Ministry of Education

BPP Summary

Version 1.0

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Information Security Classification : Low

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Introduction

This document provides an overview/summary of the *Business Program Planning (**BPP**)* of the Ministry (i.e. IM/IT standards of the Ministry) and also links to Government standards. The BPP has templates, standards, and processes for development and maintenance of Applications of various types : Custom-built, Commercial Off The Shelf (COTS), Open-Source, Software as a Service (SaaS) etc. The BPP is currently hosted on Ministry DSS Sharepoint site. A subset of the BPP is also published on the Government IM/IT standards site (public site) with the label "Education K-12 Sector IM/IT Standards" to serve as examples.

System Development Life Cycle (SDLC)

The BPP covers the System Development Life Cycle (SDLC) for W*aterfall* and *Iterative* approaches. BPP has *templates*, *standards* and references sections catering to the various of SDLC as listed below. **NOTE :** Agile projects should follow the Ministry's Agile Guidelines and Templates.

- Define (Includes Pre-project phase and Feasibility Assessment and Options Analysis Phases).
- Plan (Includes Project Planning and Project Management phases).
- Develop (Includes Phases like Business Analysis and Business Requirements, Technical Architecture, Data Architecture and Design, Application Architecture and Design, Build, Testing)
- Deploy (Application/System Implementation Phase)
- Maintain (Application/System Maintenance Phase)

Project Management, project monitoring and control happens throughout project lifecycle.

Quality Control and Team review process (QCIL process) is applicable to all phases and all deliverables.

Mandatory security control processes such as *Privacy Impacts Assessment (PIA)*, *Security Threat and Risk Assessment (STRA)* must be completed early in the project for all projects/initiatives.

Below is an example progression of deliverables/work for projects :

Pre-project phase approvals (Business case/Decision Note/Funding etc) → Feasibility Assessment/Options Analysis (as needed) → Project Phase approvals (Project Charter, Master Project Plan (MPP), Project Work plan etc) → Business Requirements → Business Requirements signoff by Clients → Architecture/Design → Deployment/Implementation/Operations deliverables → Build/Code (or customize/implement if COTS) → Testing → UAT and Production migration by Release management team → Lessons Learnt documentation by Project management team.

Quality Control and Team Reviews

- The QCIL Team review process is important and helpful in obtaining collective feedback on deliverables from all teams and stakeholders in a collaborative manner. It also helps in the risks & impacts analysis upfront.
- The BPP has the QCIL review process (Visio diagram) for quality control and team reviews of documents and deliverables. *Sharepoint/Confluence* are used as collaborative tools for team review of deliverables.
- QCIL Turnaround time : Typical turnaround time for a deliverable is 3-5 business days but there may be exceptions due to over-sized deliverables, complex deliverables etc may need more turnaround time.
- QCIL number of cycles : Typically there are 1 or 2 review cycles for a deliverable review but there may be exceptions.

Application Testing

- Testing Strategy document template should be used first to identify and document strategies for various tests.
- Types of testing to be done in the Ministry environments (DEV, TEST, UAT) : Unit Testing (in DEV), System/Integration Testing (in TEST), User Acceptance Testing (in UAT) , Load/Performance Testing, any Regression Testing. Any testing done outside the Ministry environments may not be accepted for application migrations.

    - *Unit testing and System/Integration testing* is done by the service provider's/vendor's testing team.
    - *UAT testing* is done by the Ministry clients/program areas or designated UAT teams. Service provider's/Vendor's help may be needed for the UAT testing in the UAT testing process.
    - Ministry Business Analyst (BA) is the interface between the Service provider/Vendor and the Ministry clients/program areas/UAT teams. UAT migration of application is subject to completion of Unit testing and System/Integration testing.
    - *Load/Performance Testing* and any *Regression Testing* is done by the AMS service provider (currently CGI) with Ministry Ops teams monitoring/overseeing.
    - *Production migration* of application is subject to completion of UAT testing, Vulnerability scan etc.

Compliance with BPP and Government-wide IM/IT Standards

- Compliance/alignment with the Ministry BPP/Agile standards and Government's IM/IT standards *is mandatory for* all projects.
- The BPP templates, standards and processes help in ensuring consistency of deliverables across various projects of the Ministry.
- Deliverables need to be created using BPP templates and following the BPP standards as applicable. **NOTE :** Agile projects should follow the Ministry's Agile Guidelines and Templates.
- Deliverables received from projects in non-BPP format may be rejected if prior Ministry Architecture Committee (MAC) approval on BPP exemption was not obtained by the projects.
- Always download and use the current blank templates from BPP site and do not reuse/repurpose the older filled-in templates from past projects.

BPP familiarization and walkthrough

This document ("BPP Summary" document) should help you get started with the BPP. The Application Deliverable matrix on BPP Sharepoint site should be referenced to know about the master list of BPP deliverables, deliverable formats etc. A quick walkthrough of BPP can be provided by the BPP Team upon request, preferably at the project start (before project charter).

Key points

Business Architecture

- Requirements documentation needs to be done using the Business Requirements Document (BRD) template.
- Conceptual data models used in BRD also need to be submitted in metadata format (in Sparx Enterprise Architect tool) as well is graphical/image formats (.jpg, .pdf etc).

- Business Architecture phase must be completed, QCIL-reviewed-and-accepted and signed off by the clients/program areas prior to initiating work in subsequent phases (architecture/design, build/code etc).

Data Architecture (DA)

- All data architecture deliverables and work products need to follow Data Architecture Standards.
- Data models/documentation are also required for COTS/OpenSource/Software as a Service (SaaS) implementations. Refer Data Architecture Standards for information on this.
- Data models need to be submitted in metadata format (in Sparx Enterprise Architect tool) as well is graphical/image formats (.jpg, .pdf etc). Refer Data Architecture Standards for information on this.
- Metadata and Data definitions (descriptions on entity/attributes and table/columns) are mandatory.
- Progression (evolution and generation) of data models needs to be in the following sequence :

Conceptual data models → Logical data models → Physical data models → Data Definition Language (DDL) scripts

- Data Architecture phase needs to be completed, QCIL-reviewed-and-accepted and approved by Data Architect prior to initiating work in subsequent phases (build/coding, test etc).

Application Architecture (AA)

- Application architecture needs to be documented using Application Architecture (AA) template.
- For low risk/small applications, the Analysis, Design and Architecture (ADA) template may be used subject to prior discussions with BPP team and MAC approvals.
- It is recommended to deliver the models/diagrams (such as UML models) in metadata format too (in Sparx Enterprise Architect tool) in addition to graphical format (.jpg, .pdf etc).
- Architecture documentation is required for COTS/OpenSource/SaaS implementations too.
- Architecture phase needs to be completed, QCIL-reviewed-and-accepted and approved by Ministry prior to project initiating work in subsequent phases (build, test, implementation etc).

Technology Architecture (TA)

- All application projects (Custom development/COTS/OpenSource/Application maintenance projects etc) need to comply with and run in the Ministry Technical Architecture and its environments such as DEV, TEST, UAT, PROD, EFX etc without adverse impacts on the IT infrastructure and other co-existing applications.
- Configuration Management : Subversion is the Ministry standard tool and repository for configuration management of all applications. All application source code needs to be uploaded to Subversion for configuration management purposes.
- Release Management : Jenkins is the Ministry standard tool for release management of all applications.
- Change Management : All application changes are to be subject to Ministry's Change Management process which is managed by the Ministry Change Advisory Board (CAB).
- Application Testing and Migration : All testing must be completed prior to requesting Production migration of the application. QCIL review and acceptance of requirements, architectures and deliverables must be completed prior to requesting Production migration of the application.
- Deployment deliverables phase : Deployment deliverables (Implementation Plan, Operations Support Guide, Training and Support strategy and Training materials if any) need to be completed, QCIL-reviewed-and-accepted and approved by Ministy prior to requesting production migration of the application.

Security Architecture

- All application projects (Custom development/COTS/OpenSource/SaaS/Application maintenance projects etc) must follow all the Security architecture standards & best practices, which includes (but not limited to) :

  Authentication (login) using IDIR/ BCeID/Single Sign-on etc, Authorization (access control) implementation, SiteMinder, Digital Certificates, Cryptography (encryption), Data encryption/masking/anonymizaiton of production data usage for non-production purposes, compliance with Information Security Policy (ISP), FOIPPA, Personal Information handling in accordance with Government/Ministry PI policies and standards.

- Mandatory security processes and deliverables such as *Privacy Impacts Assessment (PIA)*, *Security Threat and Risk Assessment (STRA)* must be completed early in the project for all projects/initiatives (regardless of project type and size, project budgets and costs, project schedules).

- Any access to production data and production data use for non-production purposes must be done only with prior approvals from data custodians (even if you have access to the production environment by virtue of your job role).

Pre-project

- Stakeholder/Management's approvals/signoffs on pre-project phase deliverables such as Business Case, Decision Notes, Feasibility assessment, Options Analysis, Funding requirements analysis etc as applicable must be completed prior to commencing work on the project.

Project Management

- Approvals/signoffs on project deliverables such as business case, decision note, funding approval, project charter, master project plan etc are mandatory for all projects/initiatives prior to commencing actual work (business requirements/architecture/design/build/code etc) on the project.

- Changes to the already approved/signed-off project plans and schedules are subject to Steering Committee/Project Sponsor approvals and it may also need re-baseline. Please consult with the Project Sponsor/Client Lead for directions on this.

- Project status reporting throughout the project life cycle is mandatory. Please consult with the Project Sponsor/Client Lead for directions on this.