British Council

#### Domain: Sourcing

The British Council use incumbent strategic suppliers<sup>10</sup> to develop and provide new technical solution or services.

#### Rationale

The British Council can leverage our Strategic suppliers UK and global presence to maximise investment costs through their supplier procurement alliances.

The British Council can leverage supplier consultative resource to develop technical and service solutions.

This approach will ensure that The British Council gets the best value for money.

#### Implications

1. Strategic suppliers must ensure that all proposed solutions are aligned with the British Council architecture principles and standards
2. The Technical Architecture Group reserves the right to review any proposed solution to ensure overall conformance to standards and alignment across architectural domains and to ensure that any inter-domain dependencies are taken into account
3. Strategic suppliers must attend and participate in regular Domain meetings which will provide the forum for the discussion of new and strategic requirements
4. Strategic partners should ensure that there is a collaborative approach to technology solution selection for service provision
5. Strategic suppliers will provide the single interface into the British Council for the provision and on-going support for new services. Strategic suppliers will directly manage relationships with any other suppliers of the service
6. When strategic suppliers are not able to provide proposals the British Council will follow industry best practice and select a technology solutions based on fit to business requirements and total lifecycle costs

#### Obstacles

1. Capacity, both in terms of specifying provision and change management

#### Key Actions

1. Ensure that business and IT is aware of this requirements
2. The Domain Architects will need to work more closely with strategic suppliers to ensure service requirements are understood and met
3. Regular Domain architecture meetings will be arranged to provide the discussion forums for all new and strategic requirements

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<sup>10</sup> LCMG, HP, Global Crossing

4. All proposals, where possible, will be provided in terms of both a service charge (e.g. cost per user), and a standard capital and operating cost

### **Implementation Principle 3 - Provision of Services**

#### **Domain: Sourcing**

The preferred option is to buy new services rather than technology solutions.

#### **Rationale**

The British Council can focus upon building service level agreements with strategic suppliers to ensure customer requirements are being addressed, rather than focus upon the technology solution.

This approach will ensure that The British Council gets the best value for money.

#### **Implications**

1. Strategic suppliers must ensure that all proposed services are aligned with the British Council architecture principles and standards
2. When strategic suppliers are not able to provide proposals the British Council will follow industry best practice and select a technology solutions based on fit to business requirements and total lifecycle costs

#### **Obstacles**

1. Capacity for service specification is limited

#### **Key Actions**

1. The Domain Architects will need to work more closely with strategic suppliers to ensure service requirements are understood and met
2. Regular Domain architecture meetings will be arranged to provide the discussion forums for all new and strategic requirements
3. All proposals, where possible, will be provided in terms of both a service charge (e.g. cost per user), and a standard capital and operating cost

## 14.0 Enterprise Architecture Governance Principles

These principles apply to all IS decision making within the British Council.

### Governance Principle 1 - Enterprise architecture is business driven

The Enterprise Architecture process must be driven by specific business imperatives.

#### Rationale

To ensure complete alignment with the British Council Business Strategy and approved Common Requirements Vision across the Enterprise.

#### Implications

1. The Architecture Group needs to have an understanding of the overall organisational model, high level business processes and information requirements
2. The technology recommendations and roadmap must be able to be directly linked to specific business drivers
3. The architecture must be aligned to the overall IT strategy

#### Obstacles

1. Translating high level business requirements into low level IT specifics

#### Key Actions

1. The Architecture Group need to have direct communication channels with all areas of the business
2. Create business benefits matrix
3. Ensure that the architecture (principles, models, standards) is aligned to the IT strategy

### Governance Principle 2 - Architectural values are to be publicised

The Enterprise Architecture must be publicised across all business and technology units.

#### Rationale

It is important that the enterprise architecture values are signed off by senior management and publicised to all technology and line of business staff.

The decree must cover major technology positions that are no longer open for discussion.

#### Implications

1. Agreement of the architecture values will ensure that programmes of work can progress more rapidly, support cross domain requirements and eliminate silos of functionality

#### Obstacles

1. Possible resistance from the business and delivery projects

#### Key Actions

1. Communications plan needs to be produced by the architecture team.

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

The overall Architecture to support the business must include the requirements for all organisational and business units within the enterprise.

#### Rationale

The success or failure of the enterprise architecture process is dependent upon the co-operative efforts of all business and technology units across the entire organisation. A common approach will ensure more re-use of technology, ease of integration across domains and lower costs.

#### Implications

1. Within British Council a number of disparate groups exist responsible for the end to end architecture i.e. Global IS, FABS, web teams, these teams must start to work together to ensure that solutions conform to a single consistent enterprise architecture
2. British Council's enterprise architecture must take account of requirements across the whole business
3. The enterprise architecture roadmap must take account of current, short term and long term requirements, influences and opportunities, covering business and technology
4. A non unified approach will result in the creation of islands of non-standard technology and duplication of effort and functionality which may prove difficult to integrate in the future, therefore strong governance is required to ensure that solutions conform to the unified architecture

5. The effectiveness of the architecture governance processes should be reviewed with the business owners on an ongoing basis

**Obstacles**

1. There may be an unwillingness to share information across the organisation
2. Systems provided by external bodies that we have to use on their behalf are frequently not compliant with our architecture

**Key Actions**

- Create and facilitate an enterprise wide architecture community which must include both business and IT stakeholders. Partners and suppliers should also be included in the community
- Define enterprise architecture with a complete enterprise-wide view of business requirements (time scale for end state?)
- Create architecture roadmap incorporating current, short and long term views
- Activate and complete architecture governance process
- Review effectiveness of governance process with business owners
- Implement exception management process for non-compliant 3<sup>rd</sup> party systems and solutions