IBM

Doing the right things right

Enterprise Architecture for UK Government Organisations

Contents

This paper on Enterprise Architecture is the first in a series specifically focusing on IT in the UK Public Sector. They provide a strategic view from a technical perspective, drawing from the experiences and issues of IBM clients in the Public Sector. The papers address common problems and describe relevant technologies and techniques for effective delivery of IT to the Public Sector.

Doing the right things right

"The leading edge of the new service economy that has emerged is much slicker, more immediate, more convenient to the citizen and less intrusive on the busy citizen's time. The focus is increasingly on the totality of the relationship with the citizen."

'Sir David Varney's review on Service Transformation', 2006

The transformation of the UK public sector continues apace. In the wake of the publication of the Transformational Government paper[1] and Sir David Varney's review on Service Transformation[2], there has been a change in the climate. Public service delivery in all its aspects – its convenience, speed and efficiency – is top of the agenda. Until recently, IT was a subject from which politicians would regularly run away. Now it is widely understood that IT is pivotal: the objectives that the government has set for the quality of public services cannot be achieved without professional people and the successful deployment of technology.

There is little doubt as to the scale and complexity of the task. Government departments help vast numbers of people, process massive amounts of information and manage millions of transactions every day of every week. The increasing use of IT in society is creating a larger number of stakeholders, all of whom test systems and processes in unforeseen and unplanned ways – thus identifying gaps in existing business processes. They all add their particular requirements. This is leading to the pressure for more joined up government. Citizens want to have single points of contact with government to meet a range of their needs; businesses want to provide information only once to government.

Yet these objectives must also be achieved despite a constant pressure to contain and reduce costs. Better public services for citizens and businesses have to be delivered at a lower cost to the taxpayer. This leads to the need for greater asset re-use, which not only reduces costs but also helps to create more robust and predictable systems.

In order to realise these goals, transformation is not just desirable but essential: the provision of such shared services designed around the needs of the citizen or business will yield efficiency savings by reducing duplication across the public sector. This is the public service aspiration for Government.

[1] *http://www.cio.gov.uk/documents/pdf/transgov/transgov-strategy.pdf*
[2] *http://www.hm-treasury.gov.uk/media/53D/F2/pbr06_varney_review.pdf*

The Transformational Government paper set out a strategy that was based on three key transformations.

"First, services enabled by IT must be designed around the citizen or business, rather than the provider, and provided through modern, co-ordinated delivery channels. This will improve the customer experience, achieve better policy outcomes, reduce paperwork burdens and improve efficiency by reducing the duplication and routine processing, leveraging delivery capacity and streamlining processes."

This will drive understanding of where common processes are needed and where better business linkages are required, resulting in improved service.

"Second, Government must move to a shared services culture – in the front office, in the back office, in information and in infrastructure – and release efficiencies, by standardisation, simplification and sharing."

This focus will identify those assets that are ripe for re-use within the organisation.

"There must be a broadening and deepening of government's professionalism in terms of the planning, delivery, management, skills and governance of IT-enabled change. This will result in more successful outcomes; fewer costly delivery failures; and increased confidence by citizens and politicians in the delivery of change by the public services."

This rightly identifies the capability required to deliver on the first two objectives.

> *"Although Enterprise Architecture is a noun it should really be a verb. It is what an organisation does every day"*

The strategy is sound and clearly understood. However, as Sir David Varney's review on Service Transformation and Transformational Government Strategy made clear, this will be a major challenge. It is going to be hard work that will take a long time. Progress needs to be deeper and faster. As Sir David Varney put it: "fundamental and widespread change is necessary if the public sector service economy is to match the performance of the best service providers."

Central to meeting this challenge is the use of Enterprise Architecture (EA). Although EA is a noun – something an organisation has - it should really be a verb. It is what an organisation does every day - planning and managing change, bringing together business, information and technology to create a blueprint that conveys how resources should work together to effectively support the fulfilment of strategic business objectives.

EA has also been likened to the building of a city. A strategy defines the city's purpose and goals; the EA is the city plan to achieve those goals; and the system design describes the things that have to be built (e.g the buildings) to deliver those goals.
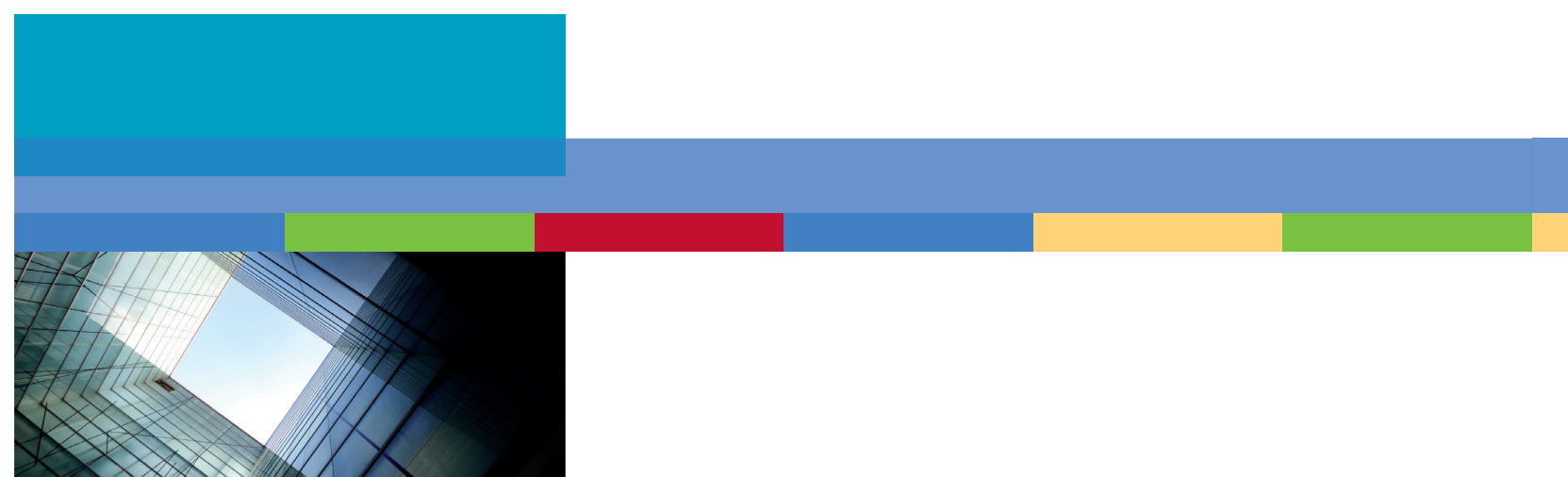
Let the building begin

"Enterprise Architecture has been likened to the building of a city."

The good news is that a strong start has been made.

At the top level of government, a cross-government EA (the so-called xGEA Reference Model) is beginning to drive more re-use of assets. It is starting to drive the need for common techniques and methods. A common language is emerging, creating processes for sharing and working across government. Above all, a desire to achieve the broad strategic goals is being transmitted.

However, for the momentum to be maintained, the focus now needs to include the many agencies and programmes within government departments. If the first step has been top down, the next step must be bottom up. The desire to work across the silos of government must be transmitted throughout each agency and programme. Organisations now need the management processes to identify assets in the common language that has been defined at the top.

It is clear that all government departments, agencies and programmes must adopt the EA approach. An EA approach at these levels, focusing on asset re-use and inter-operability, can be applied initially in the individual organisation before being shared with the wider community of government. This will result in the development of a portfolio of assets that will need to be supported by technical standards, management techniques, software and tools and, finally, their detailed description in a common language.

> *"The desire to work across the silos of government must be transmitted throughout each agency and programme."*

The analogy of the city is a useful one for EA. However, in the context of government transformation, one key factor must be recognised. The range and scope of government activity means that there cannot be one all-encompassing EA for the whole of government. The xGEA – a light-touch pan-government view – provides a pragmatic approach. It recognises that government is, in essence, an enterprise of enterprises. At the highest level, the entity is described and perceived as a single government but each of its departments have their own "languages" – for example, the Department for Work and Pensions (DWP) has jobs and pensions languages and HM Revenue & Customs has tax and customs languages among others.

Enterprise Architecture means different things to different groups

Due to the differences between strategy and day-to-day delivery of programmes and projects, gaps inevitably are created. These gaps can be termed as the "upstream/downstream divide."
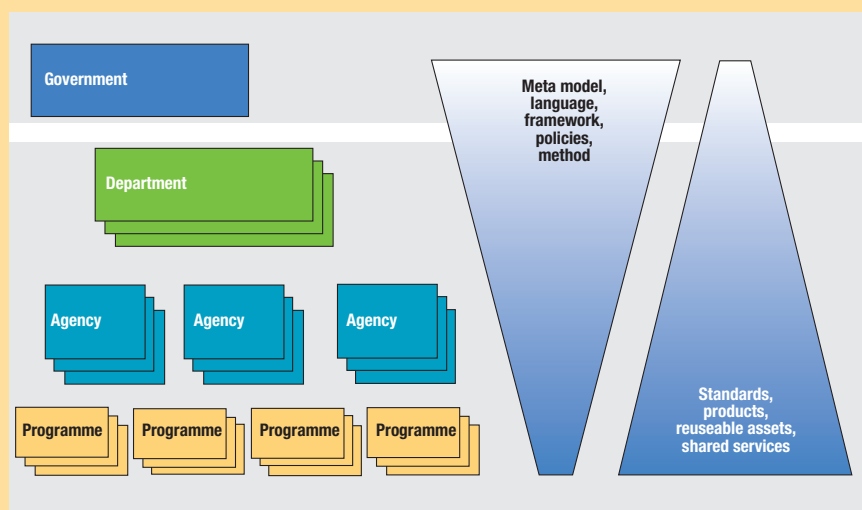
◄**Upstream: doing the right things**
Identifying, funding and resourcing the most important programmes, in line with the business strategy and within budget, in the right sequence, and with effective programme management and control.

◄**Downstream: doing things right**
Ensuring the solutions delivered by these programmes meet the needs of the business, work within the existing IT environment and contribute towards the realisation of the IT strategy.

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What do we think Enterprise Architecture is?

An Enterprise Architecture is the only means by which a truly holistic approach can be taken. While the xGEA is a positive step, departments now need to engage and focus on EA for it to work. Without an EA, Government departments are destined to continue to operate in stovepipes, speaking their own languages and observing their own particular methods. The control process of an EA will ensure that transformation remains a shared journey of incremental change, rather than a piecemeal progress of incompatible steps.

The goal of EA is to govern and manage all of the decisions and actions that drive alignment of a department's business operations with its business goals and strategies *(see chart below)*. It does this by separating out different issues; what types of assets and resources exist that can be changed (roles, processes, systems, technology, etc); how those assets and resources are combined and leveraged, at any point in time, to deliver the business capabilities; and the on-going cycle of assessing, planning and delivering change, to the assets and resources and how they are combined, leveraged and operated.
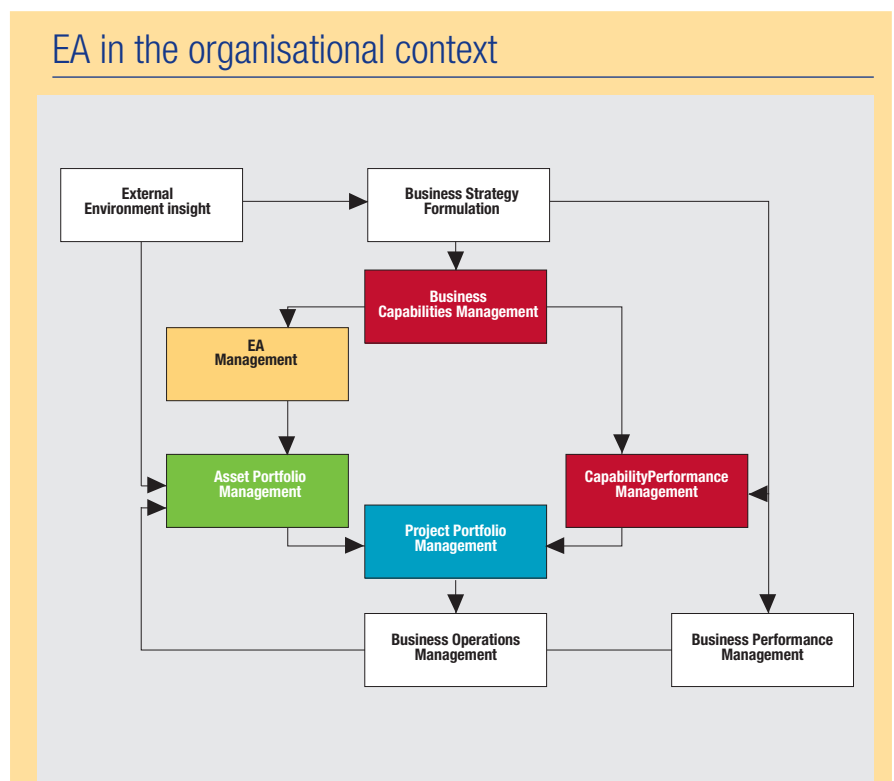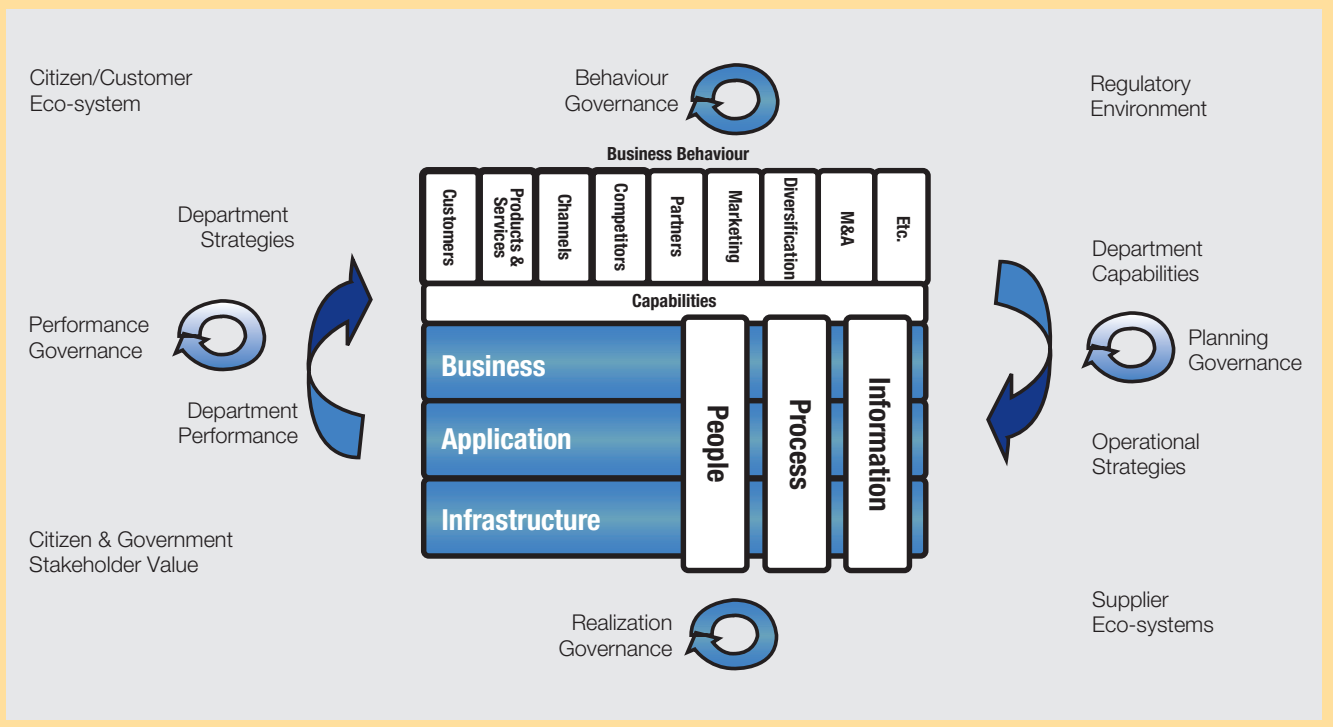
EA in the organisational context

However, the EA must also understand the wider ecosystems in which the department and its policies operate – and which will affect them *(see chart below)*. This means consideration of the rights of citizens, the observation of laws and regulations and the real capability of the supplier base to deliver and operate the solutions. Only by integrating these external pressures and issues into the framework – by obtaining and measuring the big picture - can the EA help to transform government.

The effectiveness of such policies must be monitored and governed. A department has to know how well it is implementing the policy. Is it delivering the benefits that it was intended to deliver? Is it allocating the required resources and people to that delivery? Is the outcome right? In order to achieve this, it is important to have a broader framework.

EA in the wider ecosystem

Citizen/Customer
Eco-system

Behaviour
Governance

Regulatory
Environment

Department
Strategies

Business Behaviour

| Customers | Products & Services | Channels | Competitors | Partners | Marketing | Diversification | M&A | Etc. |

Capabilities

Business

Application

Infrastructure

People

Process

Information

Department
Capabilities

Performance
Governance

Planning
Governance

Department
Performance

Operational
Strategies

Citizen & Government
Stakeholder Value

Realization
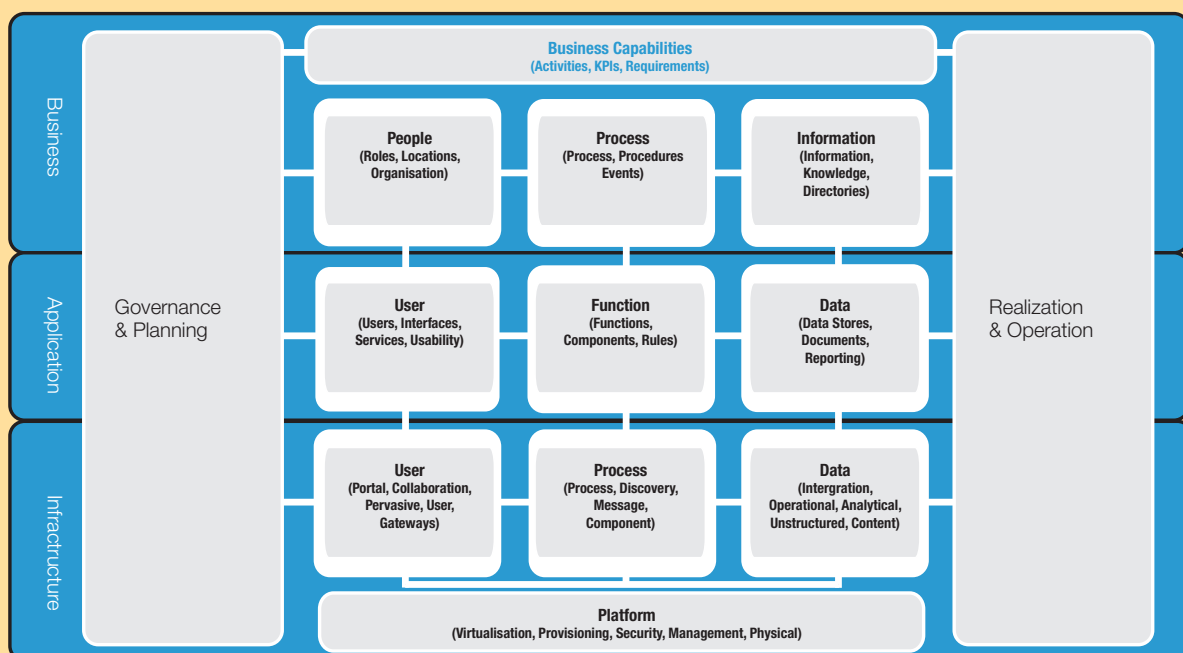Governance

Supplier
Eco-systems

"An EA is the only means by which a truly holistic approach can be taken. Without it, Government departments are destined to continue to operate in stovepipes, speaking their own languages and observing their own particular methods."

An EA framework captures the things that need to be described at each level:- - business, application, infrastructure – for the assets that need to be created for the department's people, processes and information.

Such a framework demonstrates the formal techniques and models used to capture desired business behaviours and how to translate them into capabilities *(see chart below)*. If lots of agencies use such a common

framework, then commonalities will arise. These can then be identified and can be joined up. The "bottom-up" movement – or the flow from "downstream" to "upstream" can thus be initiated. The EA will enable a common language, creating a process for sharing and working cross-government while picking best practice from the bottom up and therefore creating standards as things are shared.

EA and the broad framework

	Business Capabilities (Activities, KPIs, Requirements)		
Business	People (Roles, Locations, Organisation)	Process (Process, Procedures Events)	Information (Information, Knowledge, Directories)
Application	User (Users, Interfaces, Services, Usability)	Function (Functions, Components, Rules)	Data (Data Stores, Documents, Reporting)
Infrastructure	User (Portal, Collaboration, Pervasive, User, Gateways)	Process (Process, Discovery, Message, Component)	Data (Intergration, Operational, Analytical, Unstructured, Content)

Governance & Planning

Realization & Operation

Platform (Virtualisation, Provisioning, Security, Management, Physical)

Conclusion

"This is an inherently practical approach, describing the big picture and breaking it down into its component parts"

The list of EA frameworks in UK Government is increasing. While many share some fundamental aspects, no single one is complete enough to address all of the work implied by the Transformational Government agenda. The xGEA is ideal for a cross-government high-level view. To be effective in delivering the Transformational Agenda, EA needs to be taken down to an organisational level and several levels down in detail, to departmental EAs.

Many frameworks allow organisations to capture the "top line" or the "high level" – but they rapidly run out of steam as they drill down into the lower-level descriptions. In many respects, the drive towards EA has been hindered by initiatives that have created hefty documents and consultation exercises but little thorough action and follow-through. Departmental EAs need to emerge in a way that avoids the paralysis of huge, forgettable documents.

IBM has used its own framework to capture assets within IBM. Some of these have been successfully re-used within government departments. Through building an asset portfolio, the framework includes standard templates for describing these captured assets, including networking diagrams, service models, functional models and operational models.

This is an inherently practical, rather than a theoretical approach. The framework enables all parties to describe the big picture and then break it down into its component parts. It enables benchmarking and comparative analysis all the way through to the code or business process. IBM's framework is informed by a scope of expertise and skills, from strategic business insight through all areas to the deepest technical professions and as a result is inherently practical, and a model for such departmental EAs.

The tangible, results-driven, bottom-up approach that is being adopted by the UK government is clearly the optimal route. It is also the optimal route at a departmental level. Indeed, it may be even more important – as otherwise there will be no "bottom up." It is the responsibility of suppliers to have the collateral, tools and expertise to help the government navigate its journey at the best possible speed.

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