Australian Government

Department of Finance and Administration

The Australian Government Business Process Interoperability Framework

Enabling Seamless Service Delivery

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Executive Summary

Australians increasingly expect that the delivery of government programs and services should be simple, seamless and connected. Implicit in this expectation is that government business processes will be managed appropriately and that agencies will work together constructively in the search for innovative solutions to complex issues.

Interoperability is more than just the flow of information between agencies and the connection of information technology systems. It requires a collective mindset, an understanding of how each collaborating agency operates and the development of arrangements which effectively manage business processes that cut across organisational boundaries.

This is by no means an easy thing to do. Agencies need support in moving towards a collaborative way of working.

The Business Process Interoperability Framework (BPIF) provides a valuable guide and a set of tools to assist agencies in making the transition to connected and shared modes of operation. It has been endorsed by the Business Process Transformation Committee (BPTC) as a key tool to support whole of government business transformation.
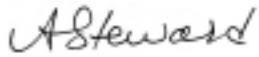
A key aim of the BPIF is to support whole of government policy goals, as outlined in the 2006 e-Government strategy *Responsive Government* and the Management Advisory Committee Report on *Connecting Government: Whole of Government Responses to Australia's Priority Challenges*.

It links to other Australian Government guidance and frameworks, including the Technical and Information Interoperability Frameworks, the Australian Government Architecture and the National Services Improvement Framework.

The BPIF provides a series of tools to support agencies undertaking business process interoperability initiatives, including:
- a roadmap which provides a series of steps for agencies to move towards interoperability
- a list of Australian Government sources to support and guide collaborative activity
- a capability maturity model which can be used by agencies to identify their current level of business process interoperability maturity
- a series of case studies to outline existing Australian Government business process management strategies and approaches to cross-agency process management.

The BPIF's role is to promote a whole of government approach to the management of business processes and a consistent way of tackling common issues across multiple agencies. The transformation of government to enable seamless service delivery is sure to be a challenging, yet rewarding, journey for us all.

A Steward

Ann Steward
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Introduction

The Department of Finance and Administration, through the Australian Government Information Management Office (AGIMO), is working to make Australia a leader in the productive application of information and communications technologies to government administration, information and services.

AGIMO fosters the efficient and effective use of information and communications technology (ICT) by Australian Government departments and agencies. It provides strategic advice, activities and representation relating to the application of ICT to government administration, information and services.

A business process is a set of related activities or operations which, together, create value and assist organisations to achieve their strategic objectives. A systematic focus on improving processes can therefore have a dramatic impact on the effective operation of agencies. A consistent approach to improving and managing business processes across agencies can lead to significant improvements in the way the Australian Government operates as an entity and can also lead to new connected service delivery opportunities.

Agencies adopting a business process management approach need to acknowledge that processes cut across organisational boundaries, both internal and external. A consistent approach to defining and managing processes, both internally and with external partners, is critical. Agencies should also keep in mind that whether a process is performed internally, or in an interoperable framework, appropriate evidence (i.e. records) of the transactions and activities will need to be created and retained for future reference.[1]

This consistent approach is defined as business process interoperability. It aims to improve the ability of agencies to respond to new requirements quickly and effectively by providing a common language and the ability to develop a common understanding of business processes and business requirements. This is particularly important as the need for cross-agency collaboration increases with the drive towards 'connected government'.

The Australian Government Business Process Interoperability Framework (BPIF) is one of several frameworks which combine to form a foundation for connected government. It provides agencies with principles, tools and guidelines for establishing and sustaining collaboration. It provides a common reference point which assists agencies in developing strategies for implementing cross-agency or whole of government projects.

The framework is cast within the context of the e-Government Strategy. Its aim is to reduce and simplify duplicate business processes and it is supported by the Australian Government Architecture.[2]

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1   The National Archives has a range of advice on managing evidence of business processes, including specific advice on shared systems. See: www.naa.gov.au.

2   The Australian Government Architecture can be found at:
http://www.agimo.gov.au/government/australian_government_architecture

The BPIF is designed to assist agencies in determining the best pathway to transform their business processes as part of a strategy to move from an agency-centric approach, to a whole of government approach to policy and program development and service delivery.

Different agencies are likely to be at different stages of development with different approaches to process mapping and modelling, process improvement, business process management, collaboration and interoperability. This reflects differences between agencies in terms of the influences of government policy imperatives, customer requirements or the agency's level of commitment to connected government.

What is interoperability?

Interoperability is not just a technical matter of connecting computer networks. It also embraces the sharing of information between networks and the re-design of business processes to deliver improved outcomes and efficiencies and to support the seamless delivery of government services.

Interoperability is fundamental to the success of connected government – the aim for collaborative, effective and efficient government and the delivery of seamless government services. However, delivering on the vision of connected government relies on the willingness and ability of agencies to collaborate. Active commitment (rather than passive compliance) of the people supporting this collaboration is critical.

Interoperability is an important element in the delivery of government service reform and integration initiatives. Within this context, it should be understood that:
- interoperability is not an end in itself, but an enabling capability
- while standards are necessary, they are not sufficient for interoperability
- an understanding of the business, social, political and cultural context of the organisations is essential
- to be interoperable, an organisation must actively engage in the ongoing process of ensuring that its systems, processes and people are managed in a way which maximises opportunities for internal and external exchange and re-use of information
- organisational boundaries should not stand in the way of the right people having access to the right information to make informed decisions or to provide high quality service.

Enabling interoperability and assuring the consistency, efficiency and reliability of business processes across government also requires effective standards and guidelines.

The Australian Government Interoperability Framework

The Australian Government Interoperability Framework (AGIF) is a key element in the implementation of the e-Government Strategy, especially in relation to building connected service delivery and achieving value for money. The AGIF aims to ensure that standards and protocols developed in one agency or network of agencies do not impede future connections with other networks and processes. An interoperability framework is

not a static document; it is designed to change in response to changes in technology and administrative requirements of government.

The AGIF comprises three components:
- the Business Process Interoperability Framework
- the Information Interoperability Framework
- the Technical Interoperability Framework.

The three frameworks support each other to facilitate delivery of whole of government objectives and combine to encompass:
- the harmonisation of common service delivery business processes
- the development of a framework to improve the ability to access, share and re-use information
- the development of technical standards to ensure that information and data can be shared.[3]

The Technical Interoperability Framework sets out a common language, conceptual model and standards that Australian Government agencies can employ as a basis for interoperating to deliver the Australian Government's policy and program priorities.[4]

The Information Interoperability Framework assists agencies to improve their information management capacity in support of information exchange.[5]

The Business Process Interoperability Framework

The Business Process Interoperability Framework (BPIF), in association with the Australian Government Architecture (AGA), provides agencies with principles, policies, tools, standards and guidelines for working together. The Framework provides the means for individual and collaborating agencies to map business processes, with a view to identifying areas of commonality and opportunities for integration or collaboration within an agency and with other agencies. This enables agencies to embark on new ways of delivering services, and for the business planning processes of agencies to be increasingly standardised.

Understanding business processes within an agency or across multiple agencies encompasses understanding the connections that exist between agencies, the degree of commonality in business processes, the flow of information across those processes and the technology required to facilitate those connections.

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3   *Delivering Australian Government Services. Access and Distribution Strategy* can be found at: http://www.agimo.gov.au/publications/2006/may/ads

4   The *Australian Government Technical Interoperability Framework* can be found at: http://www.agimo.gov.au/services/framework

5   The *Australian Government Information Interoperability Framework* can be found at: http://www.agimo.gov.au/publications/2006/may/iif

Whole of Government

'agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues'

Challenges
- Improve cross-agency coordination and collaboration while maintaining vertical accountability
- Deliver programs and services in a seamless manner
- Improve government's engagement with individuals and committees
- Respond quickly and effectively to emerging issues and future crises

Requires
- Reform and redesign of *government business* process
- Reform knowledge and *information management* practices
- Greater cross-agency integration of information *technology systems*

All three areas must be considered to ensure meaningful change

Strategic Response   **Interoperability**   *'co-operation of people, processes and systems to deliver seamless and customer-centric services'*

Australian Government Interoperability Framework

Business Process Interoperability Framework

- Outline of business process interoperability
- Implementation guide
- Principles
- Utilising architecture
- Capability maturity model
- Glossary
- Check list for implementation

Information Interoperability Framework

- Plan to share information
- Principles for information management
- Authoritive data sources
- Protocols for information sharing and re-use
- Legal policy and administrative requirements
- Information lifecycle management

Technology Interoperability Framework

- Harmonisation of standards for transport, messaging, description, discovery and security

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Business process transformation can be internally and/or externally driven. A single agency may model its internal processes across operational boundaries as part of a process improvement program aimed at improving customer service, ensuring compliance or reducing costs. At another level, several agencies may collaborate to harmonise particular business processes in an effort to improve seamless service delivery to citizens.

The Business Process Interoperability Framework contains a series of tools to assist agencies to adopt interoperability, including:

- a roadmap which provides a sequence of steps to facilitate progression towards interoperability
- a capability maturity model which can be used by agencies to identify their current level of business process interoperability maturity and to define a strategy for achieving a desired maturity
- a series of case studies to outline initiatives taken by agencies to improve business processes management and interoperability.

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The Business Case for Business Process Interoperability

Supporting a 'whole of government' approach

A 'whole of government' approach to delivering quality advice, programs and services requires objectives that are shared across organisational boundaries and processes to ensure the effectiveness of collaborative or connected working arrangements. The 2004 report of the Management Advisory Committee provides the following definition of 'whole of government':

> Whole of government denotes public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues. Approaches can be formal and informal. They can focus on policy development, program management and service delivery.

Dr Peter Shergold outlined the aims of this new approach in his preface to *Connecting Government – Whole of Government Responses to Australia's Priority Challenges*:[6]

> Whole of government is the public administration of the future. It offers links and connections to the global community of ideas, knowledge and understanding essential for the APS to face the governance challenges of the 21st century. It extols team-based approaches to solving the wicked problems that are endemic to public policy.

The diagram on page 13 demonstrates the alignment of AGIMO's guidance and tools to overall whole of government strategy and policy. Key elements that support whole of government interoperability include the Australian Government Architecture, the Interoperability Frameworks, the National Service Improvement Framework and the GovDex collaborative workspace. How these tools and guides can be utilised to support business process interoperability is explored later in this framework.

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6   Management Advisory Committee (2004), *Connecting Government. Whole of Government Responses to Australia's Priority Challenges*, 4 can be found at http://www.apsc.gov.au/mac/connectinggovernment.htm

Policy	Management Advisory Committee (MAC) 4 – *Connecting government: Whole of Government Responses to Australia's Priority Challenges*
Strategy	e-Government Strategy – *Responsive Government: A New Service Agenda*
Architecture	Australian Government Architecture
Guidance & Tools	National Service Improvement Framework › Interoperability Frameworks › ICT Investment Tools & Guide › Better Practice Guides › Service Delivery Capability Assessment › Source IT
Collaboration & Repository	GovDex

Motivations for business process interoperability

The impetus for business process interoperability stems from the increasing need for collaboration within and between agencies in the delivery of services, the development of policies and the implementation of programs or projects. Drivers of collaboration and integration include responding to increasingly complex social and environmental problems, providing services to better informed and more discriminating customers, advances in information and communications technologies and the need to better manage resources more effectively (particularly skills).

More complex public policy challenges

The challenges of national security, counter-terrorism, environmental sustainability and an equitable and self-reliant society are complex. Satisfying these needs cannot be met by a single agency, but require strategic cross-agency responses.

Cross-agency policy responses will be required in an increasingly complex policy environment to coordinate activity across agencies. This has been particularly evident in recent developments in indigenous and water resource management policies.

Changing customer needs

Customers of government services including citizens, private businesses and government agencies expect their delivery to be seamless and consistently available through multiple channels. As people become more mobile, knowledgeable and independent, they demand faster, more accessible and more diverse services from government. Customers expect equivalent levels of service from government agencies to those they receive from private businesses.

Agencies at the front line of government service delivery such as Centrelink, the Australian Taxation Office and Medicare Australia regularly measure customer satisfaction and seek feedback from customers on particular needs and service

improvements. There is an increasing expectation from citizens and businesses that they will be able to have a range of government services through their preferred point of interaction.

The creation of single points of entry to government services, such as the Australian Government Online Service Point and the Business Entry Point, and the sharing of services between distribution channels, such as that witnessed in the establishment of Family Assistance Offices and the Indigenous Coordination Centres, are increasing trends in government service delivery.

Legislative or Regulatory Change

New legislation or changes to existing legislation can add significant impetus for agencies to review processes and to investigate new modes of operation. Legislative change may also provide new opportunities for agencies to collaborate and share information.

As an example, recent amendments to taxation legislation have opened up new opportunities for the Australian Taxation Office to collaborate with the Australian Crime Commission, the Australian Federal Police, the Australian Securities and Investments Commission, the Commonwealth Director of Public Prosecutions, the Attorney-General's Department and the Australian Government Solicitor in dealing with large scale tax avoidance and evasion cases.

Technology change

Advances in information and communications technology are creating both opportunities and challenges for governments. Government agencies must be ready to respond to the opportunities presented by technological advancements to transform ineffective or inefficient business processes.

E-Government and connected service delivery, and working towards the vision of connected government by 2010, will require substantial reform of government business processes. It will also require government agencies to implement connected government in a practical way through the redesign of business processes, reform of the associated knowledge management practices and greater cross-agency integration of their information technology systems.[7]

Business process interoperability is the key to this successful business process transformation within and between government agencies and in meeting the aims of providing better coordinated and citizen-centric government services articulated in *Connecting Government* (MAC 4) and the 2006 e-Government Strategy.

Workforce change

The ageing of the public sector workforce and increasing competition for key skills are driving a shift towards a greater use of shared services and standardisation in a number

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7   *Responsive Government. A New Service Agenda*. 2006 e-Government Strategy can be found at:
     http://www.agimo.gov.au/government/e-government_strategy

of governments. The State of the Service Report for 2005-06 reveals similar workforce challenges for the Australian Public Service.[8]

In 2005-06, 40.7% of ongoing APS employees were aged 45 and over and could be considered prime candidates for retirement over the next decade. The ability of agencies to continue to support and maintain multiple separate systems and processes may diminish if there are not the same numbers coming into the public service to replace them. There is also a growing imperative, as part of effective knowledge management strategies, to capture and document core business processes before key corporate knowledge exits an agency.

Turnover of staff is also a significant challenge for a number of agencies. In 2005-06, the total number of engagements was 20,688, artificially high due to the inclusion of 5,471 Medicare Australia employees under the Public Service Act. Excluding Medicare Australia employees, engagements were 15,271, which is an increase of 32% over the previous year. Separations totalled 9,506 in 2005-06, which is a decrease of 9.8% from the previous year. Added to this is an increasing number of staff moving between agencies (2.7% of all APS staff during 2005-06). A consequence of these trends is the need to train thousands of staff in new systems and processes.

Improving business process interoperability and standardisation can help agencies to meet this challenge. For example, where a number of government agencies use standardised, common processes, economies can be achieved in training new staff. Also, staff transferring between agencies which share common processes can do so with less effort, requiring less time for learning new approaches. Examples of standardised processes across government are often confined to those which are centrally administered, including cabinet and budget processes, and procurement processes.

Machinery of government changes

Changes to the Administrative Arrangements Order (AAO) following a decision by the Prime Minister to abolish or create a department or to move functions between agencies (which commonly occurs after an election but can also happen at other times) provide opportunities to evaluate the efficiency and effectiveness of business processes within and across agencies.

Implementing machinery of government changes is a complicated and complex undertaking, particularly where entities are forced to merge. Business process interoperability can support this undertaking by enabling the review of processes between the merging agencies to uncover the most effective mode of operation. Increasing the standardisation of processes and the functional understanding of government across agencies will also make such machinery of government changes simpler in the future.

Business continuity

Business continuity planning or emergency response planning addresses an agency's readiness to manage any emergency or adverse situation which might conceivably

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8   The *State of the Service Report 2005-06* can be found at: http://www.apsc.gov.au/stateoftheservice

affect it. When a major disruption occurs, agencies need to be able to maintain critical business processes.

The ability of an agency to respond rapidly to an emergency situation will depend on the agency's understanding of its operations and how it interacts with other agencies. Documenting business processes in a standardised fashion across government will enable these interactions to be captured in a way which enables the agencies to quickly identify critical business processes and implement effective strategies in response to major disruptions.

This has been driving some business process management initiatives in government but a greater focus on interoperability will enable agencies to understand the interdependencies between themselves and collaborating agencies or external parties.

Efficiency improvements

Program or policy improvements to increase consistency, reduce redundancy, identify opportunities for re-use of proven processes, establish a common language and standardise processes have been implemented by agencies. These changes may be part of a business transformation initiative to improve operational efficiencies through shared services and the re-use of common business processes.

Mapping out business processes can assist in better understanding the existing inefficiencies in processes, particularly inefficiencies which exist between agencies. Processes that require the manual coordination and exchange of information between agencies are good candidates for business process interoperability initiatives, not only to improve efficiencies but also the responsiveness of government agencies.

Challenges

While there is a strong case for agencies to embrace business process interoperability and whole of government modes of operation, it also needs to be acknowledged that this presents major challenges. Shifting from a vertical command and control departmental structure to a collaborative, networked model of government is a fundamental shift in the way every level of government operates.

Working across multiple agencies and systems or working across functional boundaries within a single agency requires:
- a commitment to streamlining and standardising business processes around common elements, internally and with other agencies
- strategic investment in information and communications technology led by higher level business and service excellence goals
- a user-centric focus (both internal and external), based on a common understanding of the service needs of users and their preferences for how the service is provided
- agreement on the respective roles and responsibilities of the collaborating agencies (governance arrangements)
- investment in people, first to support the transition and then to maintain the skills and capabilities to support new arrangements and continuous improvement.

Planning, managing, delivery and reporting on programs needs to be horizontally linked across agencies focused on common goals or outcomes. This is enhanced when business processes are both understood and are able to operate across organisational boundaries.

There are many challenges which need to be understood and managed carefully in moving an organisation towards achieving business process interoperability.

Management Buy-in

Management buy-in is critical to the implementation of effective business process interoperability. Adoption of interoperability is unlikely to proceed at a whole of agency level, or between agencies, without the agreement and full commitment of the management of the collaborating agencies. Commitment can be motivated by a number of factors. Senior management indifference or an inability to understand or accept the benefits of embracing business process interoperability will inhibit an agency's efforts to collaborate effectively.

Building commitment and trust takes time so, as far as possible, collaboration should look to leverage existing relationships and networks between management in each participating agency to pave the way for future work.

Proposals for collaboration must also have a strong business case. They must be clearly aligned to the strategic goals and business requirements of each of the participating agencies to give senior management confidence that the initiative is worth supporting. All materials must be clear, succinct and uncomplicated; business process models presented to senior management must be able to be quickly understood by a non-practitioner.

Staff Attitudes

Attitudes of staff to change present a challenge which needs to be factored into the formulation and implementation of business process interoperability. Staff are key stakeholders in any business process transformation initiative and must be involved from the outset. Negative attitudes to change are often based on fears of downsizing, loss of status and identity and previous implementation failures, and are generally due to inadequate consultation with staff by management during the design and implementation of the transformation process.

Clearly explaining the drivers and reasons for change and communicating the proposed changes to staff at all levels is a priority. Collaboration and interoperability also requires management to acknowledge and reward cross-agency activities in performance management arrangements.

While technical problems can provide considerable challenges, people and cultural issues are often more challenging and less predictable, requiring close attention at each stage of the transformation.

Legislative Impediments

One of the biggest challenges to agency collaboration is often the prevailing legislative environment. Privacy laws and legislation governing the management of information in agencies can often prevent the exchange of certain types of data between agencies.

Securing legislative change to enable collaboration is a lengthy, risky and highly political process which will need to be carefully considered by agencies wishing to undertake whole of government initiatives. It is crucial that any legislation governing the operation of particular processes is identified early in the planning process and that all possible legal impediments are well understood by collaborating agencies.

Long-term Approach

Business process interoperability requires long-term commitment. However, identifying some early 'easy wins' will help to ensure that process improvement and collaboration gains support and does not lose momentum.

Reconciling these two apparently conflicting aims can be difficult. A successful approach should outline longer term objectives but identify smaller, achievable targets as part of this journey. Understanding the relative maturity and the receptiveness of people and processes to change in both your agency and those with whom you wish to collaborate will assist in identifying the best place to start with collaborative business process improvement initiatives.

Effective business process interoperability must never lose sight of the bigger picture – a whole of enterprise or whole of government perspective needs to be maintained, otherwise further opportunities for improvement can be missed and change may actually be slowed down.

Resourcing

Acknowledging these challenges and the long-term nature of business process interoperability also leads to the issue of resourcing. The kind of organisational transformation required for effective business process management and interoperability requires a significant commitment of resources, time and effort.

Collaborative initiatives also require agencies to consider greater flexibility with staffing arrangements and to explore options, such as secondments and temporary movement. These arrangements require careful management and need to be clearly defined and well understood, as acknowledged in the MAC Guide, Working together: Principles and practices to guide the Australian Public Service:

> Taskforces often bring together staff from different agencies to work under a common management framework. That framework needs to recognise differences of organisational culture but also the goals of a common focus and collaborative effort. Teamwork is essential. Practical administrative issues should not be overlooked during the establishment phase. Where officers from various agencies join a taskforce that will exist for a considerable time, it is important to establish what performance assessment and pay arrangements will apply to individual participants.[9]

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9   *Working Together: Principles and practices to guide the Australian Public Service* can be viewed at: http://www.apsc.gov.au/mac/workingguide.htm

four Interoperability Principles

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Interoperability Principles

Standardisation of government business processes and enabling more efficient and effective connections across structural boundaries will result in a range of benefits for government service users and providers. To make government services and information more accessible and to improve the efficiency with which they are provided, government must build the interoperability capability of its agencies, harmonise policies and regulations, integrate programs and streamline business processes.

A more standardised and uniform set of processes will ensure that government is more responsive to both challenges and change. The ability of agencies to respond efficiently and effectively to policy or structural changes is enabled by interoperability between business processes and the people and systems which support them.

Business process interoperability principles

The set of principles described here provides a foundation for agencies to use in planning and undertaking collaboration on business processes across structural and agency boundaries.

The nine principles are:
- Business process interoperability efforts should focus on outcomes.
- Business process interoperability outcomes should be linked with whole of government initiatives (whole of agency for single agency projects).
- Business processes must be user-driven.
- The benefits of collaboration and business process interoperability must be identified.
- A standardised approach to documenting business processes must be agreed and followed.
- The approach to business process interoperability must be practical, rigorous and flexible.
- Sharing of business processes across boundaries should promote trust, confidence and security of data.
- Governance arrangements must be agreed between collaborating agencies.
- People and culture differences between collaborating agencies must be acknowledged and managed.

These interoperability principles draw on a number of sources including the Australian Government Service Delivery Principles, the Australian Government Architecture, the Information Interoperability Framework, the Technical Interoperability Framework, the National Service Improvement Framework and the Australian Government e-Authentication Framework.

Adherence to the following principles by individual and collaborating agencies will promote alignment within and across agencies and ensure coherent actions.

1. **Business process interoperability enables achievement of high-level goals and is not an end in itself**

   Interoperability is an enabling strategy for the achievement of high-level goals, such as connected government. It is not an end in itself, but a means to achieve higher levels, strategic goals and outcomes.

   Business process interoperability enables collaborating agencies to share processes for the achievement of a common goal or for delivering similar services. There should be a compelling business need for collaboration and this should be clearly articulated.

2. **Whole of Government alignment and commitment**

   The transition to interoperability of business processes should be driven by a common vision that is aligned with a whole of government approach to policy development, program management and service delivery.

   Working across structural and functional boundaries is facilitated when the participating agencies agree on what is important, focus on a shared vision and commit to its achievement. This requires commitment to a whole of government approach. Collaborating agencies should identify common areas at a relatively high-level to define the basis of interaction. Within this environment, agencies will apply a consistent approach (with a common language, standards and agreed governance arrangements) to business process management and interoperability.

3. **User-driven**

   Business process interoperability should be driven by users' needs, with the aim of improving formulation of government policy and delivery of services to users.[10]

   Improvements in government policy formulation and service delivery should be based on a thorough understanding of user needs and expectations with the aim of developing and maintaining trusted relationships and designing effective policy and policy instruments. It is critical that consumers experience consistent and effective service performance across government programs and services, equivalent to that received from private sector service providers. User needs should define the service and, in turn, the service should define technology support requirements.

4. **Generates net benefits**

   A whole of government service must be founded on a full analysis of costs and benefits, including tangible and intangible, real and imputed, capital and recurrent values and must continue to generate positive net benefits from users and provider partners.

   Benefits of business process interoperability for users of government services include time and travel savings, service performance predictability, accessibility and seamless service delivery by way of a 'one-stop shop' style of experience. Efficiency and effectiveness benefits to partnering government agencies are associated with the re-use of processes, reduced duplication, improved responsiveness to change and lower overhead costs.

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10   Users may be citizens, businesses, community organisations, other governments and government agencies.

Assessment of the costs and benefits of interoperability must accommodate quantitative and qualitative attributes, with measurement involving both efficiency and effectiveness indicators. While short-term costs are likely to be large and tangible, related benefits are often more distant and less tangible. The ongoing monitoring of costs and benefits is important for continuous improvement of business processes and service delivery.

Evaluations of challenges and risks must include an assessment of the prevailing decision-making environment (time frame, priorities and resources) in government and government agencies. Identification of short-term wins will attract support for a business case for business process transformation and interoperability.

5. Standards-based

Commitment to agreed standards, guidelines, reference models and frameworks ensures consistency and provides participants with confidence and credibility in decision-making and actions.

Business process interoperability is sustained by commitment to agreed standards, better practice guidelines, reference models and frameworks. Standards underpin the use of a common language, a common methodology and a common approach to improving business process management, all of which are critical to improving the ability of agencies to collaborate, develop and sustain interoperable processes and services. Standards also facilitate communication between agencies, and between agencies and users. An essential early step in implementing business process interoperability in association with other agencies is to agree standards and identify relevant better practice guidelines.

6. Based on an approach that is practical, rigorous and flexible

Interoperable business processes should be simple and easy to manage, produce consistent and predictable outputs and allow individual agencies to operate unique or specific processes.

Practicality and simplicity are critical to successful collaboration, achieved by focusing on common areas at the highest level.

Rigour is provided by using tools, frameworks and methods which support interaction, ensuring a consistent approach and reliable results.

The approach should be flexible, recognising that each agency has specific requirements, in addition to those which are common. The specific or unique components/activities are maintained by individual agencies, while common components/activities are shared between collaborating agencies.

7. Should ensure trust, confidence and security for customers and partners

Business process interoperability based on trusted relationships instils confidence in users and collaborating agencies and ensures respect for privacy, confidentiality, intellectual property and security requirements.

Agencies successfully interoperate by sharing or re-using business processes, which provides confidence that services and performance between agencies will occur as expected. An appropriate form of agreement between collaborating agencies will underpin commitment to business process interoperability in the context of higher-level goals. Business process interoperability should generate service outcomes for users that they can trust to be consistently accurate and reliable. Users must be confident that reasonable steps are taken to ensure the security, privacy and confidentiality of stored and transferred information.

8. **Supported by transparent governance arrangements**

Governance arrangements for whole of government objectives must be explicit, open, transparent and specific to the particular objective.

Governance mechanisms must be kept to the minimum needed to achieve desired interoperability objectives. Clearly defined accountability arrangements are important for successful whole of government work. Roles, responsibilities and accountabilities must be explicit, including those held jointly and individually. It may be necessary to create new structures or management arrangements across existing structures through taskforces or teams. As noted in the National Service Improvement Framework principles for collaboration, 'governance arrangements must be both sustainable and progressively refined in recognition that the collaborative service delivery is not neat or linear, rather an iterative process'.[11]

9. **Recognises that people and culture are keys to successful change**

The process of interoperability must embrace people and organisational culture as much as it relates to processes and systems if whole of government objectives are to be achieved and successfully sustained.

Critical to the successful implementation and ongoing maintenance of business process interoperability is an understanding of attitudes and behaviours of agency staff at all levels towards organisational change and of the differences in organisational culture between collaborating agencies. Monitoring changes in people and organisational culture and continuous improvement should be features of business process management.

The active participation of staff at every stage of the business process transformation will build their understanding and ownership of proposed changes and result in high levels of staff commitment. Staff should be confident that their contributions are valued and that they are provided with an appropriate level of communication. Ongoing communication with staff will strengthen their commitment to change and ensure that outcomes are delivered as intended.

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11   The National Service Improvement Framework can be found at http://www.nsif.gov.au

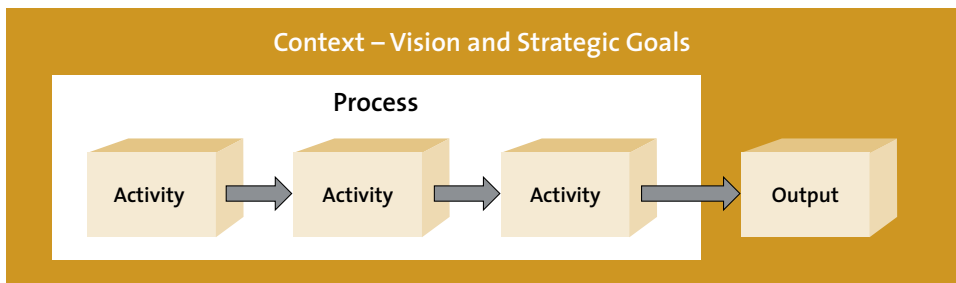five Business Process Management

five

Business Process Management

A business process relates to *how work* is done within an organisation, in contrast to what is done. A business process is a sequence of related activities or operations which link an organisation's strategy and plans to the effective and efficient delivery of services to its customers. A business process has a clear beginning and end, creating outputs by adding value to inputs.

The value which an organisation creates for its stakeholders derives from its processes so the route to both efficient and effective operation is through business process improvement. Business process improvement focuses on changing a process to improve its overall performance or to meet a new goal or outcome. A process can be represented in simple terms as a series of activities which contribute to an output (as shown in the diagram below).

Business process management (BPM) is the way in which an organisation manages its business by focusing on its processes.[12] An organisation embracing BPM conducts process improvement in a coordinated way, exploring opportunities for re-using, combining or standardising processes across the organisation or with other organisations. This should lead to a reduction in redundant or duplicative processes. BPM can embrace various business improvement practices, such as Six Sigma, Business Process Re-Engineering (BPR) and Total Quality Management (TQM), or other similar methods.

The focus of the Business Process Interoperability Framework is on cross-agency activities, but many of the approaches may be applicable to internal agency Business Process Management.

Agencies wishing to consider adopting business process management may wish to consider participating in forums such as the Business Process Management Group (http://www.bpmg.org), which has a chapter in most Australian capital cities and provides opportunities to network, share information and to gain access to resources and better practice material.

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12   Imre Hegedus (2006), *BPM and PI: Business Performance Partners* viewed at http://www.bpmg.org

For internal business process improvement initiatives, a good start for reviewing the effectiveness of government business processes is the MAC Report *Reducing Red Tape in the APS* (http://www.apsc.gov.au/mac/redtape.htm).

Reducing Red Tape in the APS sets out a framework to help drive change in thinking about administrative processes. It includes basic principles for scrutinising proposed and existing regulatory and administrative measures, how they can be designed to impose the least cost and how they can be managed effectively once they are in place. It suggests approaches to ensuring that processes do not become redundant, ineffective or inappropriate over time.

Common Processes

The 2006 e-Government strategy advocates a whole of government BPM strategy (which we refer to as business process interoperability), focused on reforming poorly designed processes and reducing duplication by combining similar processes across agencies:

> *The Australian Government will work towards common, standardised, modular business processes across its agencies. When new policy proposals that relate to service delivery are submitted by ministers for government consideration, they will also be assessed against their contribution to reforming and improving government business processes, and whether they support the goal of a common business process structure across government.*

According to the OECD, common business processes are:

> *Those business processes that exist in different organisations yet have, in essence, the same goals and outputs, thereby creating the possibility for the arrangements to conduct these business processes to be optimised and delivered in a more efficient and standardised manner.*[13]

The identification of common processes and services within government has the potential to achieve economies of scale, reduce duplication and improve seamless service delivery across the Australian Government. Some of the business processes that are relatively common across agencies within the Australian Government include financial management, grants management, parliamentary workflow and recruitment.[14]

While the way in which they are being implemented may differ, many of the elements in these and other processes will be the same in most government agencies. Identifying, understanding and acknowledging the commonality of these processes can enable agencies to re-use processes and systems developed elsewhere in government or to engage in collaborative activities with other agencies to standardise practices.

The diagram below demonstrates how common processes could be utilised by multiple agencies in the delivery of services to end users. This is symptomatic

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13   OECD (2005). *E-Government for Better Government*, OECD E-Government Studies.

14   The National Archives of Australia's *DIRKS Manual: A Strategic Approach to Managing Business Information* appendix 15 has a transactional analysis of 12 common activities (see: www.naa.gov.au) while the NAA's *Administrative Functions Disposal Authority* also utilises detailed analysis for activities performed under 17 high level common administrative functions. To access this analysis contact recordkeeping@naa.gov.au.

of Australian Government agencies where Registration, Authentication, Case Management and Payment processes are relatively common across a number of agencies. These key functions could satisfactorily be fulfilled by standardised and modularised business processes.

Clients – Customers/Citizens/Businesses/Government

	Org. A	Org. B	Org. C	Org. D	Org. E
Registration	▶	▶	▶	▶	▶
Authentication	▶	▶	▶	▶	▶
Case Management	▶	▶	▶	▶	▶
Payment	▶	▶	▶	▶	▶
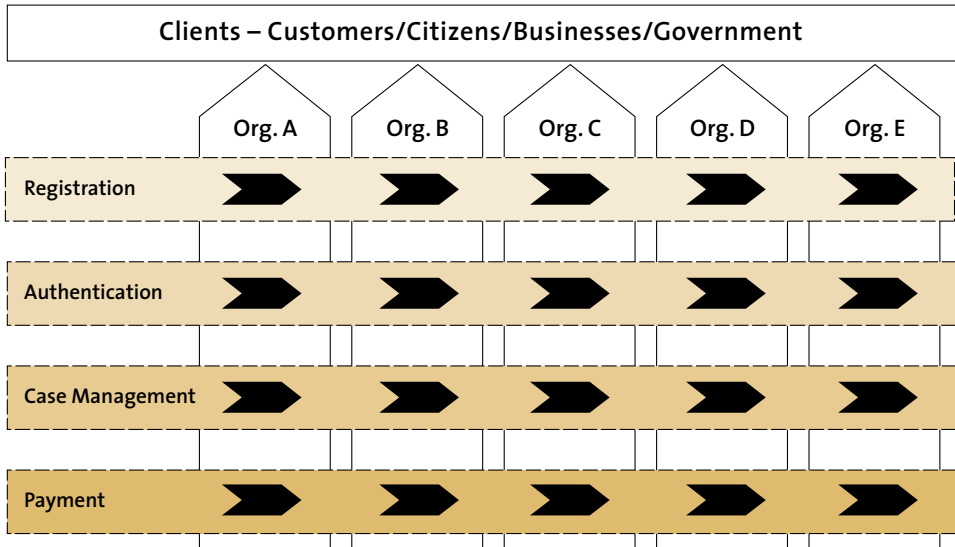
Source: OCED 2005

Activities

To truly understand the potential commonality in processes, it is necessary to understand the supporting activities and services in the process. At a high level, an activity describes the individual steps, operations and practices within a business process. Essentially, these activities are a series of inputs which enable the delivery of an output, with the overall aim of achieving an outcome. While designed specifically to determine recordkeeping requirements, the procedure outlined in *Australian Standard 5090 - Work process analysis for recordkeeping* may be of assistance in this process identification.

An activity might be a self-contained task, or it may be a smaller sub-process. In many ways, this will depend on the level at which the process is documented.

These activities could be undertaken by people (such as answering a telephone), an interaction between systems and people (such as processing a payment) or by an automated system with minimal human interaction (such as an 'out-of-office' e-mail response).

Services

Services are discrete units of functionality which can be utilised to perform specific tasks or activities. These services may be manual or IT-specific and they support activities within a business process. Different business processes may consume some service

components which are common with other business processes, and others that are unique to that process.

Understanding the linkage between activities within a business process and the services which support them can enable the identification of common services.

These common services can provide opportunities between agencies or across business units to develop re-usable service components or shared service arrangements, thereby reducing duplication and promoting standardisation.

Business processes which support the core business function of an agency will tend to be more specific and will present less opportunity for standardisation. However, even within core business processes, there may be opportunities to utilise common service components.

Often, these common or more generic elements will be found at the more 'external-facing' ends of a process. Also, there is often a greater drive for standardisation of these external interfaces to streamline transactions with other agencies, businesses or citizens.

The following diagram illustrates the link between services and processes, the difference between common or generic services and unique or specific services and where they are more likely to reside.

Processes comprise common and specific services
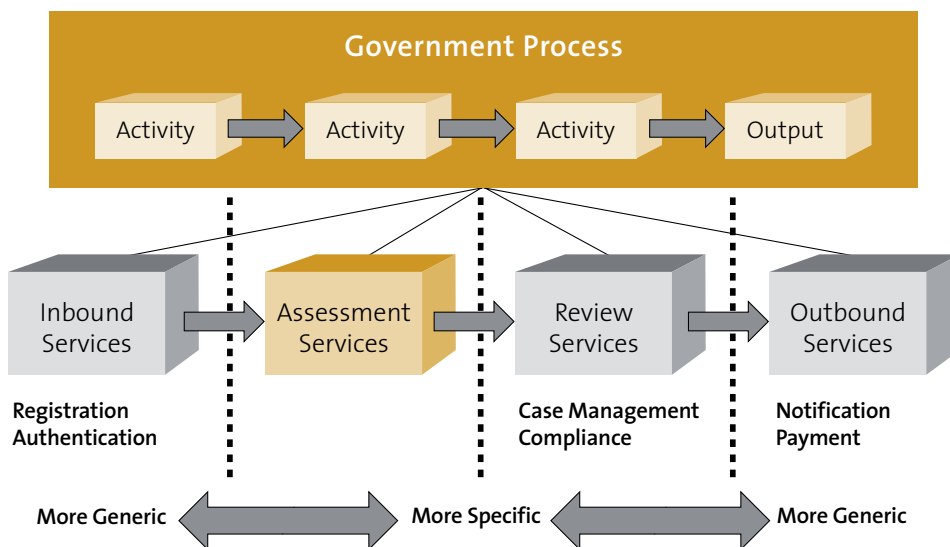
Agencies offering services to citizens that require application and registration, such as applying for a grant or other forms of financial assistance, registering a birth or registering a new company, could potentially utilise common application and registration services provided by another agency as a shared service or as outsourced to an external third party.

There is significant opportunity for standardisation and shared service delivery in these inbound services, which have already been the subject of some consolidation, such as the Access Card project to create common registration and authentication services across the Department of Human Services agencies and the Business Entry Point to simplify business registration and application services.

Similarly, at the other end of the process, notification and payment services are likely to be common in general intent and operation for a number of different processes. These examples are customer-facing services which, when streamlined, can improve the outcome for the customer, as well as generating internal efficiencies.

Standardised electronic payment methods, such as Bpay and Electronic Funds Transfer (EFT), provide examples of common services which have been developed to generate efficiencies and improve customer service.

The Australian Government has developed a whole of government architecture as a reference framework so that processes can be consistently defined and mapped into the service and technology layers to identify common processes, activities and services and the potential for re-use and shared service delivery within those processes across government.

six Business Process Interoperability and Architecture

six

Business Process Interoperability and Architecture

Architecture provides a common set of standards and guidelines which enable government agencies and departments to re-use common business processes and information systems. This facilitates interoperability, enables reduction in costs and supports improvements in connected service delivery. A business or enterprise architecture (BA/EA) is a framework for aligning business processes with corporate goals and objectives. A service-oriented architecture (SOA) is a framework for use in the design and development of IT systems which are aligned with business processes identified within the enterprise architecture.

An architecture can be used as a critical decision-making tool to identify capability gaps, prioritise critical IT investment decisions and streamline business processes by identifying duplication and opportunities for re-use. It also helps in identifying opportunities to re-allocate resources to higher value services.

The United States (US) Government's Federal Enterprise Architecture Framework (FEAF) provides the Office of Management and Budget and other federal government agencies with a common language and a framework to describe and analyse IT investments and enhance collaboration. It is a critical element in the transformation of the US Federal Government to a citizen-centric, results-oriented and market-based organisation.[15] The FEAF links business structures and functions to IT capabilities, enabling traceability in the architecture, critical for assessment of investment opportunities.

The Australian Government Information Management Office (AGIMO) has developed the Australian Government Architecture (AGA), modelled on the FEAF for whole of government use. The AGA provides an over-arching framework, which sits above enterprise and service-oriented architectures developed within individual agencies, providing a common and consistent way of describing the operations of government. This approach promotes a whole of government view to the business of government and the provision of services.

The AGA framework is strongly business focused and provides a 'line of sight' through the various reference models from the business strategy and performance measures to underlying processes, services and the technology that supports them. This enables traceability within an enterprise. Understanding the linkages and inter-dependencies (traceability) that support service delivery and the internal operations of government is a key outcome and enables the architecture to provide support to investment decision-making.
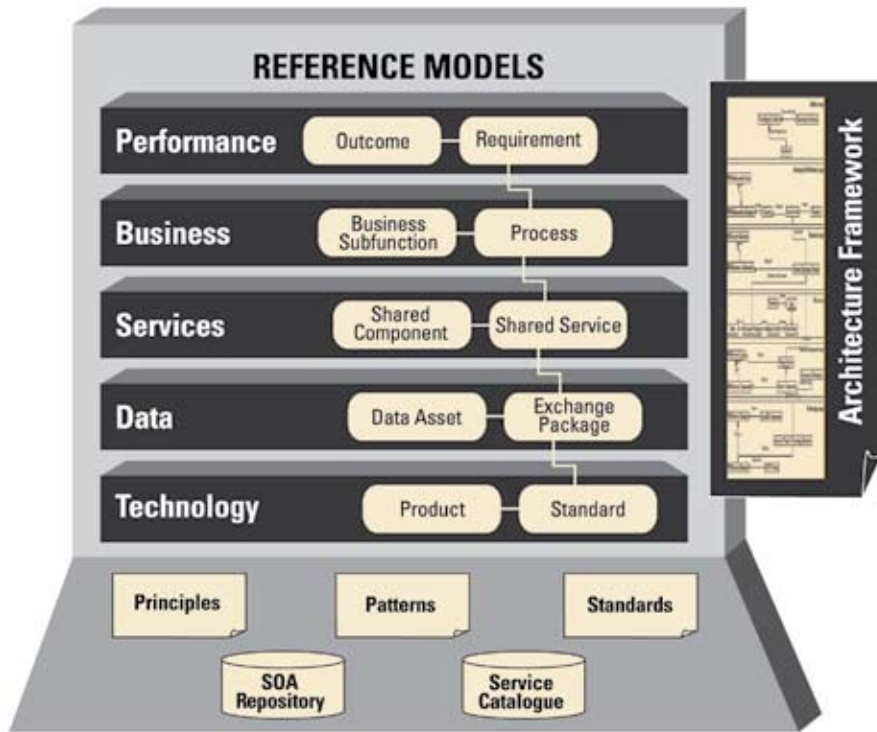
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15   FEA Consolidated reference Model version 2.0 (FY08 Budget Formulation), June 2006: http://www.whitehouse.gov/omb/egov/documents/FEA_CRM_v20_Final_June_2006.pdf.

seven The Australian
Government Architecture

seven

The Australian Government Architecture

Australian Government Architecture

The AGA[16] will be utilised to inform service design, decision-making practices and priority setting to determine which programs should be primary targets of investment. The AGA will assist government in identifying gaps and overlaps in the investment intentions of agencies and opportunities for collaboration.

The AGA consists of five reference models:

- **Performance Reference Model (PRM)**

  Framework for performance measurement, providing common output measurements throughout the Australian Government.

- **Business Reference Model (BRM)**

  Facilitates a functional view of the Australian Government's lines of business, structured around common business areas, rather than agency structures.

- **Service Reference Model (SRM)**

  A business-driven, functional framework which classifies services according to how they support business and performance objectives. The SRM provides the 'glue' between business and the supporting technology.

- **Data Reference Model (DRM)**

  A flexible and standards-based framework to enable information sharing and re-use across service providers.

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16   The AGA can be found at http://www.agimo.gov.au/government/australian_government_architecture

- **Technical Reference Model (TRM)**
  A component-driven, technical framework which categorises the standards and technologies that support and enable the delivery of services.

These reference models are supported by a meta-model, which will assist agencies to understand the linkages between the reference models, providing the line of sight and traceability throughout the various domains.

Using AGA for Business Process Interoperability

The AGA provides a useful framework, both for internal agency use and for inter-agency collaboration. At an agency level, it provides an organisation with a taxonomy to trace from 'performance' or outcomes of a program or process down to underlying services and technologies which support it. This will assist agencies to make informed decisions which affect interoperability within and outside the agency.

Mapping a process into its supporting service components described within the Services Reference Model (SRM) also provides the opportunity to compare whole of government outcomes and to analyse processes at individual organisation and whole of government levels.

The SRM is critical as it provides the linkage between the business domains and the technology domains of the architecture. It is at the level of the SRM that agencies will find the greatest potential to identify common services and opportunities to collaborate.

Therefore, to assist in the linkage between business processes and the technology layers which support them, it is important to identify the service components that are utilised by activities within a business process.

As discussed previously, activities are the operations and practices within a business process. The Business Reference Model (BRM) that will form part of the Australian Government Architecture (AGA) will provide a taxonomy for classifying business processes through a functional view of the way that government operates.

In supporting the business process, activities may utilise (or, in architecture terms, 'consume') one service component or multiple service components. Service components are discrete units of functionality; they may be manual or IT-specific; and the SRM defines a taxonomy for classifying these service components.

As a service component may also be consumed by multiple activities, the concept of 'loose coupling' becomes important. Coupling is the dependence of two elements on one another. Therefore, the tighter the coupling in an enterprise, the harder it is to change systems, services and processes without upsetting the entire organisational environment. Looser coupling enables processes to be improved or changed, or for new shared or standardised services to be introduced into business processes, without the need to change the entire process.

These service components enable an agency to identify the technologies and standards which support these services and assist in bridging the business/IT divide. Technologies

and standards will be classified using the taxonomy defined within the Technical Reference Model (TRM) in the AGA.

By mapping a business process into its supporting activities and then mapping those activities to the service component or components using the taxonomy within the AGA, collaborating agencies can identify common services and potential synergies. This mapping also provides line of sight from the business processes into the supporting IT applications, standards and services.

Architecture and business process
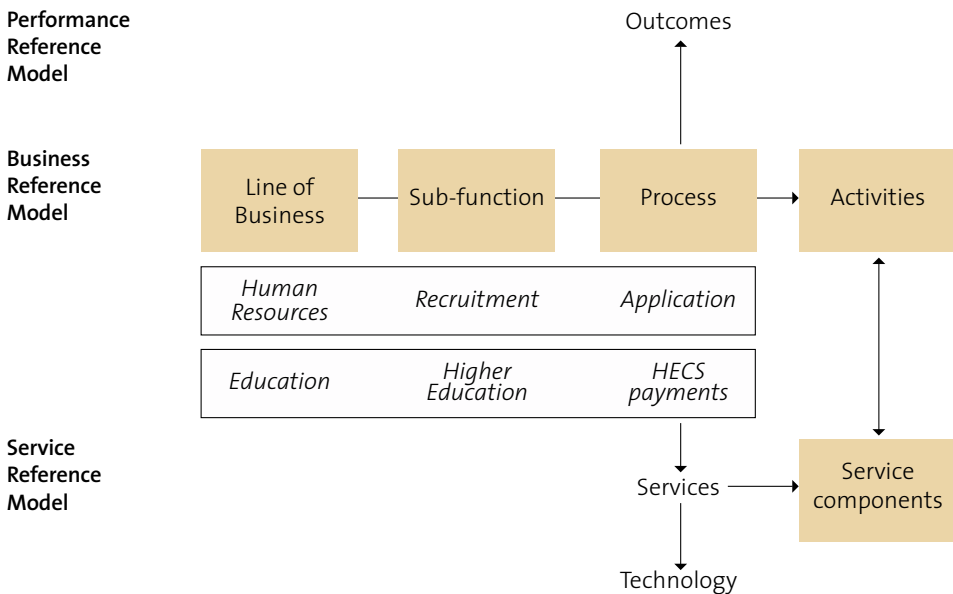
Standards

Standards are a critical element to interoperability at all levels – information, technical and business process modelling. Standards ensure that all participants in a collaborative project or initiative have a reference point which is common and understood. It reduces the risk of miscommunication, misunderstandings and the need for re-work.

The Business Process Interoperability Framework (BPIF) uses the Australian Government Architecture (AGA) as a standardised taxonomy to classify business processes and their supporting services.

The BPIF also provides a roadmap which operates as a high-level methodology for undertaking business process interoperability in government.

However, successful implementation of the AGA and the BPIF requires agencies to adopt common standards for implementing systems, storing and sharing information and documenting business processes.

A number of industry standards and proprietary solutions exist to support agencies to map, model and manage processes. While the BPIF does not endorse one approach or another, it is critical that an agency or agencies undertaking business process interoperability agree on a common set of standards, methodologies and frameworks.

Some emerging standards used to model business processes include Business Process Execution Language (BPEL), Unified Modelling Language (UML) and Business Process Modelling Notation (BPMN).

While there are a number of different approaches to process mapping and modelling, BPMN is an emerging business-focused industry standard. A short outline of the BPMN standard is shown at Appendix B to assist agencies in exploring one such modelling standard.

A large number of modelling tools exist to support business process interoperability and a number of these will support multiple industry standards, as well as proprietary modelling approaches.

Modelling tools vary from simple tools, which enable the diagrammatical representation of processes, through to more complex systems which enable roles and responsibilities to be captured, current and future processes to be simulated and which are closely integrated into software development tools or applications. Criteria to assist agencies to select an appropriate business process modelling tool are shown at Appendix C.

The Australian Government Business Process Interoperability Framework **Enabling Seamless Service Delivery**

eight The Journey to Business
Process Interoperability

eight

The Journey to Business Process Interoperability

Where to start?

Business process interoperability is not an end in itself, but a means of enabling strategy to achieve an agreed business goal. Business process interoperability may result from the pursuit of high-level goals shared across multiple agencies or it may be introduced at a lower level initially to enhance the performance of a particular function or program.

Where it starts and how implementation progresses within and between organisations depends on a number of internal conditions, as well as conditions and prospects in the external environment.

The starting point and associated conditions strongly influence the pattern which business process interoperability may follow, as well as how it is sustained and managed.

To assist organisations considering or implementing business process interoperability, a number of aids are provided in this section of the BPIF:
- Business Process Interoperability Roadmap
- Business Process Interoperability Maturity Model
- Business Process Interoperability Case Studies

nine Business Process
Interoperability Roadmap

nine

Business Process Interoperability Roadmap

The following roadmap provides a high-level methodology for implementing business process interoperability in the Australian Government. The roadmap provides some links to supporting material within the Business Process Interoperability Framework (BPIF) and in other areas of government. A more comprehensive list of resources that will support these activities is available at Appendix A.

Given the focus on interoperability, this roadmap is most appropriate for cross-agency process management and may not be as applicable for internal agency process improvement. Documents such as the recently launched MAC 7 Report: *Reducing red tape in the APS* provides guidance to agencies for internal process improvement.

The BPIF principles provide the foundation for agencies to use in decisions and actions associated with moving through this roadmap.

The roadmap is divided into six stages:

1. Plan
2. Agree
3. Discover
4. Map and Model
5. Implement
6. Monitor and Review

The roadmap is not a linear process and each step will need to be reviewed or repeated as lessons are learned and goals, objectives and priorities change. Organisations will also naturally mature in their approach to business process interoperability and this will also change the approach.

It needs to be recognised that progress towards business process interoperability should be iterative and a constant feedback loop needs to be employed throughout each stage of this approach.

Agencies may need to revisit stages along the journey due to unforeseen circumstances or as unplanned issues arise. The pace of change in government may also necessitate ongoing reviews of strategic intent. As priorities shift, goals and drivers identified in the initial plan may change and business process interoperability may need to be reviewed to ensure alignment with strategic goals.
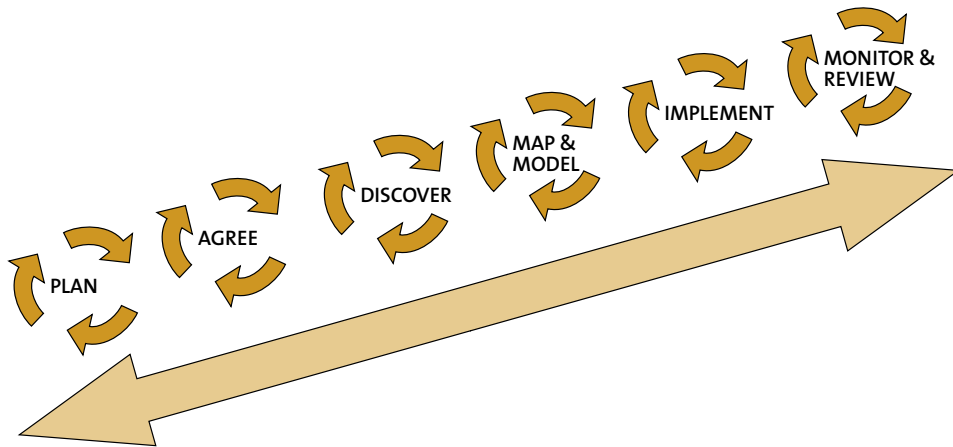
1. Plan

The planning stage prior to undertaking a collaborative initiative utilising business process interoperability, is critical. It will enable the agencies involved to properly establish the context and drivers for change, the expectations of the initiative and to understand the likely challenges. This is, effectively, the business case for business process interoperability.

Establishing these parameters early and clearly communicating them to all parties involved throughout the life of the exercise is a critical factor for success. Continuing to review the plans throughout the life of the exercise to ensure that the objectives, intent, goals and challenges are current is also important.

Supporting tools to assist in the planning stage include the Australian Government Architecture, the Connecting Government report and website, the BPIF maturity model and a list of motivations for business process interoperability on page 8 of the BPIF.

- **Intent/Goal**
    - Identify the relevant drivers or intent for change. Identify relevant organisational changes, new policy initiatives, collaborative projects or machinery of government changes that are driving the need for business process interoperability.
    - Identify potential conflicts, i.e. there may be multiple and possibly incompatible drivers that may cause conflict and so need to be managed.
    - Align with whole of government goals and vision. Identify recent policy announcements/speeches or reports that flag changes in Australian Government strategy and ensure the business process interoperability is compatible and aligned to these whole of government objectives.
- **External context**
    - Establish a functional view of your agencies in relation to other agencies. The Australian Government Architecture provides a taxonomy to assist with aligning your agency to relevant Australian Government functions.
    - Identify the various roles and drivers of all participating agencies. This will assist in providing and developing an understanding of the motivations of

agencies which you are seeking to collaborate with and to determine the appetite for collaboration.

- **Organisational capability**
  - Determine the capability and readiness of your agency for change. The maturity model in the BPIF will assist you in determining the preparedness of your agency to undertake business process interoperability.
  - Determine the capability and readiness of collaborating agencies. Similarly, the success or failure of a collaborative initiative will depend on the preparedness of all participants to support and engage in collaboration. Understanding each agency's relative maturity will also help to focus on and deal with likely challenges to a successful collaboration.

2. Agree

Once the intent, drivers and rationale for collaboration are well understood, the next step is to gain commitment for collaboration and agree the arrangements.

Tools which the Australian Government has developed to guide and initiate collaborative undertakings include the National Service Improvement Framework (NSIF) and GovDex.

The NSIF is a suite of re-usable documents and tools which aim to deliver enhanced collaborative service delivery arrangements across government agencies. The NSIF provides a tiered approach for government agencies to follow when seeking to collaborate and defines a process where potential partners to collaboration can build on agreements in incremental tiers (for more information go to http://www.nsif.gov.au).

GovDex (www.govdex.gov.au) provides a collaborative tool for managing cross-agency projects and for storing shared information, models and resources.

- **Collaboration**
  - Establish and agree arrangements for collaboration (NSIF can support this process).
  - Establish collaborative mechanisms for sharing information and resources, such as GovDex: www.govdex.gov.au.
  - Establish and agree appropriate cross-agency management and governance arrangements, i.e. agree a lead agency and establish terms of reference for establishing steering committees and working groups. Guidance on cross-agency management and governance structures can be found on the Connected Government website: www.connected.gov.au.
  - Identify individual and joint responsibilities of participating agencies.
- **Standards**
  - Agree standards. Establish frameworks, reference models, modelling tools and standards that will be used to support the collaboration. Appendix B details one particular standard for modelling business processes – BPMN. Appendix C provides a checklist for selecting an appropriate modelling tool.
- **Communication**
  - Establish and agree an appropriate communication strategy across the participating agencies.

- Identify key stakeholders, both within and external to collaborating agencies, that will need to be engaged.

3. Discover

Once the collaborative arrangements have been agreed and established, it is necessary to 'discover' the processes which will form the basis for the collaboration.

Start small in an area where there is a high level of readiness and receptiveness to sharing services and process across agency boundaries or across internal boundaries and where results can be generated quickly. The maturity model and architecture will help to guide you towards these areas.

Simple, low-detail mapping of processes, with only the high-level activities captured, will assist with the identification of issues, participants and users at this stage.

- **Process discovery**
  - Identify common processes which could be standardised between the participating agencies. Use Australian Government Architecture as the common taxonomy to support this activity.
  - Identify processes for collaborative improvement, i.e. those processes which move across agency boundaries. These should clearly be delivering on the defined goals and fit within the context for collaboration agreed in stage 2.
- **High-level mapping**
  - Map identified processes at a high level – simple activity maps.
  - Use these maps to:
    - identify current process owners and participants within agencies
    - identify external users, i.e. citizens, businesses and other organisations
    - identify relevant information about the processes, e.g. internal documents, ANAO reports and better practice guidance (see Appendix A for key sources).
- **Capture issues**
  - Commence consultation with process participants to identify issues, problems and positives with processes. This will provide the context for further, more detailed consultation and assist in the analysis of your process models.
  - Prioritise these processes for improvement. The identification of issues will help you to pinpoint those processes most in need of improvement and will also assist in making a judgement about the relative challenges in implementation.

4. Map and Model

Once the processes have been identified and mapped at a high level and the issues associated with these processes have been captured, the next step is to move to a detailed mapping and modelling exercise.

Critical to success at this stage is establishing a base line to analyse the impact of the proposed change. It will also be critical to understand the impact of an interoperability initiative on users, both internal and external to government.

There are tools available which can support agencies to undertake this analysis. More advanced modelling tools will have simulation capabilities so you can model the impact that changes in process will have in real time.

A good example of a tool used in government to support the measurement and monitoring of the impact and effectiveness of initiatives is the Business Cost Calculator, administered by the Office of Best Practice Regulation (OBPR, formerly the Office of Regulation Review), and which is a tool for estimating the compliance costs of regulation (http://www.obpr.gov.au/businesscostcalculator). It provides an automated and standard process for quantifying compliance costs of regulation on business, using an activity-based costing methodology.

Effective and detailed engagement with participants and users is critical at this stage of the process and stakeholders will need to be carefully managed.

- **Model the 'as is'**
  - Establish mechanisms (workshops, working groups and other collaborative mechanisms) to engage with current process participants and users to model existing processes. Use the consistent standards and approaches agreed in stage 2.
  - Engage IT areas to identify linkages with supporting technology.
  - Analyse issues identified in stage 3. Pinpoint the sources of these issues within the process with feedback from participants.
  - Use the Australian Government Architecture as the taxonomy for describing business processes and to identify supporting services and technology. Higher-level activity maps will be most useful in drawing these linkages.
  - Use high-level maps developed in stage 3 to drill down further into more detailed activities, roles, decision-points, responsibilities and hand-offs.
  - Identify existing performance measures (such as Key Performance Indicators – KPIs), including any legacy cross-agency arrangements or service level agreements (SLAs) to establish a baseline.
- **Share and validate models**
  - Publish and share models to participants in an easy-to-read format, such as HTML.
  - Capture maps, models and other information in a shared resource (a repository like GovDex – www.govdex.gov.au – will be useful for sharing information, maps and models).
  - Gain agreement from participants that the models are a true representation of the process.
  - Gain agreement from IT areas to ensure that the linkages between technology and process have been properly captured.
- **Determine the 'to be'**
  - Analyse process models and consult with participants and process owners to identify possible improvements.
  - Compare process models between agencies to identify possible common approaches or the ability to standardise processes.
  - Analyse process models to understand linkages between agencies, including process hand-offs and information exchanges, and opportunities for these to be streamlined, rationalised or improved.

- Ensure 'to be' scenario addresses the issues identified in the discovery phase (stage 3) and pinpointed in the development of your 'as is' models.
- Use architecture as a common framework to identify opportunities for process improvement in the services and technology layers. Opportunities for reducing duplication, rationalising systems or re-using existing service components should be identified.
- Engage IT areas to identify possible technological options to support process improvement.
- Establish new desired performance measures and benchmarks. Best practice benchmarks may be used as a guide.
- Determine whether these performance measures or benchmarks will need to be hard (defined in and managed by SLAs or similar agreements) or soft (such as operating guidelines or better practice targets).
- Use architecture to trace the impact that changes in process will have on outcomes and to identify possible changes in the supporting services and technology and the flow of information.
- Publish and share 'to be' models in an easy to read format, such as HTML.
- Gain agreement from senior management and the established governance mechanism for any proposed changes.
- Governance arrangements may need to be reviewed to ensure that the relevant people are being engaged in decision-making.

5. Implement

While analysis will often be performed top-down, with strategic outcomes in mind, implementation will need to be bottom-up. That is why it is critical to engage process owners, participants and users in the earlier stages. A 'no surprises' approach to planning, discovery, mapping and modelling will help to ensure the necessary support for implementing change.

As with all the stages of business process interoperability, the implementation will need to be iterative and will need to refer back to the earlier stages of the process to ensure that the original aims and intents are being met. Events in the implementation may mean that earlier stages need to be revisited, particularly the Discover, and Map and Model stages.

The PM&C Cabinet Implementation Unit's *Guide to Preparing Implementation Plans* provides some useful guidance for agencies to prepare an effective implementation plan.
- **Implement the 'to be' scenario**
  - Develop an implementation strategy to move the selected processes from the 'as is' to the 'to be'. This strategy should align with the context which was established in step 1 and should leverage the identified drivers for change.
  - Communicating progress and deliverables to process owners, participants and users is critical at every stage of the implementation. Outcomes, time-frames and changes should all be clearly articulated and progress should be documented.
  - Establish performance measures and the means for monitoring and managing them. Simple, non-critical processes may only require simple monitoring, such

as monthly evaluations or reports, while more complex, critical and time-sensitive processes might require tools such as business intelligence, integrated dashboards and scorecards.

- Engage process owners, users and participants on all proposed changes. Ensure time-frames and impacts are well understood and any concerns are identified early and managed.

- Utilise relevant implementation guidelines – i.e. the ANAO/PM&C *Better Practice Guide to Program and Policy Implementation*.

- Capture outcomes. Ensure that outcomes are captured and contained in a shared resource so that they can be re-used and reviewed.

6. Monitor and Review

Business process interoperability is an ongoing process and therefore monitoring and reviewing your arrangements is a key element to ensuring its ongoing success. While it is critical to monitor the overall performance of processes, it is important to establish mechanisms which capture issues that might be harder to identify and quantify, such as user or participant satisfaction.

This monitoring will provide guidance on when a process should be reviewed or revised.

- **Monitor performance**
  - Use agreed performance measures to monitor progress and to identify areas for ongoing improvement. The regularity and detail of this monitoring will again depend on the complexity and criticality of the process.
  - Establish ongoing mechanisms to identify issues from users, participants or process owners. Regular surveys, interviews or other feedback mechanisms will enable emerging issues to be captured early.
  - Use agreed benchmarks or triggers which will cause a process to be reviewed or revisited.

- **Review**
  - Review the process to ensure that collaborative process, standardised process or shared service is continuing to meet the objectives of participating agencies and users.
  - Events such as administrative, policy, ministerial or machinery of government changes may trigger a review to ensure that the collaborative process continues to align to the strategic goals of all agencies involved.

- **Revise**
  - If performance drops below agreed levels or goals change, it may be appropriate to make changes, both to the operation of individual processes or to the entire collaborative arrangements.
  - Depending on the time of operation of the process, it may be necessary to re-model the 'as is' to support the development of a new 'to be'.

ten Business Process Interoperability Maturity

ten

Business Process Interoperability Maturity

Organisations are dynamic and complex entities responding to changes in their business environments to remain competitive and relevant. Organisations evolve and grow in response to external and internal stimuli. How an organisation responds and the type of changes that ensue depend on a number of factors, including the level of maturity of the organisation's capabilities to interoperate. Interoperability can range from internal functional collaboration and co-ordination through to integration of multiple processes across multiple agencies, based on a service-oriented architecture.

Measuring capability

An agency will need to comprehend its 'as is' or current situation in relation to business process interoperability before it can sensibly begin to move towards its 'to be' or future situation. While it may not be the result of a structured or strategic approach, most agencies possess some level of business process interoperability capability by default. This reflects various factors including the use of management improvement practices, the level of 'process-awareness' of IT and Information Systems, governance arrangements, skills and strategic alignment. An organisation that has identified, mapped and documented its business processes as part of an application development project will have already developed some business process interoperability capability that could be built upon.

With the aid of a maturity model, an organisation can identify its current capability status (its 'as-is' interoperability position) and its desired capability maturity level (its 'to-be' interoperability position).[17]

Knowing where an organisation currently stands in its business process interoperability capability development is critical to the design of a strategy to move the organisation to its desired level of capability. An assessment of an organisation's maturity is an assessment of its interoperability readiness. Rosemann and de Bruin note that 'maturity as a measure to evaluate the capabilities of an organisation in regards to a certain discipline has become popular since the capability Maturity Model (CMM) was proposed by the Software Engineering Institute at Carnegie Mellon University for the evaluation of the software development process'.[18] Development of business process interoperability can be captured within a maturity model.

The following chart depicts efficiency and responsiveness (effectiveness) impacts for a range of interoperability strategies and capabilities within a whole of government approach to public policy and administration. The chart, in association with the accompanying table, provides a relatively quick way to determine an

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17   Adapted from Rosemann, M and de Bruin, T 2005, Application of a Holistic Model for Determining BPM Maturity, BPTrends, February, viewed at:
http://www.bptrends.com/publicationfiles/02%2D05%20WP%20Application%20of%20a%20Holistic%20Model%2D%20Rosemann%2DBruin%20%2D%E2%80%A6%2Epdf

18   Rosemann, M and de Bruin, T 2005, p.1.

organisation's maturity with respect to business process interoperability and whole of government readiness.

Pathway to Business Process Interoperability Maturity
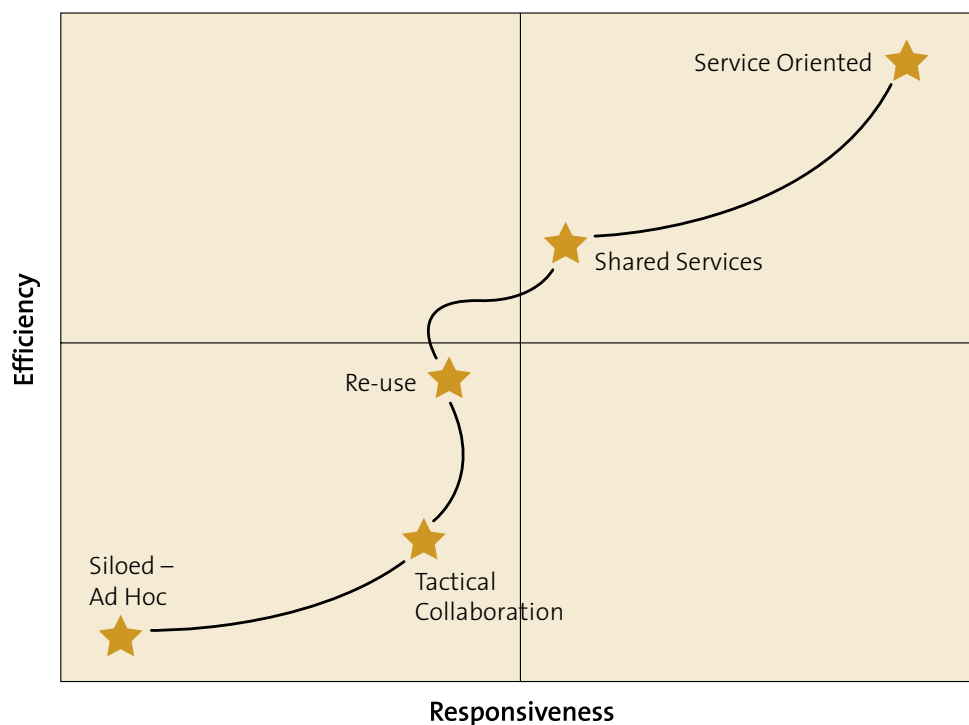
The approach to understanding maturity in the BPIF has been adapted from an approach advocated by David M. Fisher, now the director of the Defence Business Transformation Agency in the US Department of Defense. [19]

It also builds upon and contains many of the same elements of the service delivery capability model outlined in *Delivering Australian Government Services: Access and Distribution Strategy*, which includes all of the organisational elements which must be taken into account in planning and designing externally-focused government services.

The journey through each stage from a siloed organisation operating in a rather ad hoc, non-strategic way towards a service-oriented, whole of government enterprise is not a smooth, linear pathway. Transition from one stage to the next requires substantial investment of time and money in process management, technology and cultural change (people) over a number of years.

Also of importance are changes in strategy, governance and accountability. Together, these form five triggers for change – strategy, governance and accountability, business

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19   Fisher, D M 2004, The Business Process Maturity Model. A Practical Approach for Identifying Opportunities for Optimization, *BPTrends* viewed at http://www.bptrends.com/

processes, people and technology. These triggers provide a series of measures to determine the state of an organisation at each stage along the pathway to maturity.

Using the matrix at Appendix D as a guide, agencies can undertake a basic assessment of where they currently stand from a maturity perspective for each of the levers of change. It is likely that an agency will discover that its current state is not vertically aligned across the levers of change.

This will provide agencies with a guide to understanding the relative maturity of different levers for change and will point towards areas which need to be addressed, first to achieve alignment and a consistent basis for advancing to a new state (illustrated below). It will also provide a guide to identifying which areas of your agency are most likely to provide the greatest challenges in moving towards business process interoperability or undertaking a business transformation initiative.

	Siloed – Ad Hoc	Tactical Collaboration	Re-use	Shared Services	Service Oriented
Strategy			⬬		
Accountability/ Governance		⬬ ➡			
Business Processes		⬬ ➡			
People	⬬ ➡				
ICT		⬬			

Moving to higher levels of business process interoperability maturity requires agencies to move to a functional view of what it is that the agency does in a whole of government context. In many ways, this is the greatest challenge to business process interoperability and requires agencies to break down well established structural perspectives and arrangements. It also requires the development of strategy and agency goals which are clearly aligned to whole of government objectives.

Moving to higher levels of maturity also requires the establishment of effective cross-agency governance arrangements, controls and performance measures and viewing people, processes and technology as whole of government resources. For example, process owners will need to have responsibility outside of the organisational role. This is, by no means, an easy or short-term process.

The Australian Government Architecture provides a critical tool to support agencies to understand a whole of government context and provides the taxonomy for agencies to take a functional view of the organisation.

The approach supported by the matrix at Appendix D is a very rudimentary approach to establishing an agency's current whole of government business process interoperability

capability and is able to provide only indicative results. It will, however, provide a basis for agencies to commence business process interoperability activities with an understanding of the relative maturity of their agency in relation to others.

Agencies may wish to engage more sophisticated and rigorous approaches to determining their current status, particularly in relation to business process management that will assist in developing a strategy to move to a desired future position. [20]

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20   For example, the approach proposed by Tonia de Bruin of the Queensland University of Technology: http://www.bpm.fit.qut.edu.au/students/toniadebruin/

The Australian Government Business Process Interoperability Framework **Enabling Seamless Service Delivery**

eleven Business Process
Interoperability Case Studies

eleven

Business Process Interoperability Case Studies

Agencies will necessarily take very different approaches towards business process interoperability, depending on their level of maturity and their organisational requirements.

The accompanying case studies demonstrates two different approaches to achieving business process interoperability. The case study from the Department of Education, Science and Training (DEST) provides a perspective on internal business process management (BPM), while the case study from Centrelink demonstrates an approach to business process interoperability for a multi-agency project.

Approaches to business process management and interoperability may be bottom-up or top-down but support from senior management is always a critical success factor. If fully embraced by senior management, BPM can position an organisation on a journey from process mapping, through process improvement to business process management. The following case studies outline the different journeys that agencies are making towards the ultimate goal of standard, collaborative and interoperable processes across functional boundaries.

The two case studies have some common characteristics, including adoption of a whole of government approach to service delivery, a focus on external accountability and a desire for greater consistency through standardisation and process re-use. The Centrelink case study demonstrates the benefits of avoiding duplication and conflicts, and the need to clarify the roles and responsibilities of agencies in modelling a multi-agency initiative.

In each case, the focus is on building an understanding of internal business processes and identifying opportunities for efficiency and effectiveness improvements, including operating across structural boundaries. With knowledge and understanding of its own business processes, an organisation is well prepared to effectively consult with potential collaborators on streamlining processes across organisational boundaries through sharing, re-use or integration.

1. The Journey Towards Business Process Management – Department of Education, Science and Training (DEST)
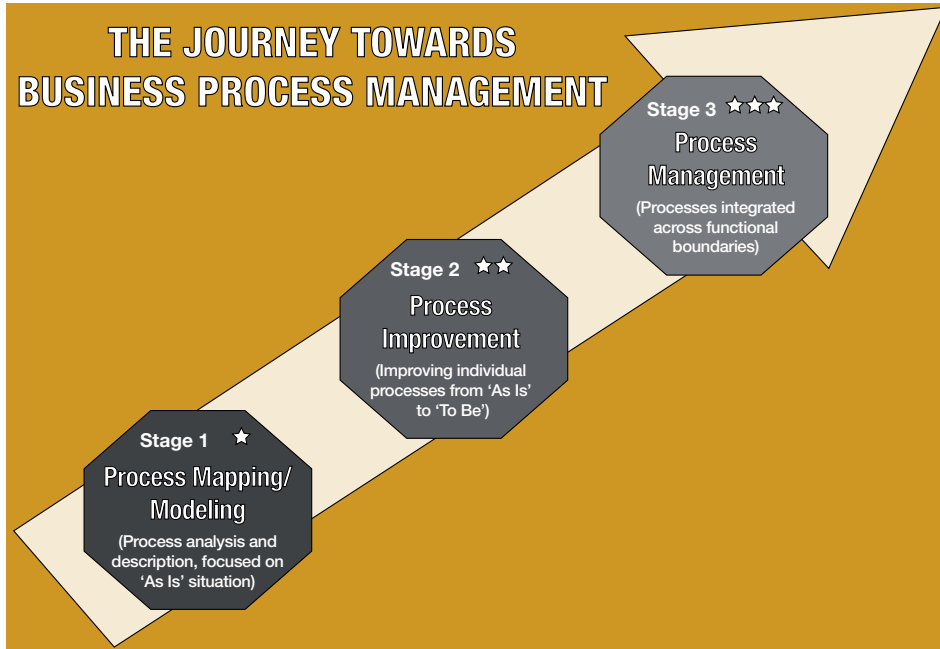
Within DEST, Business Process Management (BPM) was introduced by the Information Services Group (ISG) to strengthen program staff skills in the areas of business process mapping and documentation. DEST have introduced a three-stage approach to BPM (pictured above), starting with mapping and modelling of processes, through individual process improvement to an integrated approach to process management across functional boundaries.

BPM has not been made mandatory but has the clear support of senior management and was recently selected as the model for preparing DEST's business continuity plan. Senior management have been engaged through a high-level cross-departmental reference group.

BPM in DEST is supported by a detailed guide for practitioners and a separate document for senior management which provides an overview and the principles of BPM.

A series of pilot projects were used to validate that the tools and templates developed by ISG were effective in supporting the mapping and documentation of business processes in DEST and also to demonstrate the potential broader benefits of this approach. The pilot projects included internal corporate processes and external facing programs.

BPM is recognised as a key means for the Department to meet its strategic goal that 'strong business practices are essential to achieving what we have set out to do' and the component strategy 'to improve business processes by concentrating more on accountability, planning, analysis, risk and financial management, evaluation and project governance'.

The Department acknowledges the benefits of BPM to include standardised processes, common language, consistency and re-use of successful processes. At the highest stage of development, processes that cross functional boundaries are identified and integrated or rationalised. Another benefit of the approach has been to define.

Within DEST, it is recognised that BPM is potentially applicable to a wide range of business circumstances including:
- business transformation
- program/policy delivery performance
- business performance management
- organisation restructure
- machinery of government change

2. National Emergency Call Centre – Centrelink
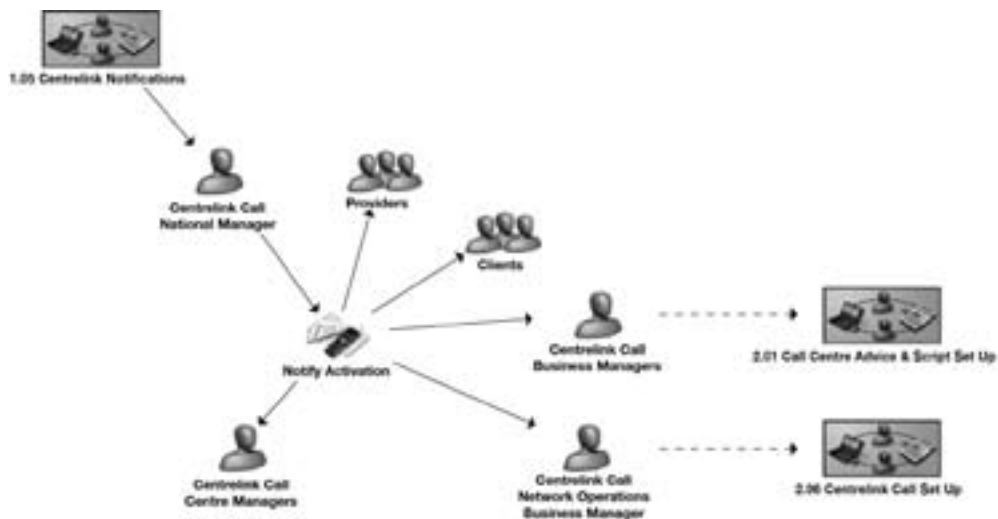
Centrelink established a Business Process Mapping and Modelling (BPMM) Team to assist with service delivery design and support in May 2006. Strong demand has seen the team grow since then, with a mixture of business and IT skills. The team has mapped and modelled a number of processes across Centrelink, using the Holocentric Modeller tool (sample process from the models pictured).

In August 2006, the BPMM team was engaged by the Emergency Management Team (EMT) in Centrelink to assist with process design issues for the proposed National Emergency Call Centre (NECC).

The NECC is a $10.7million initiative announced in the 2006-07 Budget to provide an immediate single point of contact for enquiries from the public in the case of a major national or international emergency or disaster.

The NECC is a true whole of government initiative, involving the Attorney-General's Department, the Department of Human Services, the Department of Health and Ageing,

the Department of Defence, the Child Support Agency, the Australian Taxation Office, Medicare Australia and Centrelink. The call centre is to be distributed across five agencies and requires the capacity to handle up to 50,000 calls per hour.

Given the number of agencies involved, one of the key issues for the BPMM team in Centrelink was to establish which agencies were responsible for which elements of the process and which staff in Centrelink were responsible for Centrelink activities. An end-to-end process for the activation and de-activation of the NECC also needed to be developed.

The BPMM Team facilitated several workshops with Centrelink EMT project staff to draft a model of the end-to-end process.

The modelling process highlighted issues, such as possible role conflicts and duplication, the number of hand-offs and the processes needed to manage hand-offs. The modelling also highlighted the number of organisations/individuals needed to be notified at certain points of the process. By applying basic process design principles, the process was continually refined to the stage where Centrelink EMT Project staff believed they had a workable model.

The BPMM Team then facilitated a workshop with representatives of several agencies involved in the NECC project. The model was presented to representatives from the responsible agencies and was used to clarify the activities, activity flows and the roles and responsibilities in the end-to-end NECC process.

The Australian Government Business Process Interoperability Framework **Enabling Seamless Service Delivery**

appendices

Appendix A

Sources of Support for Business Process Interoperability

The following sources offer tools, guidelines and examples of better practices and standards which will assist agencies to efficiently and effectively adopt a whole of government approach to managing processes, policy and program development and service delivery.

Better Practice Guidance for Improving Processes

ANAO Better Practice Guides

ANAO Better Practice Guides (BPGs) aim to improve public administration by providing a mechanism whereby better practices employed in agencies are recognised and promulgated to all Australian Government entities. This can involve examining practices in the public or private sectors in Australia or overseas. ANAO's emphasis is to identify, assess and articulate good practice from the Agency's knowledge and understanding of the public sector, as well as areas where improvements are warranted.

http://www.anao.gov.au/director/publications/betterpracguides.cfm

Australian Public Service Commission Building Capability

The Australian Public Service Commission provides agencies with tools, guidance and resources to work more effectively. Resources provided include HR capability modelling, recruitment kits, management resources and leadership frameworks and systems.

http://www.apsc.gov.au/buildingcapability/index.html

Better Practice Centre @ AGIMO

The AGIMO Better Practice Program facilitates information sharing and improved access to government information and services through a range of e-Government initiatives in collaboration with Australian Government agencies. It includes better practice guides on Internet/e-Government related processes and host contributions from government agencies. The aim is to promote excellence in e-Government.

http://www.agimo.gov.au/practice

Better practice guide on governance arrangements in government

The aim of this guide is to promote consistency in governance arrangements of Australian Government bodies, while reinforcing the principles set out in the *Review of Corporate Governance of Statutory Authorities and Office Holders*. This is in line with the Department of Finance and Administration's ongoing role of promoting better practice governance of Australian Government bodies generally. The policies set out in the document provide a strong platform for informed discussion when officials consult with, or seek advice from, central agencies on the merits of alternative structures for Australian Government bodies.

http://www.finance.gov.au/FinFramework/docs/FMR2.pdf

Business Cost Calculator

Business Cost Calculator is administered by the Office of Best Practice Regulation (OBPR, formerly the Office of Regulation Review). It is a tool for estimating the compliance costs of regulation. It provides an automated and standard process for quantifying compliance costs of regulation on business, using an activity-based costing methodology.

http://www.obpr.gov.au/businesscostcalculator

Cabinet Implementation Unit

The Cabinet Implementation Unit helps departments and agencies improve the way they develop and implement the Australian Government's decisions, and how they report on the measures being implemented. The Unit's website provides practical information to help public servants and those who work with them on the implementation of projects and the management of programs, and the implementation and delivery of initiatives and ongoing programs. Specific areas where the Unit can help include preparing new policy proposals, developing implementation plans for new measures or programs and support for better project and program management.

http://www.pmc.gov.au/implementation/index.cfm

Delivering Australian Government Services: Access and Distribution Strategy

The Access and Distribution Strategy sets out a high-level framework that promotes an environment in which agencies are able to integrate and share services and information across a range of channels. To achieve this aim, the Strategy advocates that agencies build whole of government capacity, develop technical and information interoperability, and take a strategic approach to the use of service delivery channels.

http://www.agimo.gov.au/publications/2006/may/ads

Delivering Australian Government Services: Managing Multiple Channels

Managing Multiple Channels recognises that Australian Government agencies deliver services to customers/citizens through a variety of channels (shop fronts, call centres, websites, etc) and outlines a process for aligning customer needs, services and channel provision.

http://www.agimo.gov.au/publications/2006/may/mmc

Finance and Budget process advice

The Financial Framework output develops and maintains the financial regulatory framework for the general government sector, focusing on effective financial governance, financial management and accountability. The Budget Advice output supports Australian Government agencies through advice on the outcomes and outputs framework and performance management system.

http://www.finance.gov.au/GF/

ICT Business Case Guidance

Rigorous business case planning ensures that ICT investment across government is well planned and managed. Robust business cases reduce the risk of time and cost overruns and of projects not achieving anticipated benefits. Better business cases strengthen the quality of strategic alignment, project planning, financial estimates, and cost benefit and options analysis. The ICT Business Case Guide and Tools helps agencies to develop business cases with comprehensive cost benefit analysis and more detailed project planning. Agencies trialing the ICT Business Case Guide and Tools over the past year report that benefits include the development of a common language around investment and business planning.

http://www.agimo.gov.au/government/the_ict_investment_framework/business_case_tools_and_review

Implementing machinery of government changes

Guide to implementing machinery of government changes provides practical guidance to help agencies implement changes. It relates primarily to moves between Australian Public Service (APS) agencies, subject to the *Public Service Act 1999* and the *Financial Management and Accountability Act 1997*, but may also provide useful guidance for moves into, or out of, the APS. The Guide provides an overview of the MoG process, principles and approaches for planning and implementing MoG changes, guidance on financial management and people management and advice on managing physical relocations, records and taxation.

http://www.finance.gov.au/FinFramework/machinery_of_government_change.html

Outcomes and Outputs Framework

The outcomes and output framework of the Department of Finance and Administration provides guidance to departments and agencies for structuring corporate governance and management arrangements and for reporting on planned and actual performance.

http://www.finance.gov.au/budgetgroup/commonwealth%5Fbudget%5F%2D%5Foverview/the%5Foutcomes%5F%5F%5Foutputs%5Fframewo.html

Reducing Red Tape in the APS

This report focuses on internal and the whole of government regulatory and administrative requirements of the Australian Government. It sets out a principles-based framework for the review of existing requirements and for the scrutiny of proposals for new requirements, with a view to reducing red tape. The report begins with an overview of the framework for design and review of requirements and a discussion of the main elements of the process.

http://www.apsc.gov.au/mac/redtape.htm

Source IT

This is a site for Australian Government agencies that are dealing with Information and Communication Technology (ICT) sourcing issues.

http://www.sourceit.gov.au/sourceit

Collaborative Guidance and Tools

2006 e-Government Strategy

The Australian Government released the first version of e-Government strategy, *Better Services, Better Government* in 2002. Since then, much has been done to achieve the vision outlined in that document and there is no doubt that Australians now have 'better services' and 'better government'. The 2005-06 e-Government strategy, *Responsive Government: A New Service Agenda*, builds on the momentum and achievements of the first strategy, taking into account lessons learned to deliver an even more coordinated and citizen-driven focus to the government's e-Government initiatives. It is about strategically applying ICT to improve and reform government processes. The strategy recognises the devolved nature of the Australian Government and the importance of supporting cooperation and sharing to realise the potential of e-Government.

http://www.agimo.gov.au/publications/2006/march/introduction_to_responsive_government

The Australian Government Architecture

The Australian Government Architecture (AGA) aims to assist in the delivery of more consistent and cohesive service to citizens and to support the more cost-effective delivery of ICT services by government, providing a framework that:
- provides a common language for agencies involved in the delivery of cross-agency services
- supports the identification of duplicate, re-usable and sharable services
- provides a basis for the objective review of ICT investment by government
- enables more cost-effective and timely delivery of ICT services through a repository of standards, principles and templates which assist in the design and delivery of ICT capability and, in turn, business services to citizens.

http://www.agimo.gov.au/government/australian_government_architecture

Australian Government Information Interoperability Framework

The Framework provides practical guidance for achieving the successful transfer of information across agency boundaries. The Information Interoperability Framework aims to assist agencies to improve their capacity for information management in support of information exchange.

http://www.agimo.gov.au/publications/2006/may/iif

Australian Government Technical Interoperability Framework

The Australian Government Technical Interoperability Framework was developed by the Interoperability Framework Working Group (IFWG), a reference group of senior technical architects nominated by the Chief Information Officers' Committee (CIOC) and supported by AGIMO. The latest version of the Framework responds to developments in the ICT industry supporting business and government interconnectivity. The Framework specifies a conceptual model and agreed technical standards which support collaboration between Australian Government agencies. Adopting common technical protocols and standards will ensure government ICT systems interoperate in a trusted way with partners from industry and other governments. Interoperability will improve efficiency, reduce costs to business and government and will support agencies' capacity to respond to public policy developments.

http://www.agimo.gov.au/publications/2005/04/agtifv2#Australian20Technical20Framework

Connected Government: Agencies Working Together

This good practice guide is derived from the MAC Report: *Connecting Government: Whole of Government Responses to Australia's Priority Challenges*, Good Practice Guides and gives practical advice on working whole of government. This information can be used to work through whole of government projects from determining how to structure a group working across departments to managing emergency responses. It will also be useful for those already working on whole of government initiatives.

http://www.connected.gov.au/good_practice_guide

GovDex

GovDex is a resource developed by government agencies to facilitate business process collaboration across policy portfolios, such as Taxation or Human Services, and across administrative jurisdictions. GovDex promotes effective and efficient information sharing, which is core to achieving collaboration. It provides governance, tools, methods and re-usable technical components which government agencies can use to assemble and deploy information services on their different technology platforms. GovDex is a key enabler to a whole of government approach to IT service development and deployment.

https://www.govdex.gov.au/user/index.do

Guidelines for Establishing and Facilitating Communities of Practice

A community of practice is a group of peers with a common sense of purpose who agree to work together to share information, build knowledge, develop expertise and solve problems. Communities of practice are characterised by the willing participation of members and their ongoing interaction in developing a chosen area of practice. These guidelines provide tips on establishing and facilitating communities of practice.

http://www.agimo.gov.au/resources/cop/guidelines

The National Service Improvement Framework

The National Service Improvement Framework (NSIF) provides a series of re-usable documents, tools and templates to facilitate collaboration between government agencies. The National Service Improvement Framework aims to facilitate projects requiring collaboration within and between governments at all levels.

The National Service Improvement Framework website provides a knowledge base that will assist Local, State/Territory and Australian Government departments and agencies in the effective implementation of cross-jurisdictional projects. The key objectives of the National Service Improvement Framework are:

- to increase citizen satisfaction in dealing with government
- to improve the effectiveness and efficiency of government
- to build the capacity for cross-jurisdictional collaboration.

http://www.nsif.gov.au/

Working Together: Principles and Practices to Guide the Australian Public Service

The Management Advisory Committee has produced a best practice checklist based on the report, *Connecting Government*. The aim of the Guide is to assist agencies to achieve effective outcomes from work conducted jointly. It provides collaborating agencies with a checklist of responsibilities.

http://www.apsc.gov.au/mac/workingguide.htm

Appendix B

Business Process Modelling Notation (BPMN)

BPMN was developed by the Business Process Management Initiative (BPMI) under the Object Management Group (OMG). BPMN defines a Business Process Diagram (BPD), which is based on a flowcharting technique tailored for creating graphical models of business process operations.

The BPIF does not endorse BPMN or any other standard and any modelling technique used by agencies will need to suit their business requirements. However, it is important that those engaging in a collaborative business process activity agree on a common modelling technique that meets all the participants' needs.

Modelling in BPMN uses a simple set of diagrams with a small set of graphical elements to assist business users, as well as developers, to understand the flow and the process. The core set of symbols and a description of each element is below.

Core Set of BPMN Elements

Source: http://www.bpmn.org
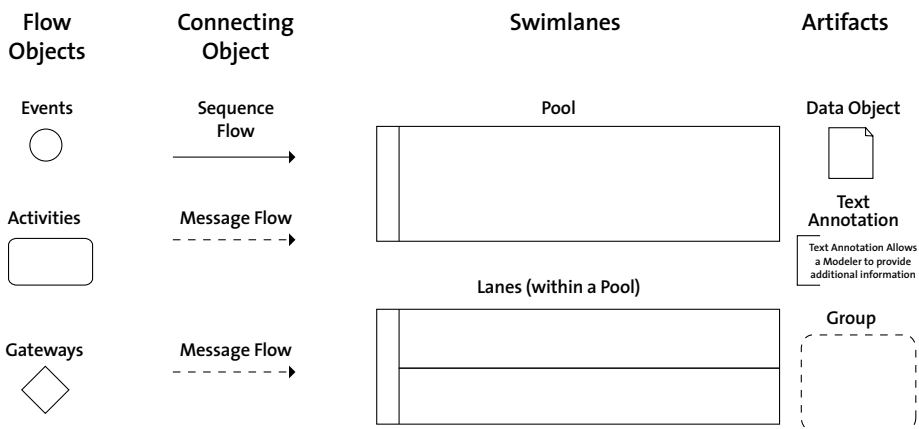
Flow objects

Flow Objects consist of only three core elements. The three Flow Objects are:
- **Event:** An Event is represented with a circle and is something that happens. It could be Start, Intermediate or End of a process.
- **Activity:** An Activity is represented with a rounded-corner rectangle and shows us the kind of work which must be done. It could be a task or a sub-process.
- **Gateway:** A Gateway is represented with a diamond shape and will determine different decision points in a process. It will also determine forking, merging and joining of paths.

Connecting objects

The Flow Objects are connected to each other with Connecting Objects. There are three different Connecting Objects:

- **Sequence Flow:** A Sequence Flow is represented with a solid line and arrowhead and shows in which order the activities will be performed. A diagonal slash across the line close to the origin indicates the default choice of a decision.
- **Message Flow:** A Message Flow is represented with a dashed line and an open arrowhead. It tells us the messages which flow between two process participants.
- **Association:** An Association is represented with a dotted line and a line arrowhead. It is used to associate an Artefact, data or text to a Flow Object.

Swimlanes

A Swimlane is a visual mechanism of organising different activities into categories of the same functionality. There are two different swimlanes:

- **Pool:** A Pool is represented with a big rectangle which contains many Flow Objects, Connecting Objects and Artefacts.
- **Lane:** A Lane is represented as a sub-part of the pool. The lanes are used to organise the Flow Objects, Connecting Objects and Artefacts more precisely.

Artefacts

Artefacts allow developers to bring some more information into the model/diagram. In this way, the model/diagram becomes more readable. There are three pre-defined Artefacts, which are:

- **Data Objects:** Data Objects are used to show the reader which data is required or produced in an activity.
- **Group:** A Group is represented with a rounded-corner rectangle and dashed lines. The Group is used to group different activities but does not affect the flow in the diagram.
- **Annotation:** An Annotation is used to give the reader of the model/diagram an understandable impression.

Simple BPMN workflow diagram – working group meeting

Source: http://www.bpmn.org
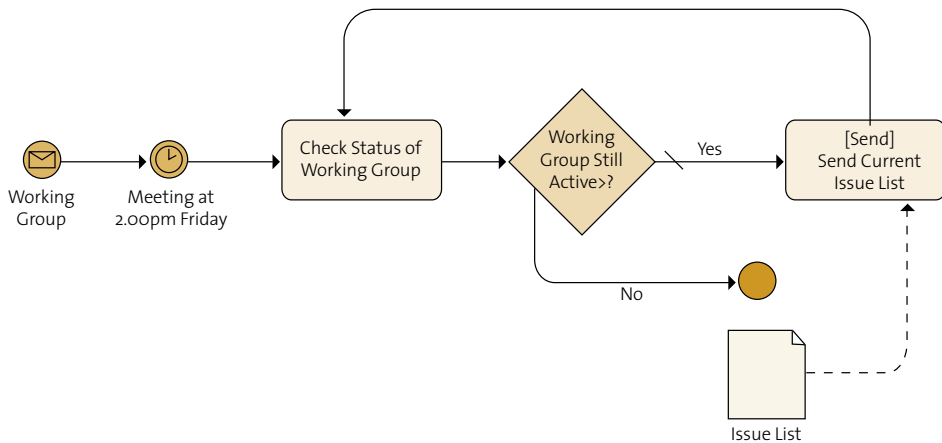
Appendix C

Automated Tools for Process Modelling

The conduct of a business process interoperability initiative will clearly benefit from the use of supporting tools. Although some smaller scale projects may be adequately supported by simple drawing programs with references made to information held in text format, most interoperability projects will benefit from the use of more advanced modelling tools.

This section has been developed to support an agency with the selection of an appropriate modelling tool by presenting a list of the desirable functionality that a user would need before commencing an interoperability project. This section can be used to review commercially available modelling tools and determine their suitability for use, based upon functionality.

Modelling tool selection criteria

Feature	Description	Desirability
Hierarchical decomposition of process graphics.	The process template is hierarchically structured such that high-level process 'decomposes' into further levels of detail. This approach to business modelling provides the user with the ability to drill down through subsequent levels in the model.	Essential
'End-to-end' process modelling	'End-to-end' process modelling allows a complete process to be mapped on a single electronic page in order to provide the user with an easily navigable customer view of the 'end-to-end' service delivery process.	Essential
XML reporting capability	The tool should be able to export information in XML format in order to easily exchange information with other modelling tools and applications.	Essential
Ability to deploy model in HTML	To gain widespread validation of the content of the model, the tool should be able to generate output in HTML format to make the information easily accessible by a wide audience.	Essential
Support for Enterprise Architecture	The tool should be capable of supporting an architectural view of business processes. The tool should be able to integrate with dedicated enterprise architecture tools to enable the alignment of business processes with services, data and technology. Some tools will also support standard architecture frameworks such as FEAF, on which AGA is based (as extensions or plug-ins) and this should be explored.	Essential

Feature	Description	Desirability
Support for Modelling Standards	Support for relevant modelling standards such as BPMN, BPEL and UML is highly desirable in that it will improve the likelihood of business process models to be shared and understood with collaborating agencies.	Highly desirable
Simulation capabilities –embedded maths engine	The success of process interoperability projects are dependant upon quantitative as well as a qualitative analysis; the analytical power of an embedded maths engine to simulate the real time operation of processes is highly desirable.	Highly desirable
Business process modelling rather than systems design	Many tools have originated from a systems development environment and have been adapted for the use of business process modelling projects. Business process interoperability projects will be best served by those modelling tools that have been developed specifically for business use, since the functionality will have been designed for use by operational (rather than IT) staff.	Highly desirable
Generation of large scale hard copy output on a single sheet	While modelling staff will tend to show a willingness to use soft copy information, the output should be made available to a wider audience, many of whom will require output in a hard copy format. The tool should therefore have the ability to generate 'end-to-end' process maps in large format rather than multiple, linked A4 pages.	Desirable

Appendix D
Business Process Interoperability Maturity Model

	Siloed – Ad Hoc	Tactical collaboration	Re-use	Shared services	Service oriented
Strategy	• Agency-centric; inward looking; piecemeal • React to change within 1 to 2 years • Limited knowledge of changes in customer needs • Opportunistic – emergent strategy • Reacts or follows trends • Integration within functions only	• Collaborative in selected areas • Adapt/react to change within 12 months • Inconsistent knowledge of changes in customer needs • Deliberate strategy driven by IT initiatives; IT leads change • Architecture used to identify where fit • Point-to-point links	• Collaborative • Deliberate identification of common processes and opportunities to reduce duplication • Aware of customer needs/ preferences •Adapt/react to change within 3 to 6 months • Architecture used to identify opportunities • Efficiency improvements •Increasingly strategic point-to-point links • Strategic approach to cross-agency interactions	• Highly collaborative – agencies more closely integrated • Strong whole of government service level agreements • Strong alignment with whole of government •Architecture used to develop common services • Point to multi-point links • Continuous improvement • Aware of customer needs/ preferences – end-user driven	• Government as an enterprise • Tightly integrated across agencie • Highly responsive to change • Optimise efficiency and responsiveness outcomes • Good traceability from outcomes/ performance to supporting services, business processes and technologies • Architecture is an integral part of planning • Aware of customer needs/ preferences • Comprehensive understanding of agency linkages

	Siloed – Ad Hoc	Tactical collaboration	Re-use	Shared services	Service oriented
Governance	• Vertical structure • Agency-specific arrangements • No formal or consistent cross-agency performance measurement • Coordination a major exercise	• Hierarchical structure and controls • Efficiency measures • No coordination across functions • Short-term tactical government arrangements • Limited enterprise-wide standards of governance	• Mixed structure –vertical and horizontal • Efficiency measures • Some multi-agency process controls in place	• Mixed structure –strongly horizontal • Efficiency and effectiveness key performance indicators • Systematic controls with performance measures defined on a whole of government perspective • Service level agreements with key performance indicators • Joint funding agreements	• Network structure • Efficiency and effectiveness key performance indicators • Cross-agency controls • Embedded in government business • Architecture aligned • Service level agreements and joint funding agreements
Process	• Few services and processes are explicitly defined • Static business processes • Vertical integration efficiencies • Process improvement is part of projects – project focused	• Aware of business processes and opportunities with potential for collaboration • Vertical integration and selected horizontal integration • Limited process mapping, re-engineering • Limited understanding of cross-functional and cross-agency process needs and dependencies	• Process focused and driven • Identification of common processes • Processes streamlined across agency boundaries • Adopt business process management • Processes valued as assets • Agree and use of standard template	• Actively initiate projects to find efficiencies in common business processes • Consolidation of common processes across agencies – shared service arrangements are established • Commitment to business process management • Agencies agree end-to-end process management • Processes valued as assets	• Total integration across government • Agencies have clear understanding of process as they move across functional and organisational boundaries • Agencies have thorough understanding of which processes are common and who is best placed to manage them • Agencies share resources to optimise process management

The Australian Government Business Process Interoperability Framework **Enabling Seamless Service Delivery**

	Siloed – Ad Hoc	Tactical collaboration	Re-use	Shared services	Service oriented
People	• Skills duplicated between divisions • Subject matter experts • Closed culture – adversarial; mistrust • Divisional and functional silos • No formal change management procedures	• Shared skills in functional areas • Cross-functional/ process team (IT led) • Collaboration on some cross-agency processes • Incomplete understanding of needs and value of business process interoperability	• Leaders committed to process management • Process leaders define, deploy, enhance and maintain core processes • Identification of agency-specific process owners who collaborate with other agencies • Critical focus on change management through people – resistance to change	• Leaders drive transition to cross-agency management of common business processes • Process owners manage processes that extend beyond their agency boundaries • Individual agencies focus on core business – mission critical areas • Process focus is ingrained in staff – people are integral with processes and technologies in developing and proving solutions	• Good cross-agency understanding of process and whole of government culture • Process training at whole of government level • Greater fluidity of people between agencies • Process owners manage processes along functional lines rather than managing organisation structures
Technology	• Independent systems • Integration only within functions • Legacy enterprise system(s) • A bottleneck to change • Value of IT unknown	• Point-to-point integration • IT leads cross-functional initiatives • Systems/ project focus • Utilise architecture to identify collaborative opportunities	• System and process consolidation to streamline processes and information management • Utilise architecture to identify commonality	• Whole of government continuous process improvement – identify areas for efficiency improvements • Utilise business process management methods across government to automate processes • Use architecture to identify synergies	• Architectural support for whole of government activities – underpins all that is done • Utilise business process management methods across government to automate processes

Appendix E
Glossary of Terms

Activity

The individual steps, operations and practices within a business process. For architectural purposes, an activity may align directly to a service component or may consume multiple service components, as defined in the Australian Government Architecture (AGA).

Architecture

Architecture provides a common taxonomy and a set of standards and guidelines that enable government agencies and departments to re-use common business processes and information systems.

Australian Government Architecture (AGA)

A business-based framework for Australian Government-wide improvement, developed by the Australian Government Information Management Office (AGIMO) of the Department of Finance and Administration. (http://www.agimo.gov.au/government/australian_government_architecture)

AGA Reference Model

The Australian Government Architecture (AGA) consists of a set of inter-related 'reference models' designed to facilitate cross-agency analysis and the identification of duplicative investments, gaps and opportunities for collaboration within and across agencies.

The AGA Reference Models are heavily based on the US FEA reference models.

Artefact

An artefact is a graphical object that provides supporting information about a process or elements within a process (BPMN Specification – http://www.omg.org).

Attribute

A characteristic or property of an object, such as weight, size or colour. A construct whereby objects or individuals can be distinguished (WordNet).

BRM Business Area

The top tier of the BRM. Business Areas separate government operations into high-level categories relating to the purpose of government (Services for Citizens), the mechanisms the government uses to achieve its purpose (Mode of Delivery), the support functions necessary to conduct government operations (Support Delivery of Services) and the resource management functions that support all areas of the government's business (Management of Government Resources, Australian Government Architecture).

BRM Line of Business

The middle tier of the BRM. LoBs represent the internal operations of government and its services for citizens, independent of the agencies, bureaus and offices that perform them (Australian Government Architecture).

Business

The people or organisations that are described by the BRM. In the Universal Description, Discovery and Integration, standard businesses are defined by a business entity. While, quite often, these are, in fact, businesses in the usual sense of the word, they need not be. For example, the 'businesses' in a registry internal to a business might well be internal organisations (UDDI).

Business Context

The formal description of a specific business circumstance, as identified by the values of a set of Context Categories, allowing different business circumstances to be uniquely distinguished; (UN/CEFACT Core Components Technical Specification, Version 2.01). For example, in the AGA SRM, Service Types provide an additional layer of categorisation that defines the business context of a specific component within a given Service Domain.

Business Process

A business process is a sequence of linked activities that creates value by turning inputs into a more valuable output. This value creation can be performed by human participants or information and communications technology (ICT), or both.

Business Process Execution Language (BPEL)

Is a web services-based business process modelling language. Also known as the Business Process Execution Language for Web Services (BPEL4WS), it is an XML-based standard for defining how you can combine Web services to implement business processes. It builds upon the Web Services Definition Language (WSDL) and XML Schema Definition (XSD).

Business Process Improvement

Business process improvement focuses on changing a process to improve the overall performance of the process or to meet a new goal or outcome.

Business Process Management (BPM)

The discovery, design and deployment of business processes. In addition, BPM includes the executive, administrative and supervisory control of those processes (Source: Business Process Management: the Third Wave, by Howard Smith and Peter Fingar).

Business Process Model

A Business Process Model is a network of graphical objects, which are activities and the flow controls that define their order of performance. (http://www.bpmn.org)

Business Process Modelling Notation (BPMN)

BPMN was developed by the Business Process Management Initiative (BPMI) under the Object Management Group (OMG). BPMN defines a Business Process Diagram (BPD),

which is based on a flowcharting technique tailored for creating graphical models of business process operations. It is aimed at providing organisations with the capability of understanding their internal business procedures in a graphical notation and to give organisations the ability to communicate these procedures in a standard manner. (http://www.bpmn.org)

Business Process Re-Engineering

A term coined by Hammer and Davenport in the early 1990s. As originally defined in their books, it emphasised starting from a blank sheet and completely reconceptualising major business processes and using information technology in order to obtain breakthrough improvements in performance. The term became unpopular in the late 1990s and many business people associate BPR with failures. Those who still use the term have re-defined it to mean Business Process Re-design. (Source: http://www.bpmbasics.com/tools/glossary.html#bpr)

Business Reference Model (BRM)

One of the five AGA reference models. The BRM provides a framework that facilitates a functional (rather than organisational) view of the government's Lines of Business (LoB), including its internal operations and its services for citizens, independent of the agencies, bureaus and offices that perform them. (Australian Government Architecture – http://www.agimo.gov.au/government/australian_government_architecture)

Business Rule

Policies and other restrictions, guidelines and procedures governing the administration and operation of a service (Data Dictionary for Preservation Metadata: Final Report of the PREMIS Working Group, May 2005).

Business Transformation

Business transformation is the process of translating a high-level vision for the business into new services. It involves developing a 'blueprint', translating it into programs of business change and the improvement of service delivery.

Key aspects of business transformation include:
- identifying an agency's core business (and related functions, services and products)
- designing new processes to deliver new services and/or do things better
- managing new relationships with other agencies, customers and service providers
- directing the ongoing strategy of your organisation.

(modified from Office of Government Commerce – UK Government http://www.ogc.gov.uk/delivery_lifecycle_managing_change_.asp)

Common Business Process

Common business processes are those business processes that exist in different organisations yet have, in essence, the same goals and outputs, thereby creating the possibility for the arrangements to conduct these business processes to be optimised and delivered in a more efficient and standardised manner. OECD (2005), *E-Government for Better Government*.

Data

A value, or set of values, representing a specific concept or concepts. Data becomes 'information' when analysed and possibly combined with other data in order to extract meaning and to provide context. (Data Reference Model, Australian Government Architecture)

Data Reference Model   (DRM)

One of the five reference models of the AGA. The DRM is a framework whose primary purpose is to enable information sharing and re-use across the Federal Government via the standard description and discovery of common data and the promotion of uniform data management practices (Australian Government Architecture http://www.agimo. gov.au/government/australian_government_architecture).

Decision

Decisions are locations within a business process where the Sequence Flow can take two or more alternative paths. This is basically the 'fork in the road' for a process. For a given performance (or instance) of the process, only one of the forks can be taken. (BPMN Specification – http://www.omg.org)

e-Government Strategy, 2006

Published in March 2006 by the Australian Government Information Management Office (AGIMO), the 2006 e-Government Strategy documents a strategy to 'deliver a more coordinated and citizen-driven focus to the government's e-Government initiatives'. (www.agimo.gov.au)

Enterprise Architecture (EA)

The explicit description and documentation of the current and desired relationships among business and management processes and information technology. An EA describes the 'current architecture' and 'target architecture' to include the rules, standards and systems life cycle information to optimise and maintain the environment which the agency wishes to create and maintain by managing its IT portfolio. The EA must also provide a strategy that will enable the agency to support its current state and also act as the checklist for transition to its target environment.

Federal Enterprise Architecture (FEA)

A business-based framework for US Government-wide improvement developed by the US Office of Management and Budget (OMB). (http://www.whitehouse.gov/omb/egov/a-1-fea.html)

Information and Communications Technology (ICT)

The use of electronic computers, computer software and communications technology to convert, store, protect, process, transmit and retrieve information.

Information

Information is data that has been given relevance and purpose through relational connection. Information results from adding value to data by understanding relations.

In accordance with the Australian Government Information Interoperability Framework, information is defined functionally to include:

- information that citizens need to understand their rights, entitlements and obligations
- information that government needs to plan, participate, manage and deliver services and programs for the benefit of individual citizens, as well as the Australian community as a whole
- information that government needs to participate and position itself in the global community and economy
- information that government needs to plan for, manage and support national security activities designed to protect the Australian community
- information that public servants and stakeholders need to be able to carry out their jobs and fulfil their roles within both agency and whole of government contexts. (Australian Government Information Management Office (2006), *Australian Government Information Interoperability Framework*.)

Interoperability

Interoperability is the ability to transfer and use information in a uniform and efficient manner across multiple organisations and information technology systems. (Australian Government Information Management Office (2006), *Delivering Australian Government Services. Access and Distribution Strategy.*)

Lines of Business (LoB)

Major government business areas identified in the Business Reference Model (BRM). Each LoB is comprised of a collection of Sub-Functions. The LoBs fall broadly into two categories: external, which describes the purpose of government in functional terms, or internal, which describes the support functions the government should conduct in order to effectively deliver services to its citizens.

Maturity model

A maturity model, such as a business process management maturity model, describes a capability improvement path that guides organisations. Use of maturity models started with the Capability Maturity Model (CMM), which was developed by the Software Engineering Institute at Carnegie Mellon University in the mid-1980s for evaluation of software development processes. A maturity model can be used to assess the current capability status of an organisation and to identify improvements needed to achieve a desired level of capability.

National Services Improvement Framework (NSIF)

The National Services Improvement Framework (NSIF) was developed by the Ministerial Online and Communications Council (OCC) and provides a series of re-usable documents and templates to support multi-agency collaborative projects and activities (http://www.nsif.gov.au).

Object Management Group (OMG)

The Object Management Group is a consortium that sets standards in object-oriented programming, as well as system modelling. The OMG created the Common Object

Request Broker Architecture (CORBA) standard in 1991 and, more recently, the standard for Unified Modelling Language (UML) and related technologies Meta-Object Facility (MOF) and XML Metadata Interchange (XMI). More recently, the OMG has been responsible for developing the Business Process Modelling Notation (BPMN) to support standardised modelling of business processes and workflows. (http://www.omg.org)

Participant

A Participant is a business entity (e.g. a company, company division or a customer) or a business role (e.g. a buyer or a seller), which controls, or is responsible for, a business process. (BPMN Specification – http://www.omg.org)

Performance Reference Model (PRM)

One of the five AGA reference models. The PRM is a framework for performance measurement providing common output measurements throughout the Australian Government (Australian Government Architecture – http://www.agimo.gov.au/government/australian_government_architecture).

Privacy

Addresses the acceptable collection, creation, use, disclosure, transmission and storage of information, as well as its accuracy, and the minimum necessary use of information. Requirements for the Australian Government are enshrined in the Australian Government Privacy Act, 1988.

Process Management

Process management encompasses the planning, performance monitoring and continuous improvement of a specific process.

Process Owner

A person responsible for the performance and continuous improvement of a process.

Reference Models

An abstract framework for understanding significant relationships among the entities of a specific environment, and for the development of consistent standards or specifications supporting that environment. A reference model is based on a small number of unifying concepts and may be used as a basis for education and explaining standards to a non-specialist. A reference model is not directly tied to any standards, technologies or other concrete implementation details but it does seek to provide a common semantic that can be used unambiguously across and between different implementations.

Security

Security defines the methods of protecting information and information systems from unauthorised access, use, disclosure, disruption, modification or destruction in order to provide integrity, confidentiality and availability, whether in storage or in transit.

Service

Discrete unit of functionality that can be requested (provided a set of pre-conditions is met), which performs one or more operations (typically applying business rules and

accessing a database) and returns a set of results to the requester. Completion of a service always leaves business and data integrity intact. (http://www.whitehouse.gov/omb/egov/documents/SCBA_Whitepaper_Chapter_1.pdf)

Service Component

A self-contained service with pre-determined and well-defined functionality that may be exposed through a well-defined and documented business or technology interface. Well-designed Service Components are 'loosely coupled' and collaborate primarily by exchanging messages. (http://www.whitehouse.gov/omb/egov/documents/SCBA_Whitepaper_Chapter_1.pdf)

Services Reference Model (SRM)

A business and performance-driven, functional framework that classifies Service Components with respect to how they support business and/or performance objectives. The SRM is intended to support the discovery of government-wide business and application Service Components in IT investments and assets. The SRM is structured across horizontal and vertical service domains which, independent of the business functions, can provide a leverageable foundation to support the re-use of applications, application capabilities, components and business services. Service domains include Customer Services, Process Automation Services, Business Management Services, Digital Asset Services, Business Analytical Services, Back Office Services and Support Services (Australian Government Architecture – http://www.agimo.gov.au/government/australian_government_architecture).

Service Delivery

Service delivery is a customer-oriented activity. Service delivery activities are carried out by organisations and are oriented towards meeting customer needs and expectations. (ISO 9000)

Service Oriented

Service oriented refers to an architecture-based approach to managing functionality across an agency.

Service Oriented Architecture (SOA)

Expresses a software architectural concept that defines the use of services to support the requirements of business. In an SOA environment, nodes on a network make resources available to other participants in the network as independent services that the participants access in a standardised way. Most definitions of SOA identify the use of Web services (using SOAP and WSDL) in its implementation. However, one can implement SOA using any service-based technology with loose coupling among interacting software agents.

Six Sigma

A system of practices originally developed by Motorola to systematically improve processes by eliminating defects in a process. Six Sigma uses a methodology described as DMAIC (Define, Measure, Analyse, Improve and Control) for process improvement.

Standard(s)

A standard is a practice, product or guideline that is widely employed or recognised. It can be used as a model of authority and good practice and is used to assure quality and consistency. It encompasses standards endorsed by a recognised standards setting authority, enacted in legislation, voluntary standards and agreed protocols (NSW e-Government Interoperability Framework, v2 October 2004 – http://www.oit.nsw.gov.au/docs/Interoperability_Framework.pdf).

Taxonomy

A collection of controlled vocabulary terms organised into a hierarchical structure. Each term in a taxonomy is in one or more parent/child (broader/narrower) relationships to other terms in the taxonomy. There can be different types of parent/child relationships in a taxonomy (e.g. whole/part, genus/species, type/instance) but good practice limits all parent-child relationships to a single parent of the same type. Some taxonomies allow poly-hierarchy, which means that a term can have multiple parents and, although the term appears in multiple places, it is the same term. If the parent term has children in one place in a taxonomy, then it has the same children in every other place where it appears. (ANSI/NISO Z39.19-200x)

Technical Reference Model (TRM)

A component-driven, technical framework used to categorise the standards, specifications and technologies that support and enable the delivery of service components and capabilities. The TRM provides a foundation to categorise the standards, specifications and technologies to support the construction, delivery and exchange of business and application components (Service Components) that may be used and leveraged in a Component-Based or Service-Oriented Architecture. The TRM unifies existing Agency TRMs and e-Government guidance by providing a foundation to advance the re-use of technology and component services from a government-wide perspective. Service areas include Service Access and Delivery, Service Platform and Infrastructure, Component Framework, and Service Interface and Integration (Australian Government Architecture – http://www.agimo.gov.au/government/australian_government_architecture).

Total Quality Management (TQM)

A management strategy aimed at embedding awareness of quality in all organisational processes. TQM is a people-focused management system that aims at continual increase in customer satisfaction at continually lower real costs.

UML

Unified Modeling Language (UML) is a non-proprietary, object modelling and specification language. As a graphical notation, UML can be used for modelling hardware (engineering systems) and is commonly used for business process modelling, systems engineering modelling, software engineering and representing organisational structure. UML was designed to be used to specify, visualise, construct and document the artefacts of an object-oriented software-intensive system under development. It   represents an integrated compilation of best engineering practices that have proven to be successful in modelling large, complex systems, especially at the architectural level (OMG UML Resource Page – http://www.omg.org).

Web Services

A software system designed to support interoperable machine-to-machine interaction over a network. It has an interface that is described in a machine-processable format, such as WSDL. Other systems interact with the Web service in a manner prescribed by its interface using messages, which may be enclosed in a SOAP envelope, or follow a REST approach. These messages are typically conveyed using HTTP, and are normally comprised of XML in conjunction with other Web-related standards. (W3C Web Services Activity)

Whole of government

Whole of government denotes public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues. Approaches can be formal and informal. They can focus on policy development, program management and service delivery. (Management Advisory Committee: *Connecting Government* http://www.apsc.gov.au/mac/connectinggovernment.htm)

XML

Extensible Markup Language has at least two distinct meanings:
1. a set of generic syntax rules to enable the creation of specialised markup languages that follow similar conventions, and
2. an ever-growing collection of standard, de facto standard and special purpose languages based on XML syntax e.g. XBRL, ebXML, XML Schema, XHTML, etc. (W3C XML home page)