UNIVERSIDAD PARA LA COOPERACIÓN INTERNACIONAL
(UCI)

PROJECT MANAGEMENT OFFICE (PMO) PROPOSAL FOR A PUBLIC SECTOR BODY IN JAMAICA

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DEDICATION

This research project is dedicated to my family, friends and colleagues who supported me throughout the entire developmental process and to the Public Sector Body of Jamaica for serving as a model for this paper.

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ABSTRACT

The overarching objective of this project was to develop a proposal for a Project Management Office for the Public Sector Body of Jamaica to improve organizational maturity in project management. The recommendations will aid the organization to effectively plan and execute projects and research studies to positively impact nation building through science and technology. Given the specialized and decentralized structure of the PSB, the current role of the PMU is supportive in nature and is limited in its functional capacity in terms of communication and control. The project management framework existing within the organization is supported by PMI principles in its processes and documentation, however it is not comprehensively framed within the PMI standards and best practices.

In the development process of this project an assessment of the organization's maturity as it relates to project management is carried out in order to identify project needs, strengths and opportunities for growth and improvement. It is intended to determine the best project management structure suited for the Public Sector Body, its appropriate position within the organizational structure and strategic alignment, level of authority and an implementation plan to catalyze its transition. To this end, the qualitative research methodology is utilized with its associated tools of observation, document study, interviews and survey research along with the application of an organizational maturity model and relevant references from the Project Management Institute.

As a result of the project, it is recommended to the director of the Public Sector Body that a consistent maturity assessment be done in order to gauge the project management maturity levels throughout the decentralized organization. Additionally, it is also highly recommended that the work environment and organization's culture regarding project management is enhanced and greater support be given by top management. Moreover, the Public Sector Body should leverage the existing organizational knowledge of project management to comprehensively frame projects within PMI standards. It is also necessary to expand the utilization of additional appropriate PMI tools, techniques and methodologies relevant to the development of projects.

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ABBREVIATIONS AND ACRONYMS

CMMI - Capability Maturity Model Integration

FGP – Final Graduation Project

FPD – Food Product Development

FPP – Food Processing Plant

ID - Information Division

KPM3 - Kerzner Project Management Maturity Model

LSS - Lean Six Sigma Maturity Model

OPM3 - Organizational Project Management Maturity Model (PMI)

P3M3 - The Portfolio, Program, and Project Management Maturity Model

PD – Process Division

PMO – Project Management Office

PMMMSM - Project Management Maturity Model of PM Solutions

PMU – Project Management Unit

RDD – Research and Development Division

PRINCE 2 - Projects IN Controlled Environments

PSB – Public Sector Body

WBS – Work Breakdown Structure

EXECUTIVE SUMMARY

The development of many countries is anchored by their ability to leverage and integrate the transforming elements of science, technology and innovation to advance its economic, social and environmental pursuits. Throughout its sixty years (60) of existence, the Public Sector Body (PSB), in Jamaica, has fostered and coordinated scientific research and promoted its application toward national development. To this end, the organization has been actively involved in the development of externally-funded projects and research studies to drive productivity and economic growth.

To achieve this, the organization is comprised of three (3) core divisions consisting of several units within each. These include: the Research and Development Division (RDD); Process Division (PD); and Information Division (ID). This structural framework is a matrix style set-up which is indicative of decentralized operations. This is evidenced by functional management heads for each core division and supervisors for specialized areas. Of note, the Project Management Unit (PMU) is situated in the Information Division and its current role is supportive in nature. It is also limited in its capacity to communicate directly with departmental managers, as its reporting functions are aligned to its position in the organizational structure. In addition, while projects have been developed and successfully executed over the years, supported by elements of PMI principles, these were not comprehensively framed within the PMI standards and best practices. This presented the opportunity for the PMU to evolve and to be strategically re-positioned to facilitate the effective planning and execution of projects as well as corporate governance.

The general objective of this project was to develop a Project Management Office Proposal for the Public Sector Body to improve organizational maturity in project management in order to effectively plan and execute impactful projects. The specific objectives were: to evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement; to assess the different Project Management Office structures in order to determine the one best suited for the PSB; to establish the characteristics and functions of the proposed PMO position within the organizational structure and level of authority and to develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.

The methodology employed in this project was qualitative with the use of associated tools such as, observation, document study, interviews and survey research. Unstructured preliminary interviews were conducted with relevant project management personnel to gather baseline data on the project management environment. An organizational maturity model was then applied in order to determine the level of maturity by assessing the organization’s project management needs and standardized processes. Documents, procedures and processes were audited for gaps and the general culture towards project management was assessed through observational lens and the established culture statement.

Based on the maturity assessment results, it was determined that the PSB's organizational maturity corresponded to Level 1 (Initial Processes for both project management and portfolio management). Granted that its maturity is at the first point of the scale, there is incredible potential for further maturity. The score variability resulting from the maturity assessment demonstrated strength in the project management areas of Integration Management, Resource Management, Procurement Management and Stakeholder Management, whereas, improvement opportunities exist in the areas of Scope, Schedule, Cost, Quality, Communications and Risk management.

As for Portfolio Management, strengths were observed in the perspectives of Governance, Communication and Resource Management. This was further supported by artifacts, documentation and observations whereas, the perspectives of Project Opportunity Assessment and Initiation, Project Prioritization and Selection and Portfolio Performance Management emerged as improvement opportunities.

The analysis of the characteristics of the six types of PMO coupled with the results from the PMO questionnaire administered revealed that, a Hybrid/Enterprise PMO would best be suited for the PSB. This PMO would be a combination of a Departmental and a Corporate PMO with interlocking roles of supporting, controlling and directing. The functions would include: Strategic Planning, Establishing Project Governance/Methodologies, Project Support, Direct Management, Monitoring and Evaluation and Risk Management.

It was further concluded that an implementation plan for the PMO should be carried out on a phased basis to transform the organizational culture and improve maturity through strategic alignment, implementation of standards, project management methodologies and best practices to facilitate the effective planning and improved project performance in the PSB. Therefore, in keeping with the general objective, a Hybrid/Enterprise PMO would prove beneficial in establishing a more structured and result-oriented project management framework to the PSB.

In accordance with the results, it is recommended that a maturity assessment be repeated using a different maturity model along with a thorough documentation and artifacts review for both project and portfolio management. This should be followed by bi-annual maturity analyses.

In conclusion, a phased, systematic implementation plan of the PMO should be carried out to align the PMO to culture and strategy and to facilitate the integration of project management methodologies and systems to improve project performance and determine and sustain business value.

1 INTRODUCTION

1.1. Background

The Public Sector Body in Jamaica was established in 1960 and has the responsibility to foster and coordinate scientific research and promote its application. In this regard, the organization is actively involved in the development of projects and research studies to positively impact nation building by utilizing science and technology. Historically, the development of externally funded projects was facilitated by a project management desk, a single designate within the Executive Director's Office, who was also responsible for quality management. The twinning of both areas under one portfolio served the organization well and was beneficial over the years. The projects that were developed and successfully executed, although not comprehensively framed within the PMI standards and best practices had elements of PMI standards evidenced in processes and documentation. As such, there is opportunity to evolve.

Importantly, the organization operates with a decentralized model. There are three (3) core divisions consisting of several units within each. These include: a Research and Development Division, Process Division, and Information Division. Support services are provided to each under the Human Resources and Administration Division, Finance and Accounting and the Marketing and Corporate Services Division. As such, the proposal for a Project Management Office will solidify the critical purpose of a PMO, its importance in the hierarchy of the organization and the need for systematic and organized processes supported by PMI standards. The intention is to develop impactful and value-added projects across all areas for institutional benefits and national development. The proposed organizational design will utilize the PMO strategically in the overall planning and execution of projects as well as corporate governance.

Additionally, the project management framework existing within the organization has managed to adopt certain processes, tools, techniques and templates that have guided the methodological operations of the development and implementation of projects. Over the years, the PSB has benefited from project funds, however, given the results-based focus of the government of Jamaica and the need for greater impact on the productive sector, the project management arm has had to be diversified. The need now arises to identify additional funding to support existing programmes. This, among other factors necessitated the establishment of a Project Management Unit that is now mandated with the responsibility of identifying funding opportunities through the development of projects and partnerships. While the characteristics and functions of a PMO are not engendered in the newly established PMU, however opportunities exist for its transition.

1.2. Statement of the problem

Given the specialized and decentralized structure of the PSB, the current role of the PMU is limited in its capacity to communicate directly with departmental managers as its reporting functions are aligned to its position in the organizational structure. As such the position, characteristics and functions of the proposed type of PMO has to be unique and strategic in the overall organizational structure so as to accrue optimal benefits.

1.3. Purpose

The purpose of this research is to assess the organization’s maturity as it relates to project management in order to identify project needs, strengths and opportunities for growth and improvement. The intended result is the development of a PMO proposal designed to determine the best project management structure suited for the PSB, its position within the organizational structure as well as its strategic alignment and level of authority. It will include an implementation plan to catalyze its transition.

These will provide the organization with relevant information to better position its project management arm to identify relevant internal and external projects that will strategically build capacity within the organization and generate a return on investment.

1.4. General objective

- To develop a Project Management Office Proposal for the Public Sector Body which will improve organizational maturity in project management in order to effectively plan and execute impactful projects.

1.5. Specific objectives

- To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.

- To assess the different Project Management Office structures in order to determine the one best suited for the PSB.

- To establish the characteristics and functions of the proposed PMO, its position within the organizational structure and level of authority.

- To develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.

2 THEORETICAL FRAMEWORK

2.1. Company/Enterprise framework

The Public Sector Body's framework will consider its background, mission and vision statements, culture statement, quality policy, organizational structure and its product offerings.

2.1.1. Company/Enterprise background

The Public Sector Body is a statutory body mandated to foster the development of scientific research, be a repository of scientific information, and facilitate the development, application and transfer of or the improvement of technology of such research for the benefit of all of Jamaica. The PSB also plays a role as an enabler in the creation of new industries and the encouragement of technical processes on a cooperative basis with all stake-holders involved. The promotion of scientific and technological endeavors is also critical in facilitating training, the implementation of projects, especially in the agro-industrial sector and the conversion of waste to energy.

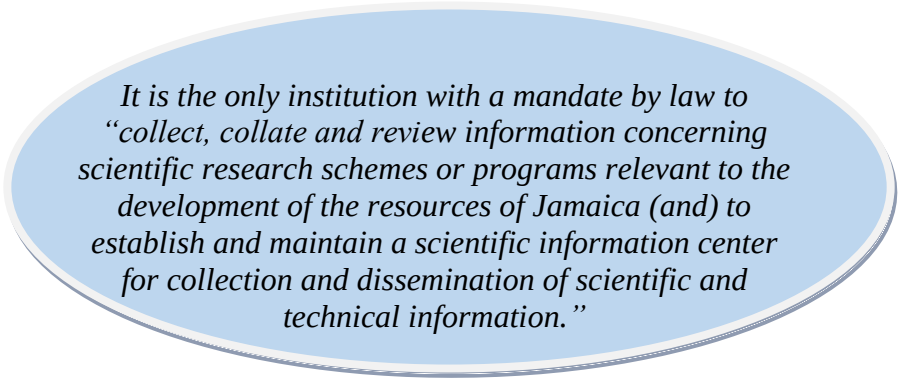

Figure 1.1. *Public Sector Body's Mandate*

Note: From the Public Sector Body Archives, 2021

2.1.1.1 Governance

The governance framework of the PSB is comprised of a Board of Directors appointed by its parent ministry which governs the overall operations and direction of the PSB. The Executive Director is responsible for the daily operations of the organization.

2.1.1.2. Certification

The PSB is certified as an ISO 9001:2015 organization by ISOQAR Inc. and the chemical and microbiological laboratories of the Analytical Services Department have been accredited to ISO/IEC 17025:2005 since 2010 by the Jamaica National Accreditation Agency (JANAAC). These certifications demonstrate the organization's commitment to continuous improvement, customer satisfaction and quality service at international standards. Furthermore, the PSB has its own registered certification mark – a symbol of excellence denoting safety and quality, (Public Sector Body, 2021).

2.1.2. Mission and vision statements

The PSB is grounded in its mission and vision statements supported by its culture statement backed by its quality policy. These along with effective project management processes will positively impact customer requirements and satisfaction.

2.1.2.1. Mission Statement

According to the Public Sector Body (2021) the organization serves the productive sector, policy makers and the general public in order to enable sustainable growth and development in Jamaica by:

- Providing quality Scientific and Technological solutions (product/process research and development, policy advice, technology transfer);
- Popularizing Science and Technology through strategic alliances; and
- Being Customer-focused, with innovative, competent and responsive teams.

2.1.2.2. Vision Statement

“The Public Sector Body, guided by quality management principles, is a center of excellence that utilizes innovation, scientific and technical information and knowledge for transformation and sustainable development, positively impacting the quality of life of all Jamaicans” (Public Sector Body, 2021).

2.1.2.3. Culture Statement

“The Public Sector Body prides itself in fostering a culture that is grounded in our vision and mission, core values and quality policy. We are committed to a mindset of continuous improvement designed to challenge our people and foster their professional development. We are committed to the satisfaction of our customers by providing them with excellent service and being responsive, collaborative and results-driven. We embrace integrity by communicating honestly and creating an open, transparent and trust-based environment. We are accountable for the decisions we make. We inspire creativity and innovation with passion and energy. We respect and value the views of others, and care about the wellbeing of our people, our customers and our country” (Public Sector Body, 2021).

2.1.2.4. Quality Policy

The Public Sector Body (2021) guided by quality management principles, is committed to satisfying customer requirements in the provision of S&T solutions and information within the framework of legal, statutory and other requirements. We will continuously evaluate and improve the suitability and effectiveness of our Quality Management System, by periodically reviewing our processes and establishing and reviewing quality objectives. Management will ensure that this policy is communicated and understood throughout the organization.

2.1.3. Organizational structure

The organization has a decentralized structure comprising three (3) core divisions consisting of several units within each. These include: **Research and Development Division, Process Division, and Information Division.** Support services are provided under the Human Resources and Administration Division, Finance and Accounting and the Marketing and Corporate Services Division. Each core division has responsibility for a particular component of the overall mandate and comprise of specific units.

Each core division is headed by a functional manager and, in more than two cases, a corresponding Team Leader or Supervisor who has responsibility for the specific area and reports directly to the manager for the division.

The Research and Development Division (RDD) comprises five (5) units:

- Diagnostic Services
- Biotechnology
- Microbiology
- Food Product Development
- Natural Products

The Process Division (PD) include the following two (2) units:

- Wastewater Systems Unit
- Food Processing &Manufacturing

The Information Division (ID) consist of five (5) units:

- Science & Technology Education Unit
- Business Incubation Centre
- Project Management Unit
- Community Development
- Publications

These three main areas are expected to be impacted by the FGP as the results of the organizational maturity assessment and the recommendations will inform modifications to their respective project management processes for both local and externally funded projects and research studies.

As illustrated in Figure 1 below, each of the five units in the RD Division is managed by a Team Leader or a Research Consultant as is the case of Natural Products. As it relates to the PD, the operation of the Food Processing Plant is managed by the Team Leader while the Process Officer supervises Wastewater Systems. For the ID, four units are led by a Coordinator with the exception of the PMU, which is led by a functional Project Manager who reports directly to the Manager of ID. The general organization structure can be described as a matrix style due to the number of functional areas and managers.

Given this matrix structure, the FGP will seek to determine the best position of the existing Project Management Unit in collaborating with functional areas in achieving greater efficiency.

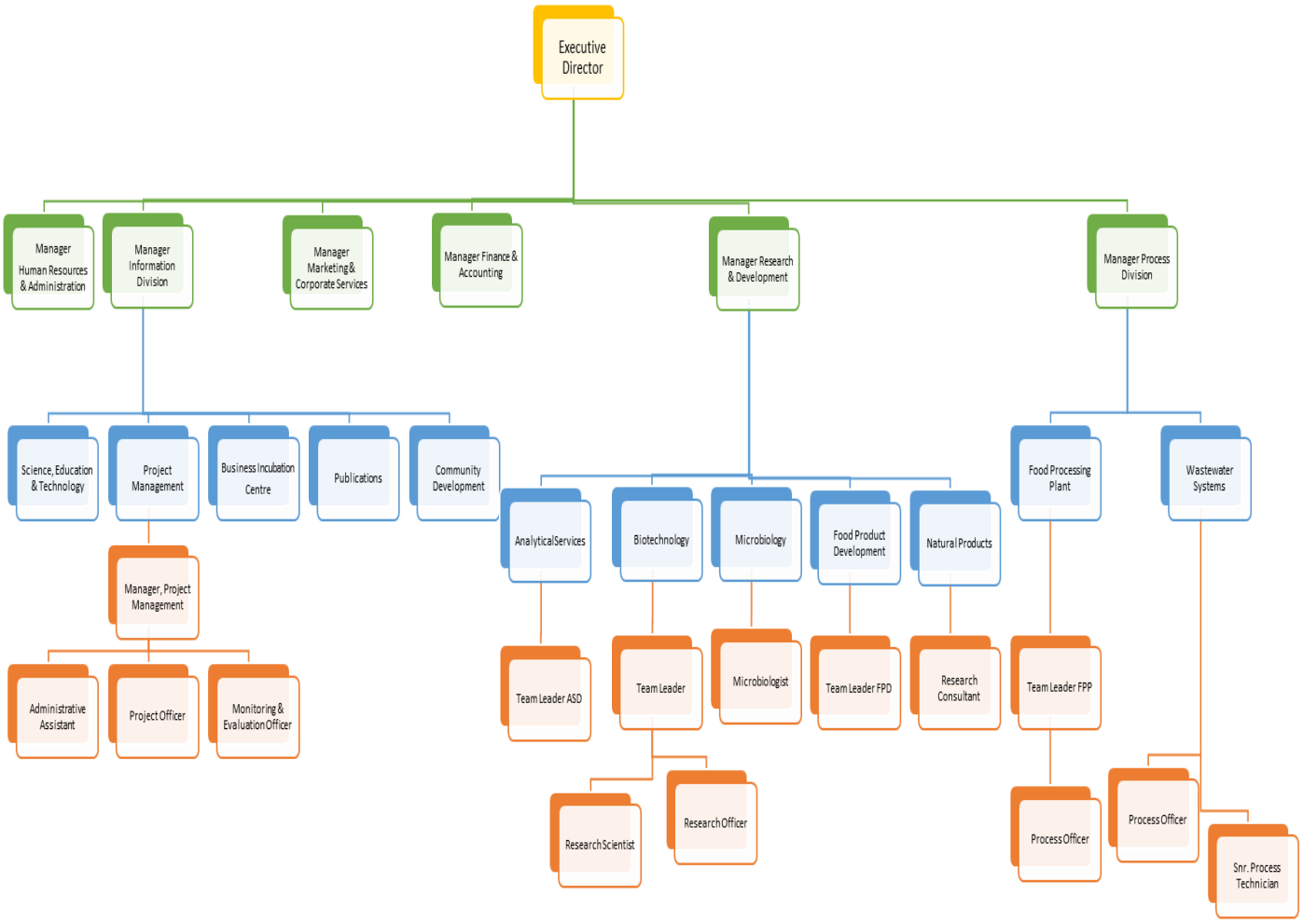

Figure 1.2. *Public Sector Body's Organizational Chart*

Note. Organizational structure of the Public Sector Body highlighting the three (3) core divisions that are involved in projects (Public Sector Body, 2021)

2.1.4. Products offered

The PSB provides a wide range of services including: Research & Development, Process Design, Improvement & Implementation, Technology Transfer & Training, Technical Assistance, Diagnostic Services, Factory Inspection, Collection, Collation and Dissemination of Scientific and Technological Information, Promotion and Popularization of Science & Technology, Business Development and Marketing and Sales.

The general objective of the FGP speaks to improving organizational maturity in project management in order to effectively plan and execute impactful projects. Various projects are developed by each division with the aim of capacity building, operational efficiency and to drive productivity and economic growth. Based on its objective, the utilization of project management methodologies, standards, practices, tools and techniques will only strengthen the development of projects and the management processes in the provision of goods and services thus increasing the demand for products and services and improvement in operations and delivery of service to customers, thereby stimulating financial revenues and operational continuity.

2.2 Project Management concepts

2.2.1 Project

A project is a temporary endeavor undertaken to create a unique product, service, or result. Projects drive change in organizations. From a business perspective, a project is aimed at moving an organization from one state to another state in order to achieve a specific objective (PMBOK Guide, 2017, pg.4.). In the context of this FGP, the undertaking is a Project Management Office Proposal for the PSB.

2.2.2 Project management

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the project

management processes identified for the project. Project management enables organizations to execute projects effectively and efficiently (PMBOK Guide, 2017, pg.10.).

2.2.3 Project life cycle

A project life cycle is the series of phases that a project passes through from its inception to its completion. It provides the basic framework for managing the project (PMBOK Guide, 2017, pg.4.).

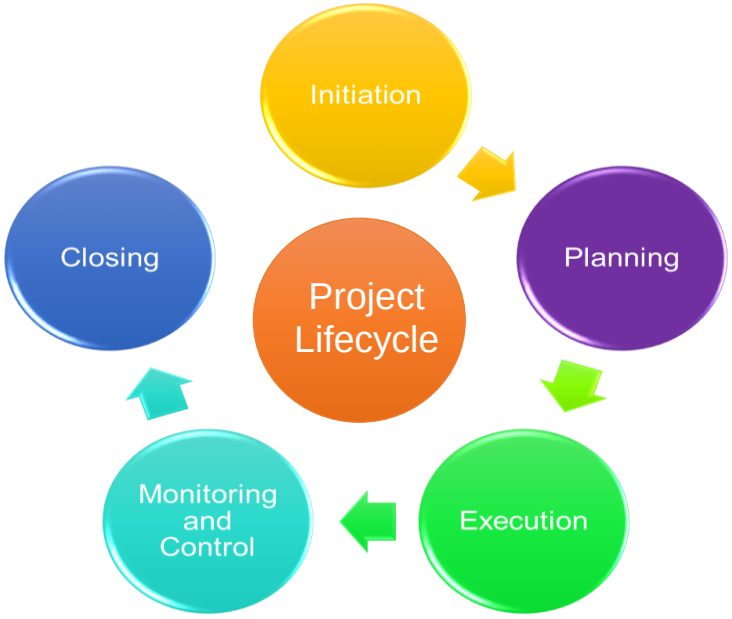

Figure 1.3. *Project Lifecycle*

Note: From PMI, 2017

The basic framework for managing a project at the Public Sector Body is reflective of components of the typical project lifecycle put forward by the PMI. However, due to the unique organizational structure of the PSB, there are slight deviations from the typical lifecycle as a result of the different functions performed by each core division. The typical processes for each knowledge area within the lifecycle phase are not fully captured. The standard format for projects relating at the PSB is:

- Kick-off Meeting with Stakeholders
- Stakeholders' Assessment
- Development of a Memorandum of Understanding if needed
- Development of a Work Plan and Budget
- Development of an Implementation Schedule to capture timeframes and responsibilities.
- Reports for Monitoring and Evaluation
- Risk Plans are developed but not for all projects
- Utilization of a Lesson Learnt
- Final Reporting to close out project.

The standard project format presented above is utilized throughout all three (3) core divisions. This format is further enhanced to include the technical aspects and scientific requirements during the design phase of projects in the respective divisions.

2.2.4 Project management processes

Project management processes are a systematic series of activities directed toward causing an end result where one or more inputs will be acted upon to create one or more outputs. The PSB is unique as it relates to project management processes in the sense that the three major divisions engage in different types of projects. For this reason, the processes are aligned to the particular division.

The design of the Project Management Office for the PSB (which is the purpose of this FGP) fits the general description of a project and as such must be aligned with the project management process groups. These will be examined going forward.

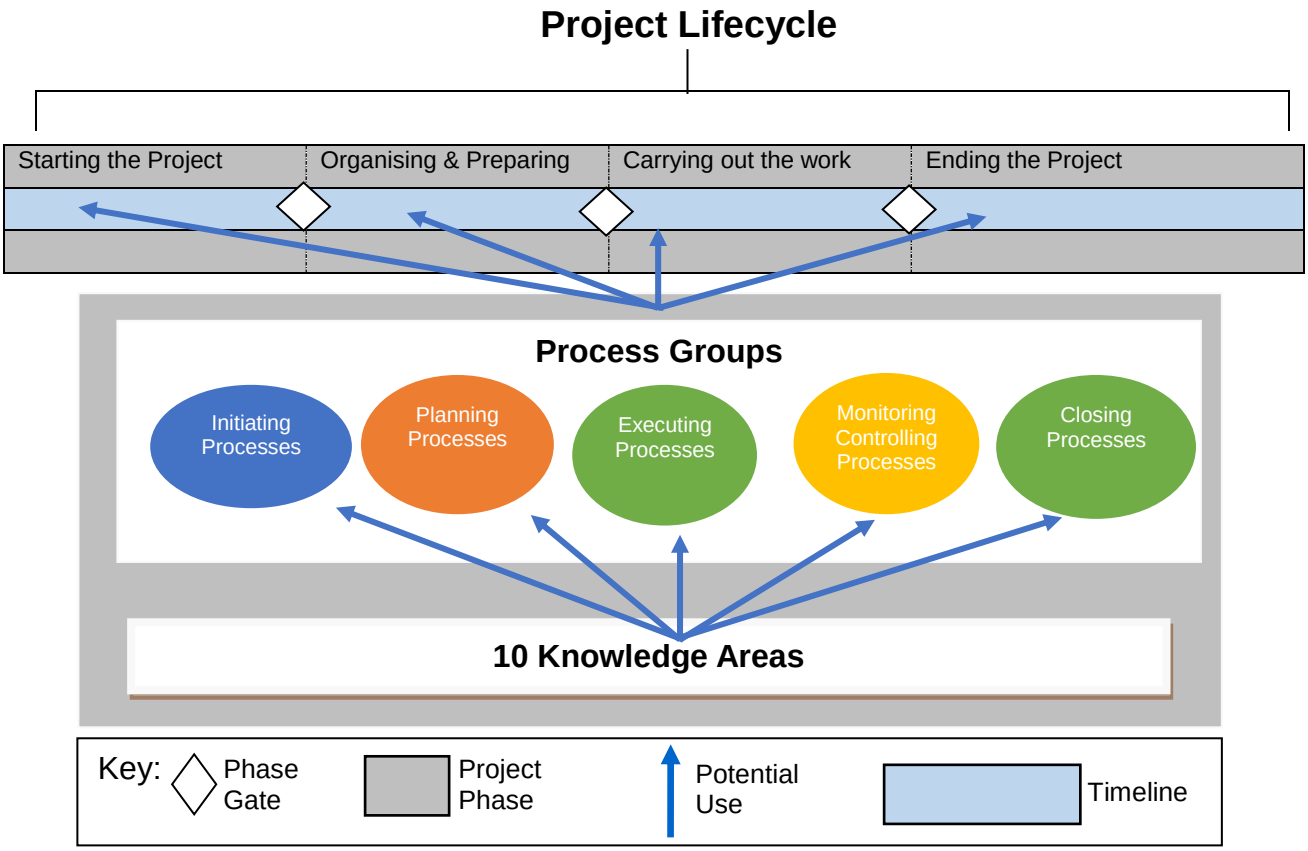

Figure 2.1. *Interrelationship of Key Components in Projects*

Note. From Interrelationship of PMBOK® Guide Key Components in Projects (PMI, 2017)

The PMBOK Guide (PMI, 2017) defines a Project Management Process Group as a logical grouping of project management processes to achieve specific project objectives. There are 47 processes that span 10 knowledge areas spread across five phases. The five major process groups are:

- **Initiating Process Group** - Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase. This phase includes the development of the FGP Project Charter.

- **Planning Process Group** - Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.

This includes the establishment of the FGP components relevant to the ten knowledge areas.

- **Executing Process Group** - Those processes performed to complete the work defined in the project management plan to satisfy the project requirements. The FGP necessitates the management of work which includes conducting interviews with various stakeholders and gathering relevant data.

- **Monitoring and Controlling Process Group** - processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes. The monitoring of the FGP work will be done by the tutorship and facilitator.

- **Closing Process Group** - Those processes performed to formally complete or close the project, phase, or contract. The Board of Examiners will formally close the FGP should it be accepted.

2.2.5 Project management knowledge areas

An identified area of project management defined by its knowledge requirements and described in terms of its component processes, practices, inputs, outputs, tools, and techniques. The ten knowledge areas as defined by the PMBOK Guide, 2017 are:

- **Project Integration Management** - Includes the processes and activities to identify, define, combine, unify, and coordinate the various processes and project management activities within the Project Management Process Groups.

- **Project Scope Management** - Includes the processes required to ensure the project includes all the work required, and only the work required, to complete the project successfully.
- **Project Schedule Management** - Includes the processes required to manage the timely completion of the project.

- **Project Cost Management** - Includes the processes involved in planning, estimating, budgeting, financing, funding, managing, and controlling costs so the project can be completed within the approved budget.

- **Project Quality Management** - Includes the processes for incorporating the organization's quality policy regarding planning, managing, and controlling project and product quality requirements, in order to meet stakeholders' expectations.

- **Project Resource Management** - Includes the processes to identify, acquire, and manage the resources needed for the successful completion of the project.

- **Project Communications Management** - Includes the processes required to ensure timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and ultimate disposition of project information.

- **Project Risk Management** - Includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project.

- **Project Procurement Management** - Includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team.

2.3 Project Management Maturity Models

A maturity model is a framework describing the idea progression toward desired improvement using several successive stages or levels. The maturity models provide an assessment framework that enables an organization to compare its project delivery with best practice criterion or allows it to gauge its value against competitors, ultimately defining a structured route to improvement. Furthermore, it allows an organization to assess and compare its own practices against best practices or those employed by competitors, with the intention to map out a structured path to improvement (Ghorbanali et al., 2011).

2.3.1 Organizational Project Management Models

As outlined in the Project Management Institute's Organizational Project Management Maturity Model (OPM 3) standard, OPM is characterized as "a strategy execution framework that utilizes portfolio, program, and project management as well as organizational-enabling practices to consistently and predictably deliver organization strategy to produce better performance, better results, and a sustainable competitive advantage" (PMI, 2013a, p. 3).

2.3.2 Portfolio

A portfolio is defined as a collection of projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives (PMI, 2017).

2.3.3 Program

A group of related projects, subsidiary programs and program activities that are managed in a coordinated manner to obtain benefits not available from managing them individually (PMI, 2017).

2.3.4 Project – defined in 2.2.1

The level of maturity in Project Management is the degree to which the organization develops, assimilates and implements best practices in Project, Program and Portfolio Management. The popular maturity models are:

- KPM3 - Kerzner Project Management Maturity Model.
- OPM3 - Organizational Project Management Maturity Model (PMI)
- P3M3 - The Portfolio, Program, and Project Management Maturity Model.
- Berkeley PM2 (Berkeley PM Maturity Model)
- PMMMSM - Project Management Maturity Model of PM Solutions.
- PRINCE 2 - Project Maturity in Organizations of Erling S. Andersen & Svein Arne Jessen
- CMMI - Capability Maturity Model Integration
- Lean Six Sigma Maturity Model

2.3.5 Kerzner's Project Management Maturity Model

The Kerzner's project management maturity model proposes a step-by-step methodology to address the specific processes and procedure at each level of maturity in which there is an ultimate objective for each level (Sokhanvar et al., 2014). The project management maturity level helps organizations address fundamental aspects of managing projects, improve the likelihood of a quality result and successful outcome and reduce the likelihood of risks impacting projects adversely (OGC, 2006). The PMMM which is comprised of five levels, according to (Kerzner, 2006; OGC, 2006; Wysocki, 2004; Cleland & Ireland, 2006) as cited by Demir & Kocabaú, 2010. The levels are explained below:

Level 1-Common Language (Initial Process): In this level, the organization recognizes the importance of project management and the need for a good understanding of the basic knowledge of project management and the accompanying language or terminology. In the first level, project definition and awareness are important.

Level 2-Common Processes (Repeatable Process): In this level, the organization recognizes that common processes need to be defined and developed such that successes on the project can be repeated on other projects. The recognition of the application and support of the project management principles to other methodologies employed by the company is included. In this level, the key process

areas are business case development, project establishment, project planning, monitoring and control, stakeholder management and communications, requirements management, risk management, configuration management, management of suppliers and external parties.

Level 3-Singular Methodology (Defined Process): In this level, the organization recognizes the synergistic effect of combining all corporate methodologies into a singular methodology, the center of which is project management. The synergistic effects also make process control easier with a single methodology than with multiple methodologies. This level provides these key areas: benefits management, transition, information management, organizational focus, process definition, training, skills and competency development, integrated management and reporting, lifecycle control, inter-group co-ordination and networking, quality assurance, Center of Excellence (COE) role deployment.

Level 4-Benchmarking (Managed Process): This level contains the recognition that process improvement is necessary to maintain a competitive advantage. Benchmarking must be performed on a continuous basis. The company must decide whom to benchmark and what to benchmark. Within this level, management metrics, quality management, organizational cultural growth and capacity management are the key process areas.

Level 5- Continuous Improvement (Optimized Process): In this level, the organization evaluates the information obtained through benchmarking and must then decide whether or not this information will enhance the singular methodology. The key process areas in this level are proactive problem management, technology management and continuous process improvement.

2.3.6 OPM3 - Organizational Project Management Maturity Model (PMI)

Organizational Project Management Maturity Model is a Project Management Institute (PMI) standard started in 1998. According to Kulaly (2009), the OPM3

standard consists of three major elements: Knowledge, Assessment and Improvement as described below:

Knowledge: The user becomes proficient in OPM3, the body of best practices, the ideas of organizational project management maturity, and methodology of OPM3.

Assessment: The organization compares itself to OPM3 best practices to determine its current location on a continuum of organizational project management maturity.

Improvement: Change initiatives leading to increased maturity can use the results of the assessment as a basis for planning, and move forward to implement the plan while conserving precious organizational resources.

According to Miller (2004), OPM3 differs from the other models in its application of the Deming model of continuous improvement and its progression: Standardize, Measure, Control, Continuous Improvement. When applying this model, an organization would initially develop standardized processes in support of those best practices that apply to the organization's stated goals and objectives.

As cited by Matassa (2006), the OPM3 model also recognizes that maturity level usually varies among the domains of project management (project, program, and portfolio). The OPM3 model cycles of assessing and improving OPM are iterative. Projects, programs, and portfolios have both individual and shared project management infrastructures. The result of this dynamic is that OPM must consider both the variances between the domains' adherence to standards and process improvement, as well as the synergies that are created for all domains when one of them enhances its OPM infrastructure. The OPM3 tool addresses this dilemma of domain interaction by using directories embedded in the tool to define best practices, current organizational capabilities, and roadmaps for improvement at the domain level.

2.3.7 P3M3 - The Portfolio, Program, and Project Management Maturity Model.

The P3M3 describes the portfolio, program and project-related activities within process areas that contribute to achieving a successful project outcome. The levels described within the P3M3 indicate how key process areas can be structured hierarchically to define a progression of capability which an organizational can use to set goals and plan their improvement journey (Murray & Snowden, 2015). According to the Office of Government Commerce (2006), the Portfolio, Program & Project Management Maturity Model (P3M3) can be used as the basis for improving portfolio, program and project management processes. It is structured with five levels of maturity, which are:

Level 1 - Initial process

Level 2 - Repeatable process

Level 3 - Defined process

Level 4 - Managed process

Level 5 - Optimized process

P3M3 also provides diagnostics that help organizations to understand the constraining factors that are inhibiting better performance. It does this by looking at information that is being used to manage performance such as processes and the procedures for their existence and suitability, organizational structures, competencies, the development of strategy and the effectiveness of tools that are already in place.

2.3.8 PRINCE 2 - Project Maturity in Organizations

The PRINCE2 Maturity Model (P2MM) is a standard which provides a framework with which organizations can assess their current adoption of the PRINCE2 project management method and put in place improvement plans with measurable

outcomes based on industry best practice. The PRINCE2 Maturity Model uses the same structure as the P3M3 from which it is derived, using: a five-level maturity framework to characterize the levels of organizational maturity, seven process perspectives covering key aspects of organizational-wide project management and specific and generic attributes for each level of maturity within each of the process perspectives.

P2MM focuses on the following seven Process Perspectives, which can be assessed at all five Maturity Levels: (1) Management Control (2) Benefits Management, (3) Financial Management (4) Stakeholder Engagement (5) Risk Management (6) Organizational Governance (7) Resource Management (Wiliams, 2010).

2.3.9 CMMI - Capability Maturity Model Integration

The Capability Maturity Model Integration (CMMI) is a process and behavioral model that helps organizations streamline process improvement and encourage productive, efficient behaviors that decrease risks in software, product and service development. The CMMI was developed by the Software Engineering Institute at Carnegie Mellon University as a process improvement tool for projects, divisions or organizations (White, 2018).

The Capability Maturity Model Integration (CMMI) provides a framework for the integration of process improvement for multiple process areas. Koppensteiner and Swan (2005) identifies two different improvement models for each version: the continuous model and the staged model:

- Continuous: Organizations that like to improve their processes one area at a time might likely chose the continuous model. The continuous model applies specific process improvement achievements for each process area. These are measured by capability levels from zero to five.

- Staged: Organizations that like to improve their processes across various process areas to reflect a certain maturity are likely to choose the staged model. In the staged model, the overall maturity of the organization is measured by maturity levels from one to five: (1) Initial, (2) Managed, (3) Defined, (4) Quantitatively Managed, (5) Optimizing

2.3.10 Lean Six Sigma Maturity Model

Lameijer et al (2017) emphasized that “Six Sigma is an organized and systematic method for strategic process improvement and new product and service development that relies on statistical methods and the scientific method to make dramatic reductions in customer-defined defect rates” (p.7). This systematic method is the define, measure, analyze, improve, and control (DMAIC) structure (De Mast & Lokkerbol, 2012, as cited in Lameijer, 2017). According to Choudhury (n.d), Lean Six Sigma maturity assessment shows leaders how advanced their organization is in terms of the Lean Six Sigma perspective, its strengths, weakness and improvement opportunities.

The assessment enables detailed, step-by-step, quantitative scoring to diagnose the current state. The rigorous nature of this exercise ensures that the journey going forward will lead the organization toward a future state of satisfying customer needs, improving internal processes, motivating employees and keeping the balance sheet strong.

2.4. Project Management Office

A Project Management Office (PMO) is defined as “a management structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques” (PMI, 2013a, p. 10-11). PMI mentions that “a primary function of a PMO is to support project managers in a variety of ways which may include, but are not limited to:

- Managing shared resources across all projects administered by the PMO:

- Identifying and developing project management methodology, best practices, and standards
- Coaching, mentoring, training, and oversight
- Monitoring compliance with project management standards, policies, procedures, and templates by means of project audits
- Developing and managing project policies, procedures, templates, and other shared documentation
- Coordinating communication across projects."

The type of PMO to be determined for the FGP will either be Supportive, Controlling or Directive in nature and that will take into consideration the organizational structure of the PSB. As outlined by the PMI, there are three main types of PMO structures that can be considered: The Supportive, the Controlling and the Directive PMOs. A supportive PMO will perform the role of an internal consultant to projects "by supplying templates, best practices, training, access to information, and lessons learned" (PMI, 2013a, p. 11). The Controlling PMO provides support and requires compliance, "by adopting project management frameworks or methodologies, using specific templates, forms and tools, or conformance to governance" (PMI, 2013a, p. 11). On the other hand, the Directive PMO takes control of projects by directly managing them. The degree of control provided by the PMO is high.

In addition, Giraudo and Monaldi (2015) postulate that there are additional types of PMOs based on their position within the organization. These include the following:

Individual PMO or "Project Management Office": Individual PMOs typically provide functional support (e.g., infrastructure, document management, training, etc.) to a single complex project or program. They set basic standards and oversee planning and control activities for a single project.

Departmental PMO or "Business Unit PMO": Departmental PMOs provide support for multiple projects at a department or business unit level. Their primary challenge is to integrate projects of different sizes within a division (e.g., IT, Finance) from small, short-term initiatives to multi-year programs with multiple resources and complex integration of technologies.

Corporate PMO or "Enterprise PMO": Corporate PMOs create standards, processes, and methodologies to improve project performance within an organization. They are typically responsible for allocating resources to different projects across the organization.

The Individual, Departmental and Corporate PMOs are interesting to consider, separate and apart from the typical types of PMOs put forward by the PMI. The PSB is a matrix structure with functional heads and functional divisions and due to its unique set up, considerations may have to be given to a unique PMO as well.

The PMO Framework is also an important consideration as the different configurations of PMOs can be explored in order to determine the appropriate missions, goals and objectives of the PSB. It will also prove beneficial in deciding the structure of the PSB's PMO, its operation and its design. According to the results captured in the PMI Pulse of Profession (2013), five PMO frameworks can be considered:

- **Organizational Unit PMO/Business Unit PMO/Divisional PMO/Departmental PMO**. These provide project-related services to support a business unit or division within an organization including, but not limited to, portfolio management, governance, operational project support and human resources utilization.
- **Project-Specific PMO/Project Office/Program Office** - Provides project-related services as a temporary entity established to support a specific project or program. May include supporting data management, coordination

of governance and reporting, and administrative activities to support the project or program team.

- **Project Support/Services/Controls Office or PMO** - Provides enabling processes to continuously support management of project, program or portfolio work throughout the organization. Uses the governance, processes, practices, and tools established by the organization and provides administrative support for delivery of the project, program or portfolio work within its domain.
- **Enterprise/Organization-wide/Strategic/Corporate/Portfolio/Global PMO** - The highest-level PMO in organizations having one, this PMO is often responsible for alignment of project and program work to corporate strategy, establishing and ensuring appropriate enterprise governance, and performing portfolio management functions to ensure strategy alignment and benefits realization.
- **Center of Excellence/Center of Competency** - Supports project work by equipping the organization with methodologies, standards and tools to enable project managers to better deliver projects. Increases the capability of the organization through good practices and a central point of contact for project managers.

These will be further elaborated in subsequent chapters covering the characteristics and function of the Hybrid/Enterprise PMO for the PSB.

3. METHODOLOGICAL FRAMEWORK

The Methodological Framework is the research structure of the FGP and will include information sources, research methods, tools, assumptions, constraints and deliverables.

3.1. Information sources

According to the Library and Information Science Network (2018), an information source is any medium that might inform a person about something or provide knowledge to somebody. Information sources may be observations, people speeches, documents, pictures, organizations etc. Sources are generally categorized as primary and secondary.

3.1.1 Primary sources

According to the McQuade Library, Research Help Section (n.d.), primary sources are original materials on which other research is based, these include:

- original written works:
  - poems, diaries
  - court records
  - interviews
  - surveys
  - original research/fieldwork, and research published in scholarly/academic journals

The primary information sources used in this FGP include:

- interviews and surveys with management and key stakeholders
- personal assessment
- experiences
- observations

3.1.2 Secondary sources

According to the McQuade Library, Research Help Section (n.d.), secondary sources are those that describe or analyze primary sources, including reference materials, these include:

- dictionaries
- encyclopedias
- textbooks
- books and articles that interpret, review, or synthesize original research/fieldwork

The secondary information sources used in the FGP include:

- PMBOK Guide Sixth Edition
- organizational documents inclusive of templates and project documents
- websites
- project management and project management office presentations
- referenced textbooks and MPM course materials

The chart which follows indicates the sources used in completing this FGP.

Chart 1

Primary and Secondary Information Sources

Objectives	**Information sources**	
	Primary	**Secondary**
To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.	Interviews and surveys with Managers, Team Leaders, relevant project team members and MPM original practical assignments.	PSB's documented strategic and operational structure, procedures and processes, work plans, project proposals, templates, reports and MPM course materials.
To assess the different Project Management Office structures in order to determine the one best suited for the PSB.	Interviews with ISD Manager, Project Manager and relevant stakeholders within the industry and MPM original practical assignments.	PMBOK Guide Sixth Edition, organizational documents inclusive of templates and project documents, websites research, related literature studies, project management office presentations, journals and MPM course materials.
To establish the characteristics and functions of the proposed PMO, position within the organizational structure and level of authority.	Interviews with ISD Manager, Project Manager and relevant stakeholders within the industry and MPM original practical assignments.	PMBOK Guide, Sixth Edition, organizational documents inclusive of templates and project documents, websites research, related literature studies, project management office presentations, journals and MPM course materials.
To develop an implementation plan for the PMO in order to	Interviews with ISD Manager, Project Manager and relevant	PMBOK Guide, Sixth Edition, organizational documents inclusive of templates and

Objectives	Information sources	
	Primary	Secondary
establish the processes needed to improve organizational maturity.	stakeholders within the industry	project documents, websites research, related literature studies and implementation plans, project management office presentations, journals and MPM course materials.

3.2. Research methods

Research methods are the strategies, processes or techniques utilized in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic (University of Newcastle Library guides, Research Methods Section,2020). The primary research method used in the FGP is the qualitative method along with its associated tools for data collection.

3.2.1 Qualitative method – Qualitative research is defined as “the study of the nature of phenomena”, including “their quality, different manifestations, the context in which they appear or the perspectives from which they can be perceived”, but excluding “their range, frequency and place in an objectively determined chain of cause and effect” (Busetto et al., 2020). It can be used to gather in-depth insights into a problem or generate new ideas for research (Bhandari, 2020). For the purpose of the FGP, this research method involved the use of the following as defined by Busetto et al. (2020):

- Observation – Observations are particularly useful to gain insights into a certain setting and actual behavior at a specific time, as opposed to reported behavior or opinions. Qualitative observations can be either participant or non-participant in nature. In participant observations, the observer is part of the observed setting, for example a nurse working in

an intensive care unit while in non-participant observations, the observer is present in but not part of the situation, trying not to influence the setting by their presence.

- Document Study - Document study (also called document analysis) refers to the review by the researcher of written materials. These can include personal and non-personal documents such as archives, annual reports, guidelines, policy documents, diaries or letters.

- Semi-structured Interviews – Hijmans and Kuyper as stated in Busetto et al., (2020) describe qualitative interviews as “an exchange with an informal character, a conversation with a goal” (p.3). Interviews can be distinguished by the degree to which they are structured as in a questionnaire or open for example as a free conversation or autobiographical interviews. They can also be semi-structured.

- Semi-structured interviews are characterized by open-ended questions and the use of an interview guide (or topic guide/list) in which the broad areas of interest, sometimes including sub-questions, are defined. The pre-defined topics in the interview guide can be derived from the literature, previous research or a preliminary method of data collection, e.g. document study or observations. For the FGP, this will be achieved using both structured and unstructured approaches.

- Survey Research – Surveys are designed to collect information from a small number of people considered to be representative of a larger number of people to be studied. This information might include their attributes, behavior, preferences, attitudes and opinions, (Virginia Tech, Research Methods Guide section, n.d.). For the FGP, information collection was done using open-ended questions to collect narrative and description from the participants.

Chart 2

Research Methods of Observation, Document Study, Interviews and Survey Research

Objectives	**Research methods**			
	Observation	**Document Study**	**Interview**	**Survey Research**
To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.	This method was applied in the development of project proposals and in project meetings.	The analysis of project documents, templates, reports, lessons learned repository, results of previous project selection decisions, and information about previous project performance, organizational documents including plans, policies and procedures.	Information was obtained using face-face and telephone conversations with management personnel and key stakeholders.	Information was gathered using open-ended questions to collect narrative and description.
To assess the different Project	Relied on experiences and existing	The assessment of existing	Information was obtained using face-	Information was gathered using open-

Objectives	Research methods			
	Observation	**Document Study**	**Interview**	**Survey Research**
Management Office structures in order to determine the one best suited for the PSB.	knowledge as an employee.	literature of PMO's, organizational structure, process documents, strategic and operational plans.	face and telephone conversations with management personnel.	ended questions to collect narrative and description
To establish the characteristics and functions of the proposed PMO, position within the organizational structure and level of authority.	Relied on experiences and existing knowledge as an employee.	The assessment of existing literature of PMOs, organizational structure, process documents, strategic and operational plans.	Information was obtained using face-face and telephone conversations with management personnel and key stakeholders.	Information was gathered using open-ended questions to collect narrative and description
To develop an implementation plan for the PMO in order to establish the processes needed to	Not applicable	The assessment of existing literature of PMOs and organizational maturity	Information was obtained using face-face and telephone conversations with	Information was gathered using open-ended questions to collect narrative and

Objectives	**Research methods**			
	Observation	**Document Study**	**Interview**	**Survey Research**
improve organizational maturity.		assessment models.	management personnel and key stakeholders.	description

3.3. Tools

Tools are instruments used to collect information for performance assessments, self-evaluations and external evaluations (Patidar, 2015). The tools employed in the FGP include:

- interviews
- survey
- expert judgement
- maturity assessment model
- networking, stakeholders' consultation
- data gathering and analysis
- enterprise environmental factors
- organizational process assets
- interpersonal skills

Chart 3

Tools Used to Assess the FGP Objectives

Objectives	**Tools**
To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.	Maturity assessment model, enterprise environmental factors, organizational process assets and interviews.
To assess the different Project Management Office structures in order to determine the one best suited for the PSB.	Interviews, survey, expert judgement, data gathering and analysis, networking, stakeholders' consultation and interpersonal skills.
To establish the characteristics and functions of the proposed PMO and its position within the organizational	Interviews, survey, expert judgement, data gathering and analysis, organizational process assets,

Objectives	Tools
structure and level of authority.	networking, stakeholders' consultation and interpersonal skills.
To develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.	Interviews, survey, expert judgement, maturity assessment model, networking, stakeholders' consultation, data gathering, data analysis, enterprise environmental factors, organizational process assets and interpersonal skills.

3.4. Assumptions and constraints

The PMBOK Guide (2017) defines an assumption as, "a factor in the planning process that is considered to be true, real, or certain, without proof or demonstration" (p.699). The assumptions considered for the purpose of the FGP are, but not limited to, the following:

- Project documentation including enterprise environmental factors, organizational process assets are easily accessible.
- Interviewees are available and willing to disclose experiences and perspectives.
- The appropriate maturity assessment model was defined and applied.
- The appropriate Project Management Office structure was determined given the matrix-structure of the PSB.
- The PMO will contribute to the effective planning and execution of impactful projects across the divisions given the application of best practices and project management standards.
- The level of authority will be consistent with the proposed PMO.
- The Implementation plan will comprehensively capture the processes and steps in improving the maturity of PSB.

- Processes will be streamlined to improve organizational maturity.

The PMBOK Guide (2017) defines a constraint as “a limiting factor that affects the execution of a project, program, portfolio or a process” (p.701). The constraints considered on the FGP are, but not limited to, the following:

- Limited time to conduct research, gather data and properly perform data analysis.
- Challenges in scheduling interviews as COVID-19 has affected the work schedules of management personnel and staff.
- Management’s acceptance or rejection of the defined PMO and their willingness to adjust organization’s structure.
- High level bureaucracy within the organization.
- The Board of Director’s sensitivity and lack of understanding of the value of the proposed PMO.
- Limited time available to develop a comprehensive assessment of the maturity gaps in the organization.
- The scope of the FGP will only allow for a preliminary analysis of the gaps in the organization.

Chart 4

Assumptions and Constraints of the FGP

Objectives	Assumptions	Constraints
To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.	• Project documentation including enterprise environmental factors, organizational process assets are easily accessible. • Interviewees are available and willing to disclose experiences and perspectives.	• Limited time to conduct research, gather data and adequately perform data analysis. • COVID-19 has affected the work schedules of management personnel and staff.

Objectives	Assumptions	Constraints
	• The appropriate maturity assessment model was defined and applied.	
To assess the different Project Management Office structures in order to determine the one best suited for the PSB.	• The appropriate Project Management Office structure was determined given the matrix-structure of the PSB.	• Management's acceptance and non-acceptance of the defined PMO and their willingness to adjust organization's structure.
To establish the characteristics and functions of the proposed PMO, position within the organizational structure and level of authority.	• The PMO will agree to contribute to the effective planning and execution of impactful projects across the divisions. • The level of authority will be consistent with the proposed PMO.	• High level bureaucracy within the organization. • The Board of Directors sensitivity and understanding of the value of the proposed PMO.
To develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.	• The Implementation plan will comprehensively capture the processes and steps in improving the maturity of PSB. • Processes will be streamlined to improve organizational maturity.	• There is limited time available to develop a comprehensive assessment of the maturity gaps in the organization. • The scope of the FGP will only allow a preliminary analysis of the gaps in the organization.

3.5. Deliverables

A deliverable is defined as any unique and verifiable product, result, or capability to perform a service that is required to be produced to complete a process, phase, or project. Deliverables may be tangible or intangible, (PMBOK Guide, Sixth Edition, 2017). The expected deliverables to be developed in the FGP are:

- Maturity Assessment Report outlining the results of the maturity assessment model and the gaps identified in the organization's project management existing framework.
- Design of the proposed PMO highlighting the most appropriate structure consistent with the functional areas of the PSB.
- Design of the proposed PMO highlighting the most appropriate location on the organizational structure and the level of autonomy for effective management.

Implementation Plan outlining a suitable methodology of the processes needed to improve organizational maturity. In addition to tools, techniques and templates to be utilized in project activities.

Chart 5

Deliverables of the FGP

Objectives	Deliverables
To evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.	Maturity Assessment Report outlining the results of the assessment model and the gaps identified in the organization's project management existing framework.
To assess the different Project Management Office structures in order to determine the one best suited for the PSB.	Design of the proposed PMO highlighting the most appropriate structure consistent with the functional areas of the PSB.
To establish the characteristics and functions of the proposed PMO, position within the organizational structure and level of authority.	Design of the proposed PMO highlighting the most appropriate location on the organizational structure and the level of autonomy for effective management.
To develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.	Implementation Plan outlining a suitable methodology of the processes needed to improve organizational maturity, as well as, the tools, techniques and templates to be utilized in project activities.

4. RESULTS

In order to achieve the objectives surrounding the establishment of a Project Management Office, the Public Sector Body was assessed through the lens of two (2) Maturity Models; the Project Management Maturity Model and the Portfolio Assessment Model, in addition to, a Project Management Office questionnaire. The maturity assessments were prepared and are reflective of the model developed by PM Solutions. The Project Management Maturity Model included the ten (10) knowledge areas of the Project Management Standard mapped against five (5) maturity levels (see Appendix 4). Each of the ten knowledge areas was broken down into specific components and progressive maturity was broken down level by level. Each component was associated with a maturity level characteristic (for Levels 1 through 5), with descriptions of component qualities at each level. The model has five distinct process levels and examined the Public Sector Body's implementation across the ten project management knowledge areas. Each level represented a discrete organizational capability based on summary-level characteristics. Project Management maturity was determined based on the capabilities observed in association with the level of process standardization.

The Portfolio Maturity Model consisted of eight (8) Portfolio Management Perspectives, namely: Portfolio Management, Portfolio Governance, Project Opportunity Assessment and Initiation, Project Prioritization and Selection, Portfolio and Project Communications Management, Portfolio Resource Management, Portfolio Risk Management, Portfolio Management Organizational Structure and Portfolio Performance Management. For each perspective, progressive maturity was broken down level by level and associated with a maturity level characteristic (for Levels 1 through 5), with descriptions of component qualities at each level. The model has five distinct process levels and examined the Public Sector Body's portfolio management capabilities across the organization. Each level represented a discrete organizational capability based on summary-level characteristics (see Appendix 5). Portfolio Management maturity was determined based on the organization's level of maturity within each perspective.

Given the decentralized structure of the PSB, a combination of the project management and portfolio maturity models was employed in order to determine the operational and strategic approaches to the management of projects simultaneously across the PSB.

The Project Management Office questionnaire (see Appendix 6) was designed to capture the perspectives of relevant project personnel as it relates to the relevant roles and responsibilities of a Project Management Office (PMO) within the Public Sector Body. The instrument also sought to identify the most suitable position within the organizational structure and its level of autonomy. Built into the instrument was a suitability assessment of organizational and project attributes in an attempt to tailor an agile approach for project management.

A selection of managerial staff across divisions was identified as suitable candidates to participate in the maturity assessments. This selection was based on a pre-determined criterion which included years of employment and experience in project management. Managers are responsible for and oversee several projects within their respective divisions and as such possess the requisite knowledge and understanding of project management concepts. Suitable candidates for the PMO questionnaire included both managerial staff and relevant project personnel, a total of ten (10) participants. The selection of project personnel for their input was predominantly based on their experience and active involvement in the development and execution of projects.

The maturity models revealed the level of standardization for project and portfolio management processes in the PSB. Associated tools such as observation, document study and interviews were also applied. Unstructured preliminary interviews conducted with relevant project management personnel revealed gaps in the project management best practices and the utilization of associated tools. Documents, procedures and processes were audited for gaps and the general culture towards project management was assessed through observational lens and

the established culture statement. The culture statement does not explicitly speak to the adoption of project management best practices or any project management approach.

4.1. Analysis of the Project Management Maturity and the Portfolio Management Models.

The maturity level for each project management knowledge area is determined based on the capabilities outlined within each level. The general description of the capabilities for maturity levels 1-5 is outlined in Chart 6 below:

Chart 6

Maturity Level Description (Extracted from: Project & Portfolio Management Maturity Model (Crawford, 2015)

Maturity Level	Description
Level 1 Initial Process	Although there is a recognition that project management processes exist, there are no established practices or standards, and individual project managers are not held to specific accountability by any process standards. Documentation is loose and ad hoc. Management understands the definition of a project, that there are accepted processes, and is aware of the need for project management. Metrics are informally collected on an ad hoc basis.
Level 2 Structured Process & Standards	Many project management processes exist within the organization, but they are not considered organizational standards. Documentation exists on these basic processes. Management supports the implementation of project management, but there is neither consistent understanding and involvement nor an organizational mandate to comply for all projects. Functional management is involved in the project management of larger, more visible projects, and these are typically executed in a systematic fashion. There are basic metrics to track project cost, schedule, and technical performance, although data may be collected or correlated manually. Information available for managing a project is often a mix between summary-level data and detail-level data.
Level 3 Organizational Standards and Institutionalized Process	All project management processes are in place and established as organizational standards. These processes involve clients and internal customers as active and integral members of the project team. Nearly all projects use these processes with few exceptions. Management has institutionalized the processes and standards with formal documentation existing on all processes and standards.

Maturity Level	Description
	Management is regularly involved in input and approval of key decisions and documents and in key project issues. The project management processes are typically automated. Each project is evaluated and managed in light of other projects. *The processes must become tailorable to the characteristics of each project.*
Level 4 Managed Process	Projects are managed with consideration as to how they performed in the past and what is expected for the future. Management uses efficiency and effectiveness metrics to make decisions regarding a project and understands the impact on other projects. All projects, changes, and issues are evaluated based upon metrics from cost estimates, baseline estimates, and earned value calculations. Project information is integrated with other corporate systems to optimize business decisions. Processes and standards are documented and in place to support the practice of using such metrics to make project decisions. Management clearly understands its role in the project management process and executes it well, managing at the right level, and clearly differentiating management styles and project management requirements for projects of different sizes and complexities. Project management processes, standards, and supporting systems are integrated with other corporate processes and systems.
Level 5 Optimizing Process	Processes are in place and actively used to improve project management activities. Lessons learned are regularly examined and used to improve project management processes, standards, and documentation. Management and the organization are focused not only on effectively managing projects, but also on continuous improvement. The metrics collected during project execution are used to both understand the performance of a project and to make organizational management decisions for the future.

The general description for maturity levels 1-5 outlined in Chart 6 will be used as an umbrella guide, whereas the results from specific components under each knowledge area will be taken into consideration in determining the overall maturity level for each knowledge area and the PSB. The maturity level for the specific components is determined based on the capabilities outlined within each unique

level. A scale of knowledge levels (from 1 to 5) was used, with 5 being the most standardized level that is framed within the umbrella descriptions. Based on the analysis of the Project Management Maturity Model the following maturity assessment results were obtained:

Chart 7

Project Management Maturity Assessment Scores

Project Management Knowledge Areas & Components		**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**
Project Integration Management		
Specific Components of Integration Management	Project Charter Development	2
	Project Management Plan Development	2
	Project Execution	3
	Monitoring and Controlling Project Work	2
	Integrated Change Control	2
	Project or Phase Closure	3
	Project Management Office (PMO)	3
Overall Maturity score for Integration Management		**2**
Project Scope Management		
Specific Components of Scope Management	Scope Management Planning	2
	Requirements Collection	1
	Scope Definition	2
	Work Breakdown Structure	2
	Scope Validation	2
	Scope Change Control	2
Overall Maturity score for Scope Management		**1**

Project Management Knowledge Areas & Components		Maturity Level 1-5 (Process Standardization) Level 1 - Initial Process Level 2 - Structured Process & Standards Level 3 - Organizational Standards and Institutionalized Process Level 4 - Managed Process Level 5 - Optimizing Process
Schedule Management		
Specific Components of Schedule Management	Schedule Management Planning	2
	Activity Definition	1
	Activity Sequencing	1
	Activity Resource Estimating	1
	Activity Duration Estimating	1
	Schedule Development	1
	Schedule Control	1
Overall Maturity score for Schedule Management		**1**
Cost Management		
Specific Components of Cost Management	Cost Management Planning	2
	Cost Estimating	1
	Budget Determination	1
	Cost Control	1
Overall Maturity score for Cost Management		**1**
Quality Management		
Specific Components of Quality Management	Quality Management Planning	2
	Quality Assurance	1
	Quality Control	2
Overall Maturity score for Quality Management		**1**
Resource Management		
Specific Components of Resource Management	Resources Management Planning	2
	Activity Resources Estimating	2
	Resource Acquisition	3
	Team Development	2

Project Management Knowledge Areas & Components		Maturity Level 1-5 (Process Standardization) Level 1 - Initial Process Level 2 - Structured Process & Standards Level 3 - Organizational Standards and Institutionalized Process Level 4 - Managed Process Level 5 - Optimizing Process
	Team Management	4
	Resource Control	3
Overall Maturity score for Resource Management		**2**
Communications Management		
Specific Components of Communications Management	Communications Management Planning	1
	Communications Management (Information Distribution)	2
	Communications Monitoring and Control	2
Overall Maturity score for Communications Management		**1**
Risk Management		
Specific Components of Risk Management	Risk Management Planning	2
	Risk Identification	2
	Qualitative Risk Analysis	2
	Quantitative Risk Analysis	2
	Risk Response Planning	1
	Risk Control/Implementation	1
	Risk Monitoring	2
Overall Maturity score for Risk Management		**1**
Procurement Management		
Specific Components of Procurement Management	Procurement Management Planning	3
	Conducting Procurements	3
	Procurement Control	2
Overall Maturity score for Procurement Management		**2**

Project Management Knowledge Areas & Components		**Maturity Level 1-5 (Process Standardization)**
		Level 1 - Initial Process
		Level 2 - Structured Process & Standards
		Level 3 - Organizational Standards and Institutionalized Process
		Level 4 - Managed Process
		Level 5 - Optimizing Process
Stakeholder Management		
Specific Components of Stakeholder Management	Stakeholder Identification	3
	Stakeholder Management Planning	2
	Managing Stakeholder Engagement	2
	Monitoring/Controlling Stakeholder Engagement	2
Overall Maturity score for Stakeholder Management		**2**
Overall Organizational Maturity Score		**1**

In conclusion, the overall organizational maturity level for the PSB was determined based on a review of the maturity assessment results for each of the ten knowledge areas. The lowest level assessed was determined as the organizational maturity level.

In the case of the PSB, the overall organizational maturity is at Level 1 which is the **initial process** since the following knowledge areas: *scope, schedule, cost, quality, communications and risk management* revealed a Level 1 score. Whilst the knowledge areas of *project integration, resource, procurement and stakeholder management* revealed a Level 2 score which corresponds to **structured processes and standards**, based on the model, the **overall maturity level for the component cannot be higher than the lowest individual/specific component score.** Therefore, an overall level 1 score is appropriate.

4.1.1. Chapter 1: Project Integration Management Artifacts and Subsidiary documentation

In the knowledge area of **Project Integration Management**, the results of the project management maturity assessment for the PSB indicated a process standardization level of two (2). Level two (2) on the maturity scale corresponded to structured processes and standards which included basic documented processes for the development of project plans and reports on work results. Furthermore, even though the basic processes are in place, they are not considered organizational standards. Moreover, management is typically more involved only on high-visibility projects.

Chart 8

Project Integration Management Artifacts and Subsidiary documentation

Project Integration Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Project Charter Development	2	The PSB has a Project charter template in place, along with other documents such as contracts and agreements which at times may be substituted for a Charter.
Project Management Plan Development	2	The PSB has a project management manual, based on PMBOK Guide, 5th edition. In addition, Project management professionals are being developed consistently in one division and project team members are being trained in the policies and procedures of the Manual. Of note, it was also discovered that documentation is done based on the reporting requirements of funders of projects.

Project Integration Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Project Execution	3	While this specific component was given an individual Level 3 score based on the maturity assessment, it is important to note that the integration and analysis of "summary and detail-level information on work results inclusive of status and performance reports containing information from knowledge areas" are only in place for externally funded projects (Crawford, 2015). The Process Division of the PSB is implementing this level of analysis for large customer projects, however, training is needed in other core divisions.
Monitoring and Controlling Project Work	2	This specific component corresponded to a Level 2 maturity which is summarized as "the production of status and performance reports to track progress toward achieving scheduled milestones. Basic metrics (such as planned budget and milestone percent complete) are collected and integrated into project performance reports" (Crawford, 2015, p.28). As in the case of Project Execution, this is in place for externally funded projects. The Process Division of the PSB is implementing this level of analysis for large customer projects. Buy-in, training and PM software are needed in other core divisions including the PMU team.
Integrated Change Control	2	The PSB has a change control process and templates are in place but mainly applied to externally funded projects. These templates are also used in the Process Division of the PSB; however, training is needed in other core divisions.

Project Integration Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		Considering the above mentioned, this specific component was considered to be at maturity Level 2.
Project or Phase Closure	3	The results of this specific component revealed a Level 3 maturity score. This score is corroborated by the defined processes of project reporting and deliverable acceptance that are used consistently across the PSB. Importantly, changes or issues are communicated immediately to the customer. Clients are involved in product testing and the sign off on deliverables. In addition, the assessment showed that project or phase closure followed the requirements of the donor.
Project Management Office (PMO)	3	A PMU was formally established in July 2020 at the PSB. This component received a score of Level 3 that demonstrated that the PMO is an accepted part of the organizational project management landscape and is involved integrally with the project managers in the organization. Although, the functions and services of the PMO are defined at the PSB, they are not yet communicated throughout the organization.

4.1.2. Chapter 2: Project Scope Management Artifacts and Subsidiary documentation

In the knowledge area of **Scope Management**, the results of the project management maturity assessment for the PSB revealed a process standardization level of one (1). This level on the maturity scale corresponded to characteristics such as limited scope definition, ad hoc documentation and management of all elements (issues, changes, etc.). Furthermore, despite an awareness of the need for managing project efforts, there are no standards in the organization for project management. Management is generally aware of the scope of the initiatives, but typically only to the point of defining a few key milestones.

Chart 9

Project Scope Management Artifacts and Subsidiary documentation

Project Scope Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Scope Management Planning	2	A scope management plan template exists in the PSB and is used by the PMO and the Process Division. However, training is needed for the other core areas.
Requirements Collection	1	It was determined that business requirements are collected in an undocumented and ad hoc manner and may be limited to a statement of purpose. Technical requirements however may be more formally documented and

Project Scope Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		contain some general definition of what will be produced if deliverables are met. It was also observed that requirements collection may not exist in areas of the PSB.
Scope Definition	2	The maturity assessment identified that a standard scope statement template exists in the PSB. Additionally, the process for completing the template is documented. All large or high-value projects generally require scope statements that are mainly based on the requirements of funders. Documentation of requirement is used as input into the scope definition process and change control processes exist to manage scope.
Work Breakdown Structure	2	The maturity assessment revealed that the WBS is only being utilized in one division of the PSB. All large or high-value projects require a WBS. These WBS structures are used to develop project schedules and serve as communication vehicles with sponsors, and as primary vehicles for communicating project status. Development of a technical requirement document is sometimes part of the project

Project Scope Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		management process if needed.
Scope Validation	2	The component was observed being done in two core divisions This level includes a process for validating and reviewing project deliverables, in addition to, verification of project scope (i.e., what is to be included in or excluded from the project) with the client or customer by the project manager.
Scope Change Control	2	Includes the utilization of a Change Request template. Within this component, it is further understood that management supports the documented scope change control process and monitors compliance for larger, more visible projects.

4.1.3. Chapter 3: Project Schedule Management Artifacts and Subsidiary documentation

In the knowledge area of **Schedule Management**, the overall results of the maturity assessment indicated a process standardization level of 1. This score of one (1) corresponds to an “initial process” which is defined as “no established planning or scheduling standards exist and a lack of documentation makes it difficult to achieve repeatable project success” (Crawford, 2015, p.57).

Chart 10

Project Schedule Management Artifacts and Subsidiary documentation

Project Schedule Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Schedule Management Planning	2	The PSB has a schedule management template in place. Development of a schedule management plan as part of the project management process, rules for defining and managing project schedules and its use on large and visible projects.
Activity Definition	1	The PSB has a template in place for defining activities. However, based on the assessment, this suggests that activities are defined in an ad hoc manner and varied by projects. Also, a scope statement is generally prepared, but the work breakdown structure consists of a basic set of milestones and perhaps

Project Schedule Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		deliverables. The schedule is elaborated at the milestone level. Functional support areas may be overlooked.
Activity Sequencing	1	Project activities are sequenced on an ad hoc basis, if at all. Additionally, if project activities are sequenced, they seldom reflect dependencies. Individual project teams may have access to and understand sequencing methods, but the methods are not standardized throughout the organization. Network diagrams revealing dependencies do not usually exist.
Activity Resource Estimating	1	Project managers have developed their own ways of identifying resources and quantities needed (labor categories, hours, equipment, and materials).
Activity Duration Estimating	1	Project managers have developed their own ways of estimating hours, so there is no consistency across projects or departments. As a result, it would be difficult to use historical information to improve estimate accuracy.
Schedule Development	1	Ad hoc approaches and no organizational processes for developing a schedule. Project teams and different segments of

Project Schedule Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		the organization use various methods to develop schedule baselines using milestones. There is no tool commonality in the organization.
Schedule Control	1	Individual project teams and segments of the organization apply their own approaches to managing and controlling schedules.

4.1.4. Chapter 4: Project Cost Management Artifacts and Subsidiary documentation

In the knowledge area of **Cost Management,** the overall results of the maturity assessment indicated a process standardization level of 1. This score of one (1) corresponds to an 'initial process' which is defined as accepted processes but no established practices or standards are in place. In addition, cost process documentation is ad hoc and individual project teams may follow informal practices.

Chart 11

Project Cost Management Artifacts and Subsidiary documentation

Project Cost Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Cost Management Planning	2	The PSB utilizes a template for the development of a cost management plan as part of the project management process. The plan establishes rules for defining and managing project budgets. Most large and visible projects develop and utilize such plans.
Cost Estimating	1	Project managers will have a scope statement and a schedule consisting of a basic set of milestones and perhaps a list of deliverables to serve as a basis for estimating. This is applicable in some respects to the PSB.
Budget Determination	1	Project teams and segments of

Project Cost Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		the PSB may have adopted ways of developing cost baselines (allocating and time phasing cost estimates), but the organization has no established practice; documentation of the processes is incomplete
Cost Control	1	Individual project teams and segments of the organization may apply their own approaches to managing and controlling costs at the divisional level. Also, when cost performance is tracked, it is usually by the use of nonstandard practices. However, based on the results, a score of two (2) would be more applicable for externally funded projects as at the PSB established baselines in line with the project schedule exist, but may change frequently. In addition, development of summary and detailed cost reports are provided to key stakeholders.

4.1.5. Chapter 5: Project Quality Management Artifacts and Subsidiary documentation

In the knowledge area of **Quality Management**, the results of the maturity assessment indicated a process standardization level of 1. This score of one (1) corresponds to an "initial process" which is defined as "management is aware of the need for quality management but there is no established project quality practices or standards are in place" (Crawford, 2015, p.85). The results are interesting to contemplate as the PSB has an operational quality management system in place. This is further demonstrated in its quality management planning process in Chart #12 below:

Chart 12

Project Quality Management Artifacts and Subsidiary documentation

Project Quality Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Quality Management Planning	2	For the PSB, templates and manuals are in place for the quality management planning process. This component speaks to the development of a quality management plan for large and visible projects and establishes rules for defining and managing the project and product standards. Standard project management templates exist within the organization and are used consistently for all projects. The quality planning process has been enhanced to include such quality assurance processes as flowcharting, operational definitions

Project Quality Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		(metrics), and quality control measures. Metrics consist of results of reviews and tests against criteria, specifications, quality standards, and business requirements.
Quality Assurance	1	There are no established practices or standards for quality assurance. Some project teams but not all, establish procedures for their project teams and perform ad hoc checks to ensure their groups follow the procedures. Notably, quality assurance does exist in one particular division of the PSB, that handles technical projects involving construction. Due to the existence of such processes in at least one of the core divisions of the PSB, a level 2 maturity could be applied.
Quality Control	2	The PSB has quality control processes in place in one core division and as such received a level 2 maturity rating. This is translated as (i) collection and evaluation of summary-level and detailed testing metrics; (ii) the use of quality control processes on large and highly visible projects while their use is encouraged for all other projects; (iii) development of acceptance criteria and specifications including business requirements and quality standards; (iv) The utilization of tools such as acceptance criteria,

Project Quality Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		performance standards, business requirements, specifications, and quality standards covering reviews and testing.

4.1.6. Chapter 6: Project Resource Management Artifacts and Subsidiary documentation

In the knowledge area of **Resource Management**, the results of the maturity assessment indicated a process standardization level of 2. This score of two (2) corresponds to structured processes and standards which feature repeatable defined methods for planning and managing resources and details suggested inputs, tools and techniques, and outcomes. To expand the analysis of the level of maturity identified above, the following maturity, artifacts, subsidiary documentation and observations for the specific components of Resource Management were analyzed.

Chart 13

Project Resource Management Artifacts and Subsidiary documentation

Project Resource Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Resources Management Planning	2	For the PSB, this component is in place in one unit of one of the core divisions. This is definitely a component that would be important to roll out through the three core divisions that manage projects. A level 2 maturity rating was assigned to this component which is comprised of the following elements: ▪ Written descriptions delineating the responsibilities of key project personnel. ▪ A staffing plan that specifies when resources are needed. ▪ Project progress, planned and actual measurements compared to staffing plans. ▪ Updated planning information

Project Resource Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		from project integration and relevant corrective actions. ▪ Basic processes of defining how to estimate, acquire, manage and utilize physical and team resources
Activity Resources Estimating	2	The establishment of basic processes of estimating resources and the type and quantities of material, equipment and supplies necessary to perform project work. However, it does not reflect resource requirement, basis of estimates, resource breakdown structure, activity attributes and assumption logs.
Resource Acquisition	3	The PSB utilizes institutionalized processes to decide on team members, facilities, equipment, materials, supplies and other resources necessary to complete project work.
Team Development	2	Guidelines are in place for inclusion of project teams in initiation meetings, status reviews, business reviews, technical reviews, and regular and ongoing project reviews. Regular status and progress meetings are conducted to keep project team members apprised of progress and deal with issues that arise. The project manager contributes to the performance evaluations of the team members. A rewards and recognition system have been established to acknowledge individual and team performances

Project Resource Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		and a conflict management process is developed.
Team Management	4	Tracking team members' performance, providing feedback, resolving issues and managing team changes to optimize project performance is done on ad hoc basis. There is no established process for team management.
Resource Control	3	PSB has institutionalized processes of ensuring that the physical resources assigned and allocated to the project are available as planned. Resources are also monitored based on the planned versus actual use of resources and corrective actions are performed as necessary.

4.1.7. Chapter 7: Project Communication Management Artifacts and Subsidiary documentation

In the knowledge area of **Communication Management**, the results of the maturity assessment indicated a process standardization level of 1. This score is suggestive that the PSB utilizes an “initial process” which is translated as the utilization of ad hoc communications whereby project status is reported informally.

Chart 14

Project Communication Management Artifacts and Subsidiary documentation

Project Communication Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Communications Management Planning	1	PSB has a manual and a template in place for project communications. However, the level 1 maturity rating assigned by the model, suggests that there are no established standards for communications planning in place. Also, project managers may provide status reports to management only when required.
Communications Management (Information Distribution)	2	A structured process for the dissemination of project information via electronic medium or hard-copy documentation is in place at the PSB. Of note, the project manager is responsible for ensuring that project information is retrieved in a timely fashion and that the stakeholders obtain

Project Communication Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		the information they need.
Communications Monitoring and Control	2	This includes the generation of summary reports covering status, progress, and phase completion generated at periodic intervals throughout the life of a project. These reports track milestone attainments of scheduled items. Markedly, customers execute formal documents to acknowledge their acceptance of project deliverables and indicate project closure. At the conclusion of the project there is a formal sign-off. Project deliverable completion and formal acceptance as well as project closure are reported. There is a documented issues management process in place.

4.1.8. Chapter 8: Project Risk Management Artifacts and Subsidiary documentation

In the knowledge area of **Risk Management**, the results of the maturity assessment indicated a process standardization level of 1. This level on the maturity scale corresponded to characteristics such as the need for risk management and established practices or standards, maximal documentation and shared results coupled with a risk response process that is reactive rather than planned and proactive. In association with a level 1 maturity level, the results of the specific components of Risk Management identified the following artifacts, subsidiary documentation and observations:

Chart 15

Project Risk Management Artifacts and Subsidiary documentation

Project Risk Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Risk Management Planning	2	The capabilities highlighted included the development of a risk management plan as part of the project management process in addition to a risk management plan with stated rules for defining and managing project risks. Plans for specific projects are also recorded.
Risk Identification	2	The score acknowledged that the PSB has a documented process for identifying project risks, a standard practice on small, large and highly visible projects. A conscious effort is made to

Project Risk Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		identify total project risks (near- and longer-term in as much detail as makes sense) and risk discussions include inputs from key stakeholders as per the template developed by the PSB.
Qualitative Risk Analysis	2	From the qualitative aspect a template was developed by the PSB with documented process detailing a standard methodology for assessing the probabilities and impacts of risks. The common methodology explains low, medium, and high-risk ratings.
Quantitative Risk Analysis	2	A template is also developed by the PSB. The score presumes that the documented process includes a standard method to ensure consistent assessment of risk items. The methodology may include assigning numeric ratings to low, medium, and high risks and determining the expected financial impact of risks using simple probability and value calculations.
Risk Response Planning	1	Manuals and templates were developed but there is uncertainty as to their utilization. Additionally, the assessment revealed that a large part, risks are considered as they arise, however teams seldom determine mitigation strategies or plan for

Project Risk Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		contingencies for future risk events.
Risk Control/Implementation	1	Project teams perform more day-to-day problem solving when new risks occur. They develop work-around to address the events instead of working from a risk management plan and identifying additional risk response strategies.
Risk Monitoring	2	The PSB actively documents lessons learnt in lessons learnt logs and past project reports. While this is a positive for the PSB, the results of the assessment indicated that at a level 2 maturity, the information collected may not be used consistently and as such the monitoring of the implementation of agreed-upon risk response plans, tracking identified risks, identification and evaluation of new risks effectiveness throughout the project may be inconsistent.

4.1.9. Chapter 9: Project Procurement Management Artifacts and Subsidiary documentation

In the component of **Procurement Management**, the results of the maturity assessment indicated a process standardization level of two (2). This level on the maturity scale corresponded to a documented process covering the procurement of goods and services, but not as a standard practice. The procurement organization drives the process with some input from project teams, organizational management, and clients. Procurement involves the project team and capitalizes on its expertise and knowledge. Contracts are managed at an appropriate level of detail; status is reported periodically. In association with a level 2 maturity level, the results of the specific components of Procurement Management identified the following artifacts, subsidiary documentation and observations:

Chart 16

Project Procurement Management Artifacts and Subsidiary documentation

Project Procurement Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Procurement Management Planning	3	The PSB is guided by the government stipulated procurement guidelines and operates within those regulations even on projects. At level 3, the PSB is assumed to have the project team providing formal analyses and recommendation report to both management and client and making acquisition decisions jointly. Acquisition

Project Procurement Management Specific Components	Maturity Level 1-5 (Process Standardization) Level 1 - Initial Process Level 2 - Structured Process & Standards Level 3 - Organizational Standards and Institutionalized Process Level 4 - Managed Process Level 5 - Optimizing Process	Artifacts and Subsidiary documentation
		recommendations and decisions consider effects and ramifications in such areas as organization capacity, method effectiveness, economic factors, among others. With due consideration to the elements of procurement management planning above, the overall maturity score of two (2) that is assigned to the PSB may not be a true reflection of the processes relating to procurement management. This may need to be further explored to have a greater appreciation for the existing processes that are not readily captured by the chosen model.
Conducting Procurements	3	An Internal Procurement Committee exists, but it is only convened as needed and for goods and services not exceeding a defined dollar value as stipulated by government. The score assumed that the PSB has developed an expeditious process to access suppliers and contractors and maintains a preferred suppliers list. Supplier recommendations from the project team may be incorporated into this list.

Project Procurement Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		Furthermore, the PSB has an established process for developing procurement documentation including procurement templates for statement of work, status reporting, and other common procurement artifacts.
Procurement Control	2	There is no specific format or frequency documented for status reports from suppliers. Additionally, while formal acceptance and contract closure occur, they follow no standard or documented process. Typically, closure and formal acceptance information are integrated into the communications system and lessons learned are captured informally. This may need to be further explored to have a greater appreciation for the existing processes that are not readily captured by the chosen model.

4.1.10. Chapter 10: Project Stakeholder Management Artifacts and Subsidiary documentation

In the component of **Stakeholder Management,** the results of the maturity assessment indicated a process standardization level of 2. The model specifies that at this level a basic project stakeholder management process is established. Large, highly visible projects follow the process and provide a structured approach for project stakeholder management. In association with a level 2 maturity level, the results of the specific components of Stakeholder Management identified the following artifacts, subsidiary documentation and observations:

Chart 17

Project Stakeholder Management Artifacts and Subsidiary documentation

Project Stakeholder Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Stakeholder Identification	3	The PSB has a manual and template in place that guide the process for each project and capture the interests, influence and means of engagement of stakeholder while mitigating potential negative impacts. Furthermore, a multiple classification model (power–interest, power–influence, influence–impact, etc.) is also utilized by the PSB for this purpose.
Stakeholder Management Planning	2	PSB has a manual and template in place that guide the planning process for each project. During this stage, a stakeholder analysis

Project Stakeholder Management Specific Components	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		is developed and project stakeholders are identified and provided project summary information about status, progress, and phase completion.
Managing Stakeholder Engagement	2	PSB has a manual and template in place that guide the process for each project. The model assumes that the communication processes with relevant stakeholders vary from one project to the next. Issues are addressed but the methods for handling them are not consistent and activities conducted to engage stakeholders throughout the project life cycle vary according to the project.
Monitoring/Controlling Stakeholder Engagement	2	The PSB has a manual and template in place that guide the process for each project. The model indicates that at this level of maturity, the assumption is that a process for monitoring project stakeholder relationships is in place but varies among projects**.**

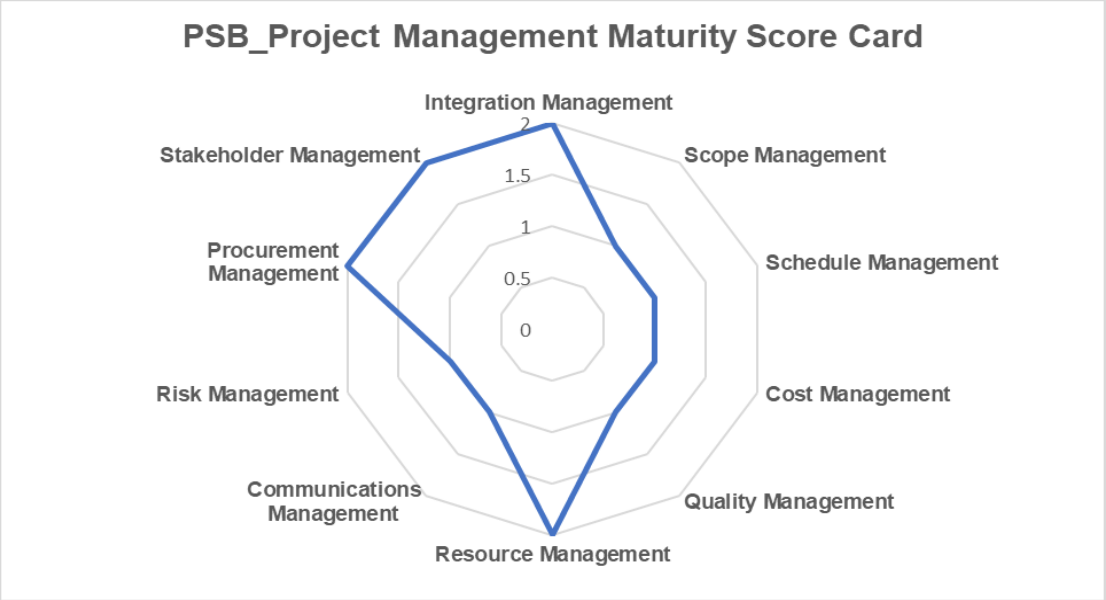

Figure 3.1. *PSB's Project Management Maturity Score Radar Card*

With all things considered, the PSB's existing project management infrastructure was contextualized within the parameters of the ten knowledge areas and the maturity characteristics. Given the elaborated assessment of the results from the Project Management Maturity model employed, while there are gaps and project management needs in the framework, there are obvious strengths and opportunities for growth and improvement. The results ascertained underscores the need for an improved or expanded Project Management Office at the PSB to reinforce the strengths highlighted and facilitate improvement opportunities in areas identified.

On another note, during the assessment a limitation of the maturity model emerged as it relates to the determination of the overall maturity score. In assigning a maturity score, the model did not take into consideration the inherent standardized processes present in each specific component of the knowledge areas. Consequently, in not doing so, an accurate organizational maturity designation may have been compromised. The condition or criteria of the maturity score determination does not therefore comprehensively capture the best suited maturity level of the organization that it is applied to.

4.1.1.1. Analysis of the Portfolio Management Maturity Assessment

Based on the analysis of the Project Portfolio Management Maturity Model the following maturity assessment results were obtained:

Chart 18

Portfolio Management Maturity Assessment Scores

Portfolio Management Maturity	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process;** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
Portfolio Governance	4	Portfolio governance is integrated with other business unit and enterprise business processes. Also, portfolios include both project and non-project work and changes to goals and objectives are reviewed for effects on portfolios. Additionally, lessons learned are used to improve decision-making capabilities. The PSB artifacts and documentation include Corporate Plans; Operational Plans, Project Management Plans, Work Plans, QMS Business Processes, Strategic Risk Management Plans and Lessons learnt logs. There is still significant influence of the parent ministry in the direction of the Council.
Project Opportunity Assessment and Initiation	1	The existence of informal assessment processes, that are neither

Portfolio Management Maturity	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process;** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		documented or consistent. Also, there is no formal process for determining business value; no single group is responsible for project assessment and value determination and no organized list of project proposals exists. No artifacts or documentation was observed for the PSB in this perspective. However, a process does exist at the PSB to determine business value and senior management is usually responsible for projects assessment. Therefore, a Level 1 maturity result may not be a realistic score for this perspective at the PSB and as such a deeper exploration of the area would be warranted.
Project Prioritization and Selection	1	Prioritization and selection processes may exist, but are not documented or consistent. Projects are funded even if critical business value information is absent. Prioritization schemes are missing and selection criteria used by review boards are not standardized. No one group is responsible for

Portfolio Management Maturity	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process;** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		project proposal selection and funding. No organized list of funded projects is available to stakeholders. No artifacts or documentation was observed for the PSB for this perspective. Where this perspective is concerned, it must be noted that project prioritization and selection at the PSB has to be done based on the mandate and strategic direction and the model applied did not account for this factor.
Portfolio & Project Communications Management	4	Project and portfolio communication processes are integrated to provide summary portfolio status reports. Project information and portfolio lists are audited to validate data. Portfolio information is available on demand for decision makers and other stakeholders. The artifacts and documentation of the PSB include projects' status, intermediate and final reports, Portfolios' monthly and annual reports, enterprise quarterly and annual reports, audited financial statements and project

Portfolio Management Maturity	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process;** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		audit reports for external projects for the PSB.
Portfolio Resource Management	3	Resource management processes are standardized, documented, and utilized across the enterprise. The enterprise portfolio review board establishes project prioritization. Business unit leaders are expected to optimize resource staffing of selected projects. Asset inventories of non-human resources are maintained and include availability information. The artifacts and documentation of the PSB include QMS policy and procedure manual, HR procedures and inventory of fixed assets including project assets.
Portfolio Risk Management	2	Risk management processes are documented and executed at the business unit level. However, the use of the processes and preparation of a portfolio risk management plan are not mandatory. Risk measures and metrics are defined at the business unit level. Although a Level 2 maturity states that a portfolio risk management plan is not mandatory,

Portfolio Management Maturity	**Maturity Level 1-5 (Process Standardization)** **Level 1 - Initial Process;** **Level 2 - Structured Process & Standards** **Level 3 - Organizational Standards and Institutionalized Process** **Level 4 - Managed Process** **Level 5 - Optimizing Process**	**Artifacts and Subsidiary documentation**
		based on the Quality Management System of the PSB, a strategic risk management plan is produced and maintained.
Portfolio Management Organizational Structure	2	Business units establish processes to manage their portfolios. A business unit has funding decision authority over project initiatives. Cross-unit initiatives are managed through committees. A business unit PMO exists to facilitate business unit portfolio reviews and to administer the business unit portfolio. For the PSB, the enterprise portfolio review board is comprised of the senior management team and portfolio reviews are done at the senior management level.
Portfolio Performance Management	1	Performance management processes are ad hoc or not standardized. Documentation of performance management processes is lacking. Management controls are inconsistent and consequently management rarely reviews portfolio performance. A level 1 maturity for this

Portfolio Management Maturity	Maturity Level 1-5 (Process Standardization) Level 1 - Initial Process; Level 2 - Structured Process & Standards Level 3 - Organizational Standards and Institutionalized Process Level 4 - Managed Process Level 5 - Optimizing Process	Artifacts and Subsidiary documentation
		perspective is not a comprehensive description of what exists at the PSB. A Project Oversight Body is established to supervise performance management and project documents and minutes of Review Board (Project Oversight Body) meetings for external project are completed.
Overall Portfolio Management Maturity	**1**	**Initial Process**

In conclusion, the overall Portfolio Management Maturity level for the PSB was determined based on a review of the maturity assessment results for each of the eight perspectives. The lowest level assessed was determined as the organizational maturity level. Based on the conditions of the model, the overall maturity level for the perspectives cannot be higher than the lowest perspective score. In the case of the PSB, the overall Portfolio Management Maturity is at Level 1 since the following perspectives; *project opportunity assessment and initiation, project prioritization and selection and portfolio performance management* revealed a Level 1 score.

Figure 4.1. *PSB's Portfolio Management Maturity Score Radar Card*

All things considered, the PSB's existing portfolio management infrastructure was contextualized within the parameters of the eight (8) perspectives and the maturity characteristics. Given the elaborated assessment of the results from the Portfolio Management Maturity model employed, there are obvious strengths and opportunities for improvement. The results ascertained from the Portfolio Management Assessment further underscores the instrumental role a PMO can play in linking the organization's projects to its strategy execution.

Notably, the limitation of the model that was observed in the Project Management Maturity level emerged during the Portfolio Assessment as well. In assigning a maturity score, the Portfolio model did not take into consideration the higher levels present in each perspective. Consequently, a precise organizational maturity designation may have been compromised. The condition or criteria of the score determination does not comprehensively capture the most suited maturity level of the organization to which it is applied.

4.2. Analysis of PMOs: PSB's Project Management Office Suitability

In order to identify and select the most appropriate PMO for the PSB, an analysis of the different types of PMOs was done to determine inherent characteristics. The results received from the PMO questionnaire were also taken into consideration in the overall determination of the suitable PMO for the PSB. Before attempting to determine the best suited PMO for the PSB, it was imperative to know whether there was a need for one. The results from the questionnaire revealed an overwhelming agreement (100% of respondents) with the need for the establishment of a PMO as it would facilitate better management of projects across the organization. This was further supported by the results emerging from the unstructured interviews conducted with managerial staff as to the pivotal role a PMO can play in the PSB.

As it relates to externally funded projects, 91% of respondents *("strongly agree & agree")* indicated that a PMO would increase the level of productivity on these projects. Similarly, 64% of respondents *("strongly agree & agree")* indicated that a PMO would improve productivity levels of internal projects and activities. Furthermore, 100% of respondents *("strongly agree & agree")* indicated that the PMO can and could play a significant role by working with stakeholders in order to maximize benefits from projects.

In relation to the type of PMO best suited for the PSB, the literature suggests that organizations would be more inclined to lean into one type of PMO, whether it was supportive, controlling or directive and not necessarily a combination. The Supportive PMO will perform the role of an internal consultant to projects "by supplying templates, best practices, training, access to information, and lessons learned". Whereas, the Controlling PMO provides support and requires compliance, "by adopting project management frameworks or methodologies, using specific templates, forms and tools, or conformance to governance." On the other hand, the Directive PMOs take control of projects by directly managing them, thereby providing a high degree of control over projects, (Giraudo & Monaldi,

2015). The characteristics of PMOs are determined based on to the level of influence and degree of control they have on projects within the organization.

The results from the PMO questionnaire indicated that 73% of respondents *("strongly agree & agree")* pointed to a supportive type PMO while 82% of respondents *("strongly agree & agree")* indicated that a more controlling PMO would be suited for the PSB. In addition, 91% of respondents indicated that the PMO should be the central point for lessons learned, templates and best practices in order to avoid or stop project teams from repeating undesirable processes. Furthermore, 50% of respondents indicated that the PMO should have a high degree of control of projects/project activities.

Based on the PMOs position within an organization, Giraudo & Monaldi (2015) proposed the Individual, Departmental and Corporate types of PMOs as well. Individual PMOs typically provide functional support (e.g., infrastructure, document management, training, etc.) to a single complex project or program. They set basic standards and oversee planning and control activities for a single project. On the other hand, the Departmental PMO or "Business Unit PMO" provides support for multiple projects at a department or business unit level. Their primary challenge is to integrate projects of different sizes within a division (e.g., IT, Finance) from small, short-term initiatives to multi-year programs with multiple resources and complex integration of technologies. Notably, the Corporate PMO or "Enterprise PMO" creates standards, processes, and methodologies to improve project performance within an organization. They are typically responsible for allocating resources to different projects across the organization.

The determination of a suitable PMO for the PSB was not only based on the generic description of each PMO type. Elements that were taken into consideration in the overall choice included the matter of culture, strategic alignment, governance structure, infrastructural and resource frameworks, to name a few, that are embedded within the organization. Considering that the PSB is comprised of

different divisions, each with its own set of unique projects, the PMO should also be unique in nature to manage the varying project demands of each division. The one-size fit all will not be applicable to a dynamic and unique organization such as the PSB.

The results from the PMO questionnaire administered revealed that, 64% of respondents proposed a Hybrid or a unique “Enterprise PMO” for the PSB. The Hybrid/Enterprise PMO would be a combination of a Departmental and a Corporate PMO with interlocking roles of supporting, controlling and directing. This result coupled with the maturity levels for both project management and portfolio management are important in determining the characteristics of the proposed PMO.

In exploring the establishment of a Hybrid/Enterprise PMO, (the expansion of the current PMU), it is important to consider the element of alignment. In this regard, 91% of respondents suggested that an effective PMO is one that is aligned with the corporate strategy and culture of the PSB. Furthermore, 100% of respondents *(“strongly agree &agree”)* indicated that the Hybrid PMO should support decision making in the PSB and foster capacity building by providing training, coaching, mentoring and quality assurance on projects. This type of PMO is similar to “strategic or enterprise” PMOs that play a role in linking the organization's projects to its strategic plans.

To further substantiate the need for an expansion of the current PMU in terms of roles and authority, it was important to garner from the respondents their experience in managing projects before the PMU was formalized. The responses advanced included the following:

- Projects were previously guided by the Projects and Quality Management Office.
- Projects were managed by trained PMPs.

- Projects were guided based on the requirements of external project sponsors.
- Team leaders (where applicable) divisional managers and project participants would provide internal assistance.
- One individual would manage the project which results in improper monitoring and low outputs.
- Projects were haphazardly managed by the Project Office based on the nature and timeline of each project.
- Each project is managed within the unit of the division that initiates it and is further monitored in silos without any coordination or guidance.
- Projects are managed by using project management platform and tools.

With the assistance of a Hybrid PMO, structured processes, tools and templates can be put in place to ensure proper planning and monitoring of projects, both internal and external.

Of note, project portfolio management provides the necessary bridge between the development of strategic plans and the execution of project plans. The Hybrid/Enterprise PMO can manage the interdependencies between and among projects and project selection and prioritization. Also, it can be a repository of business data related to high-value projects and project personnel, so that measurement of performance of people, projects, programs, and the organization as a whole can be done (Crawford, 2010).

Another aspect of the PMO questionnaire had to do with assessing organizational and project attributes in an attempt to tailor an agile approach for projects. The results from this assessment can open the discussion regarding agility in project management. Based on the Agile Practice Guide (2017) organizational and project attributes are assessed under the following categories:

- Culture – Is there a supportive environment with buy-in for the approach and trust in the team?
- Team – Is the team of a suitable size to be successful in adopting an agile approach? Do its members have the necessary experience and access to business representatives to be successful?
- Project – Are there high rates of change? Is incremental delivery possible? How critical is the project?

The results of the assessment were mapped on a radar chart in order to determine if projects should be undertaken using a predictive, hybrid or agile approach. Based on the suitability assessment chart (see Appendix 6), a hybrid approach is being proposed based on the fact that there is only partial buy-in to the agile approach and the trust factor is uncertain as there is low confidence that the team can transform vision and needs. Also, teams are not given autonomy to make decisions and there is some disparity in incremental delivery. Furthermore, criticality of product would require more time, whereas the likelihood of changes is low. However, despite the small team size, the team members were experienced and the ability to access customers for feedback was present.

Agile suitability filters are useful tools for identifying potential fits and gaps for agile approaches. However, they should not be used as definitive inclusion or exclusions but as topics for objective discussion among management. A discussion regarding an agile approach to project management will have to be had when the PSB has developed an active project management framework and methodology.

4.3. Characteristics and functions of the proposed PMO, position within the organizational structure and level of authority

In Kendall and Rollins' study (as cited in Santos do Valle & Soares, n.d) the authors highlighted an important point in relation to the proper positioning of any PMO. They suggested that a higher placement of the PMO in the organization's hierarchy will support senior executives in a systematic decision-making process. Interestingly, the results of the PMO questionnaire indicated similar perspectives relating to the position of the PMO within the organization's structure. Respondents indicated that the most suitable position for the Hybrid/Enterprise PMO should be in the Executive Director/CEO's Office or within Corporate Planning as it should support decision making in the organization.

Other suggestions made by respondents included at the managerial or senior management level, the departmental level, or alongside the Quality Management Systems office. Notably, the PSB has within its current structure a "transitioning" Project Management Unit which gives project support to the core divisions as well as other divisions. The current PMU is headed by a functional divisional manager which, to some extent, gives the unit decision making influence.

Based on the maturity assessment and the proposed PMO type, the characteristics and functions of the Hybrid PMO should include broadly the following:

- Strategic Planning
- Establishing Project Governance/Methodologies
- Project Support
- Direct Management, Monitoring and Evaluation
- Risk Management

4.3.1. Strategic Planning

The Strategic Planning role is a pivotal role of the Hybrid/Enterprise PMO in supporting decision making in the PSB. It is anticipated that a Hybrid/Enterprise PMO will ensure that projects undertaken are of national relevance to reflect the PSB's mandate and are aligned with the strategic scope and direction of the organization. Moreover, a Hybrid/Enterprise PMO if positioned on the strategic level would contribute to better decisions regarding resource allocation on projects and bring about better harmonization of projects. Furthermore, the PMO will ensure that projects undertaken are in line with the long-term objectives of the business and contribute positively to its growth. It should also facilitate efficient and effective knowledge management to improve the policies, practices, and methodologies of project and portfolio management.

The Hybrid/Enterprise PMO should be aligned with corporate strategy and the culture of the organization because it lends itself to the organization realizing its goals. The current culture statement does not explicitly reflect a project management approach. It does however speak to a mindset of continuous improvement framed by accountability, integrity, transparency and a trust-based environment all of which are essential elements in creating cultural alignment to project management in the PSB.

Furthermore, culturally aligning the project management organization and its processes with the company culture may be a means to expedite acceptance and implementation of project management and all of its benefits. These benefits include successful projects, products, employees, and customers. "Leadership helps shape culture. Culture in turn shapes leadership. They both drive performance" (Cooke, 2012 as cited in Banister-Hazama & Hazama, 2014, para. 14).

4.3.2. Establishing Governance Structure

The Hybrid/Enterprise PMO can play a pivotal role in developing a structured governance framework that is repeatable to govern any type of project or program. This process will include:

- Identifying/developing project accountability mechanisms throughout the life cycle of the project to improve decision-making.

- Defining and articulating structured roles, responsibilities and accountabilities within the project, which also facilitates decision making.

- Assessing/monitoring metrics for validating impacts to the project. This can ensure that issues identified are resolved in a timely manner.

- Establishing a Repository for project information so that stakeholder engagement is enhanced and a communication framework defined, updated and executed.

4.3.3. Project Support

With due consideration to the results of the maturity assessment, the Hybrid/Enterprise PMO can play an essential role in knowledge management by facilitating the sharing of project management best practices and the creation of standards and processes for execution of projects.

The characteristics of the Hybrid PMO for the PSB based on the description of the Departmental and The Corporate PMO include the development of templates, access to information, and the central point for lessons learned. The PMO should also provide support by adopting project management methodologies, using specific templates, forms and tools, and conformance to governance in order to avoid or stop project teams from repeating less than valuable processes. Project support should also include capacity building through training of project team

members in relevant project management tools and techniques applicable to projects, coaching, mentoring and quality assurance.

In relation to the agility aspect of the PMO questionnaire, on the matter of the value driven attribute of a PMO, 100% of respondents *(extremely important & important)* indicated that the PMO should tailor its efforts to meet specific needs requested by a given project. Additionally, 82% of respondents *(extremely important & important*) contend that the PMO should be invitation-oriented so that project teams can engage the PMO to develop approaches and adopt practices. Similarly, 82% of respondents *(extremely important & important)* advanced that the PMO should have competencies other than project management. Furthermore, 73% of respondents *(extremely important & important)* highlighted that the PMO should act as a change agent and guide.

4.3.4. Direct Management, Monitoring and Evaluation of projects

The Hybrid/Enterprise PMO can play a critical role in managing, monitoring and evaluating projects by ensuring adherence to governance structures, developing robust and logical reporting mechanisms and consistent assessment of performance metrics against project activities. Managing performance metrics and measuring productivity is absolutely necessary to complete projects on schedule and within resource allocation.

Consequently, in an effort to demonstrate value of the Hybrid/Enterprise PMO, the development of a KPI dashboard is proposed. This will provide project sponsors and stakeholders with a concise summary of the metrics to monitor progress. Collectively, KPIs are a powerful management tool to bring about organization-wide success. Keeping track of accurate metrics from varying teams can identify where more direction is needed or where incentives, plans, and other resources, such as training, should be allocated.

In addition, the development of monitoring and evaluation plans for each project will facilitate continuous feedback on the project implementation as well assist in the identification of potential successes and constraints to facilitate timely decisions. Project evaluation includes the utilization of data and information generated from the monitoring mechanism to analyze trends and potential effects on projects.

Moreover, direct monitoring of projects by the Hybrid/Enterprise PMO should provide critical information regarding any significant departure from project expectations. Furthermore, direct monitoring will allow the Hybrid/Enterprise PMO to objectively determine the relevance, effectiveness, efficiency, sustainability and impact of activities in the light of a project /program performance.

4.3.5. Risk Management

The Hybrid/Enterprise PMO can play a crucial role in identifying, categorizing and qualifying risks on projects. This will include both internal and external projects, as well as, establishing risk management protocols at the strategic level that will filter down to the tactical project levels. The development of risk management plans by the PMO will contribute to the success of projects by determining the external and internal risks and further maximizing the outcomes and reducing the chances of failure of projects. The plan will also allow project teams to become proactive in developing actions to reduce the likelihood of failure.

Characteristics of the PMO based on PMI's Framework

Based on the characteristics of the different frameworks presented in PMI Pulse of Profession (2013), the PSB's PMO would closely resemble the Enterprise/Organization-wide/Strategic PMO and the Center of Excellence/Center of Competency. This is due to the fact that the PMO will be responsible for aligning the PSB's corporate strategy to it various projects and program portfolios. Similarly, the propose PMO will also play an integral role in the development of project

methodologies, standards and tools to better assist the streamlining and monitoring of internal and external projects.

Further, based on the type of PMO applicable to the PSB's organizational structure, the appropriate domains of work for the Enterprise/Organization-wide/Strategic PMO would include:

- Project/Program Delivery Management with special emphasis on schedule/cost/scope management.
- Portfolio Management Prioritization with consideration to portfolio reporting.
- Standards, Methodologies focusing on processes methodology definition.

Additionally, the domains of work for the Center of Excellence/Center of Competency would include:

- Standards, Methodologies, Processes - Process development improvement
- Project/Program Delivery Management - Schedule/cost/scope management
- Strategic Planning - Defining business goals and alignment

The general description and the highest functions performed by PMOs coupled with the domains of work will form the basis for the mission, vision, objectives and design of the PSB's PMO. The development of the framework will take into consideration the configurations of PMOs, the landscape in which PMOs are currently operating in and the performance criteria and practices so as to revamp the provision of services and support for executing the PSB's project and program activities in line with its strategic objectives.

Location and Proposed Scope

In the current organizational structure of the PSB, the proposed location for the Hybrid/Enterprise PMO will be in the Executive Director's Office. This is due to the fact that in aligning activities to objectives, the PMO would need to support decision making in the PSB. Considering this, the strategic purpose of the proposed PMO will be embedded in its mission and vision statement:

- *Mission:* To provide quality service to the PSB Team in strategic planning, governance structure, project support and monitoring, risk management and meeting customer requirements.
- *Vision:* To assist to PSB to become a recognized leader in project management and strategic alignment in delivering business value.

Objectives of the Proposed PMO

Based on the proposed Hybrid/Enterprise PMO for the PSB, the objectives would be as follows:

- To plan and coordinate the strategic planning process in order to facilitate the development of corporate and operational plans.
- To provide support, coordination, and project planning services in order to maintain scope, change, cost, risk, and quality across all projects.
- To create and maintain a consistent project management methodology and process for all project planning in order to standardize and organize work methods across the organization.
- To manage the monitoring and evaluation process in order to determine project impacts, benefits, outcomes and reducing project risks.

Key Performance Indicators of the Proposed PMO

As a result, the key performance indicators of the PSB's PMO will be customized to provide specific data that will enable the support of strategic business priorities:

- Percentage of Completed Projects – will assess how many projects are actually completed versus how many projects was planned for. It will also consider if projects highly aligned to the corporate strategy were completed.
- Percentage of Projects Completed on Time – This is important for project dependencies and to identify issues that arise during project execution that delay projects.
- Optimized Finances - analysis of the annual ROI of all projects coordinated by the PMO and the percentage of projects under the agreed budget (compared to previous years)

- Improved Project Management – defined by the relation of projects with complete documentation compared to projects without documentation and time elapsed between the occurrence of deviations, risks, conflicts and/or corrective actions
- Increased levels of transparency on projects - Communicating the priorities of project portfolios and promoting communication and collaboration among different project teams.

Hobbs and Aubry (2007) advanced several PMO functions by priority which was used to determine the appropriate scope for the Hybrid/Enterprise PMO. This was applied by assessing the objectives of the proposed PMO based on the different priority functions. The eight (8) groups of functions based on twenty – seven (27) PMO functions by Hobbs and Aubry (2007) as cited in Deitrich et al., (2010) are:

- Monitoring and controlling project performance
- Development of project management competencies and methodologies
- Multiproject management
- Strategic management
- Organizational learning
- Execute specialized tasks for project managers
- Manage customer interfaces
- Recruit, select, evaluate, and determine salaried for project managers

Also, by assessing the formal and informal activities that the proposed PMO will be directly or indirectly engaged in with projects, appropriate functions would emerge. Therefore, the scope of the proposed Hybrid/Enterprise PMO for the PSB, framed within the priority functions would include the development of strategic priorities to guide the operations of the PSB and to deliver results compatible with meeting customer requirements. Further, the PSB will manage and control project performance through improved governance structures and project management competencies and methodologies. The scope will also take into consideration, the

establishment of knowledge repositories in promoting organizational learning to reduce the recurrences of risks.

In determining the functions of the proposed PMO, the evidenced needs in the maturity measurements were explored. The project management maturity score variability indicated strength in the areas of Integration Management, Resource Management, Procurement Management and Stakeholder Management whereas improvement opportunities exist in the areas of Scope, Schedule, Cost, Quality, Communications and Risk management. In this regard the function of monitoring and evaluating project performance is applicable coupled with risk management and knowledge transfer.

Furthermore, based on the Portfolio Management Maturity assessments, the perspectives of Project Opportunity Assessment and Initiation, Project Prioritization and Selection and Portfolio Performance Management emerged as evidenced needs. In relation to these needs, the establishment of governance structures and project management competencies and methodologies would support improvements in these areas. All these filtered into the consideration for the priority functions of the PMO so as to develop greater efficiency of the PSB's project management landscape.

In establishing or revamping a PMO, it is important that stakeholders are identified and the relationship with PMO established as well as expectations of PMO. The Hybrid/Enterprise PMO regards the following as principal stakeholders:

Chart 19

PSB's Proposed Hybrid/Enterprise PMO Stakeholders Analysis

Stakeholders	***Relationship with PMO***	***Expectations of PMO***
Executive Director	Executive Sponsor	Sponsor provides the PMO guidance on PMO business objectives and supports the PMO's efforts to achieve them
Information Divisional Manager	PMO reports to the Divisional Manager	The Divisional Manager supervises the PMO
PMO Manager	PM Partners	Work together to develop and implement project management within the division. Collect key input from divisional members to ensure effective partnership
Divisional Managers	Collaborates with PMO	As division heads, this group specifies the requirements for PMO executive reporting. They also expect the PMO to deliver updates on project status.
Procurement Manager	External Customer	Works closely with the PMO to ensure projects are in place to satisfy all project contracts as they apply
Finance Manager	External Customer	Works with PMO to ensure financial processes are in place and working properly.
Project Managers and supporting staff	PM Customer	Expect the PMO to set the PM standard; provide training and mentoring; work with the division supervisors to create an

Stakeholders	***Relationship with PMO***	***Expectations of PMO***
		environment conducive to project success
PSB staff	PM Customer	The PMO supports the various divisions in deliver successful projects and meeting customer requirements.
PMO Team	Operational Support	Support the PMO Manager in executing projects across the organization; establishing project standards and methodologies; monitor and evaluate project activities.

4.4. Implementation plan for the Hybrid/Enterprise PMO designed to establish the processes needed to improve organizational maturity.

The implementation plan will outline a suitable methodology of the processes needed to improve organizational maturity in the PSB. In addition to tools, techniques and templates to be utilized in project activities the proposed implementation plan is designed to be accomplished on a phased basis. The three (3) phases are:

- Phase 1 - Architecture and Design
- Phase 2 – Mobilization
- Phase 3 – Implementation/Management.

No schedule will be included in the implementation plan as the phasing of activities will be dependent on the pace and resources of the PSB. Notably, to the extent that the PSB currently has a new Project Management Unit, the planning and design phase would have already been completed. What will obtain within the implementation plan as it relates to design, will be an extension to the PMU's architecture.

Chart 20

Hybrid/Enterprise PMO Implementation Plan

Phases	Description	Outcome	Risk Management
1 – Hybrid/ Enterprise PMO's Architecture/ Design	**Activities 1.0** ▪ Design the PMO ▪ Define/adapt clear governance framework ▪ Design and document core processes, project management product, and artefacts ▪ Develop training requirements ▪ Assess Stakeholders	▪ Objective defined ▪ Organizational structure designed ▪ Staff requirement met ▪ Roles and functions specified ▪ Core values established ▪ Office location identified ▪ Critical success factors defined ▪ Stakeholders' input in resource requirements garnered ▪ Project Management/Monitoring &Evaluation Training or certification achieved	▪ Consult and engage key stakeholders in the development of project charter and design with sign-off from Board of Directors ▪ Training and consultation with team members and management team ▪ Identify Stakeholders interest and level of influence and get sign off ▪ Develop communication plan based on stakeholders' preferences ▪ Conduct analysis of organizational skill levels and prioritize and target needs ▪ Determine the types of strategic and business management skills needed by the PMO.

Phases	Description	Outcome	Risk Management
		▪ Coaching or mentoring skills developed ▪ Sourcing & relationship management skills developed	▪ Develop job descriptions that include the specific requirements and qualifications for technical, strategic, and business management skills.
	Activities 1.1 ▪ Facilitate Supporting Governance & Escalation Structure ▪ Conduct organization readiness ▪ Achieve Senior Management acceptance of Project Management Methodology	▪ Updated Governance & Escalation Structure - Reporting lines established at the strategic level ▪ Culture socialization and communication achieved ▪ Culture Statement refined ▪ Project management organizational maturity (strengths and gaps) identified ▪ Senior management buy-in and support gained	▪ Document acceptance of responsibility by the organization's management board for project governance. ▪ Establish feedback protocols from key stakeholders using the Delphi method or interviews. ▪ Develop communication, processes and reporting templates ▪ Document project management methodology with senior management acceptance

Phases	Description	Outcome	Risk Management
			▪ Document policies, regulations, functions, processes, procedures and responsibilities that define the establishment, management and control of projects, programs or portfolios
	Activities 1.2 ▪ Develop/adapt relevant project management methodology ▪ Establish review processes & performance metrics ▪ Develop Project Management System	▪ Project assessment, prioritization and selection determined ▪ Monitoring and evaluation methodology determined ▪ Relevant tools and techniques to be applied developed ▪ Specific process practice for knowledge areas of project management standard developed ▪ Review metrics established ▪ Repository of projects	▪ Adopt a disciplined life cycle governance that includes approval lines at which viability is reviewed and approved. ▪ Record and communicate decisions made at approval lines. ▪ Establish performance metrics for PMO ▪ Establish acceptance criteria for project performance ▪ Develop electronic repository of lesson learnt with accessibility for project partners

Phases	Description	Outcome	Risk Management
		developed	
2 - Mobilize Hybrid/ Enterprise PMO's	**Activities 2.1** ▪ Develop mobilization plan ▪ Roll—out/Mobilize Project management Methodology Framework ▪ Utilize project templates/techniques: Project Charter, Work Breakdown Structures, Project Scheduling, Project Change Log, Activity requirements, Risk Registers, Issues Log, Earned Value Management etc. ▪ Develop corrective action plan for organizational maturity	▪ Established methods/Process of mobilization including schedule and resources ▪ Projects framed within PMI's best practices and standards ▪ Existing tools utilized on projects enhanced ▪ Project team trained in the use of tools, templates and techniques established ▪ Tools and techniques in project management processes implemented ▪ Corrective action plan for improvement opportunities developed	▪ Developing coherent and supportive relationships between business strategy and projects. ▪ Deploy suitably qualified and experienced people to ensure that project management adds value. ▪ Establishing internal risk policy and structures for business units and templates ▪ Enforce lessons learned management and valuable information related to risk is collected from all projects and released to use in other projects.
3 - Implement and Manage Hybrid/	**Activities 3.1** ▪ Implement governance, methodologies and processes in all initiatives,	▪ Consistent processes, procedures, templates utilized	▪ Develop checks and balance system through a constant review of the performance and adherence to methodologies

Phases	Description	Outcome	Risk Management
Enterprise PMO's	projects and portfolios ▪ Establish PMO in a broader organization ▪ Build relevant capabilities and communities of practice in and out of PMO ▪ Determine change management processes ▪ Develop cultural change plan ▪ Initiate maturity assessment models	▪ Best practices injected in organization processes ▪ Project Steering Committees established ▪ Change Management Plan established ▪ Culture and strategy aligned ▪ PMO established as a change-agent ▪ Annual maturity assessment and PMO reviews conducted	▪ Establish procedures that allow a management board to call for an independent scrutiny of projects. ▪ Culture re-sensitization sessions for all stakeholders ▪ Analyze results from maturity assessment for corrective/preventative action ▪ Incorporate qualitative data gathering for maturity assessment.

4.5. FGP - Validation of Scope

The Validate Scope process was performed throughout the life of this FGP project. In the Graduation Seminar, the deliverables produced were reviewed and inspected by the Course facilitator for correctness and completeness. After which formal acceptance on the completed project deliverables was granted by the assignment of a passing grade and the student proceeding to the next stage of Tutorship.

Throughout the tutorship phase, deliverables were assessed by the Tutor to determine if the student's FGP met the acceptance criteria and acceptance was formally provided in the form of the Tutor´s FGP Approval Report to Commence Readership Stage. Furthermore, the Philologist report provided added validation of the quality of the FGP deliverables submitted.

Following this, is the Readership Stage where validation of the completed project deliverables was given through the FGP Reader Report along with change requests. Upon submission of the final version of the FGP, formal acceptance will be granted by the Tribunal with a passing grade and the Merit Criteria on the FGP Reader Report indicating 'Approved'.

5. CONCLUSIONS

A maturity assessment for the PSB was conducted using two (2) assessments tools modeled after PM Solutions; a Project Management Maturity Model and the Portfolio Maturity Model along with a PMO questionnaire that was developed by the author. The aim of the maturity assessment was to evaluate the maturity of the PSB in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement. Based on results obtained from the maturity assessment, it was concluded that:

1. The project management organizational maturity of the PSB is at a Level 1 maturity (scale of Level 1-5) which corresponds to the Initial Process level. The PSB demonstrated strength in the areas of Integration Management, Resource Management, Procurement Management and Stakeholder Management whereas improvement opportunities emerged in the areas of Scope, Schedule, Cost, Quality, Communications and Risk management.

   Further, based on the Portfolio Management Maturity assessments, the results revealed a Level 1 maturity which corresponds to Initial Processes. This revealed improvement opportunities for the Project Opportunity Assessment and Initiation, Project Prioritization and Selection and Portfolio Performance Management perspectives.

2. In determining the PMO suitability for the PSB the results revealed that a Hybrid/Enterprise PMO would best be suited for the PSB. This would be a combination of a Departmental and a Corporate PMO with interlocking roles of supporting, controlling and directing that would significantly contribute to the streamlining and monitoring of both internal and external project performance.

3. In determining the characteristics and functions of the proposed PMO, position and level of authority, the assessment revealed that the most suitable position for the Hybrid/Enterprise PMO should be at the strategic level (Executive Director's Office) as it should support decision making in the organization. Furthermore, the characteristics and functions should broadly include the following; Strategic Planning, Establishing Project Governance/Methodologies, Project Support and Direct Management, Monitoring and Evaluation and Risk Management.

4. In order to establish the processes needed to improve organizational maturity at the PSB, an implementation plan should be done on a phased basis so as to carefully and strategically introduce stakeholders to project management processes and methodologies. This will require effective consultation sessions with stakeholders to introduce the components of the plan, ascertain feedback, and garner support. Their input will also serve to inform the areas where concerted efforts would be required.

5. Finally, the significance of this research as demonstrated was to ascertain the suitability of a PMO for the PSB. All indications point to the need for a PMO to facilitate the effective planning and execution of impactful projects of national significance. Establishing a Hybrid/Enterprise PMO will introduce a more structured and result-oriented project management framework to the PSB.

6. RECOMMENDATIONS

Based on the research and assessment conducted on the status of the PSB's organizational maturity level in project management and the potential for improvements and development, the following recommendations are advanced:

1. Firstly, a repeat of the maturity assessment should be conducted using another assessment model along with thorough documentation and artifacts review for both project and portfolio management through the PMO. Thereafter, this assessment should be carried out bi-annually.

2. Secondly, the PMO with support from Senior Management should consider re-shaping of the organizational culture to include project focus by defining a Project Management Culture. Furthermore, the PSB should initiate a cultural change by communicating the vision, mission and values of the PMO to internal stakeholders and by performing an assessment of work processes against best practices.

3. Thirdly, consideration should be given to the PMO's location on the strategic level or strategic reporting lines and a greater level of autonomy. This process should be executed by senior management as they have the authority and leverage to make the transition possible.

4. In addition, a review board within the PSB's management structure should be established to assess the existing functions of the PMO and determine its adequacy or need for expansion. These will be carried out in an effort to better streamline the roles and responsibilities of the PMO.

5. Additionally, Senior Management should acquire appropriate Project Management software to assist with the execution of the PMO's roles and functions in supporting all aspects of projects from initiating through closing.

6. Finally, a phased, systematic implementation plan of the PMO should be introduced to relevant stakeholders by the PMO team through various consultations, and sensitization sessions. This would facilitate consensus building and agreement on the integration of project management methodologies. This plan will be developed and utilized by the PMO.

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8. APPENDICES

Appendix 1: FGP Charter

<table>
<tr><th colspan="2">PROJECT CHARTER
This serves to formalize the commencement of the Final Graduation Project and confers the Project Manager with the authority to assign company resources to the project activities. Benefits: it provides a clear start and well defined project boundaries</th></tr>
<tr><th>Date</th><th>Project Name:</th></tr>
<tr><td>26 October 2020</td><td>Project Management Office (PMO) Proposal for the Public Sector Body</td></tr>
<tr><th>Knowledge Areas / Processes</th><th>Application Area (Sector / Activity)</th></tr>
<tr><td>Knowledge areas:
Project Integration Management
Project Scope Management
Project Schedule Management
Project Cost Management
Project Quality Management
Project Resource Management
Project Communication Management
Project Risk Management
Project Procurement Management
Project Stakeholder Management

Process groups:
Initiation
Planning
Execution
Monitoring & Control
Closing</td><td>Science and Technology, Scientific Research, Consultancy</td></tr>
<tr><th>Start date</th><th>Finish date</th></tr>
<tr><td>26 October 2020</td><td>23 July 2021</td></tr>
<tr><th colspan="2">Project Objectives (general and specific)</th></tr>
<tr><td colspan="2">General objective: To develop a Project Management Office Proposal for the Public Sector Body to improve organizational maturity in project management in order to effectively plan and execute impactful projects.

Specific objectives:
1. To evaluate the maturity of the Public Sector Body in order to determine the organizational project management needs, project strengths and opportunities for growth and improvement.
2. To assess the different Project Management Office structures in order to determine the one best suited for the Public Sector Body.
3. To establish the characteristics and functions of the proposed PMO, position within the organizational structure and level of authority.
4. To develop an implementation plan for the PMO in order to establish the processes needed to improve organizational maturity.</td></tr>
<tr><th colspan="2">Project purpose or justification (merit and expected results)</th></tr>
<tr><td colspan="2">The PMO Proposal was chosen as the topic for the FGP as it is valuable to explore and assess an organization's maturity relating to the management of projects. The Public Sector Body, as a government agency has the responsibility to foster and coordinate scientific research and the promotion of its application. In this regard, the organization is actively involved in the development of projects to impact national development. A project managment framework exists within the organization however, there is room for improvement in its effectiveness. As such, the proposal for a Project Management Office will solidify the critical purpose of a PMO, it importance in the hierarchy of the organization and the need for sytematic and organized processes supported by PMI standards to develop impactful and value added projects for nation building.</td></tr>
</table>

Description of Product or Service to be generated by the Project – Project final deliverables

1. A Project Management Office proposal to determine organizational maturity and establish the purpose of a PMO. This will include an organizational design that will utilize the PMO strategically in the overall planning and execution of projects.
2. A PMO Implementation plan that wil serve as a guide in the establishment of a Project Management Office at the Public Sector Body.

Assumptions

1. The necessary pre-approval or authorization to understudy the organization is established.
2. The time alloted by UCI to complete the FGP is adequate.
3. Feedback and review of FGP deliverables will be made available based on schedule so as to avoid delays.
4. The necessary information and expertise needed for the FGP will be made available by the sponsoring organization.
5. COVID-19 will not adversely affect the relevant stakeholders.
6. The health of the student is not compromised throughout the development process.
7. Knowledge acquired from the Master's in Project Management courses is sufficient to complete the FGP.

Constraints

Scope: The scope of the FGP will be contracted to primarily fulfill the requirements of the Graduation Seminar.
Time: Limited time to conduct research and to properly define the FGP to be developed.
Quality: The quality of the FGP can be compromised due to the tight schedule of the FGP which is three (3) months.
Resources: The complexities of the requirement of the FGP and the expected output can be achieved by one (1) person.

Preliminary risks

1. If the sponsor does not grant or give access to all the information required, the FGP may be delayed.
2. If the requisite information is not available, the FGP development process might be delayed which may negatively impact time and quality.
3. If the FGP schedule is not adhered to by both students and tutors, the development process will be hindered and this can lead to negative impact on scope, time and quality.
4. If the facilitator's feedback is not given in a timely manner, this will cause a delay in adjustments and the overall process.

Budget

The budgetary estimates comprise of the financial resources necessitated by the development of the Final Graduation Project. These include the time alloted in researching and gathering relevant information,cost for printing documents and shipping cost of FGP to the University.

Milestones and dates

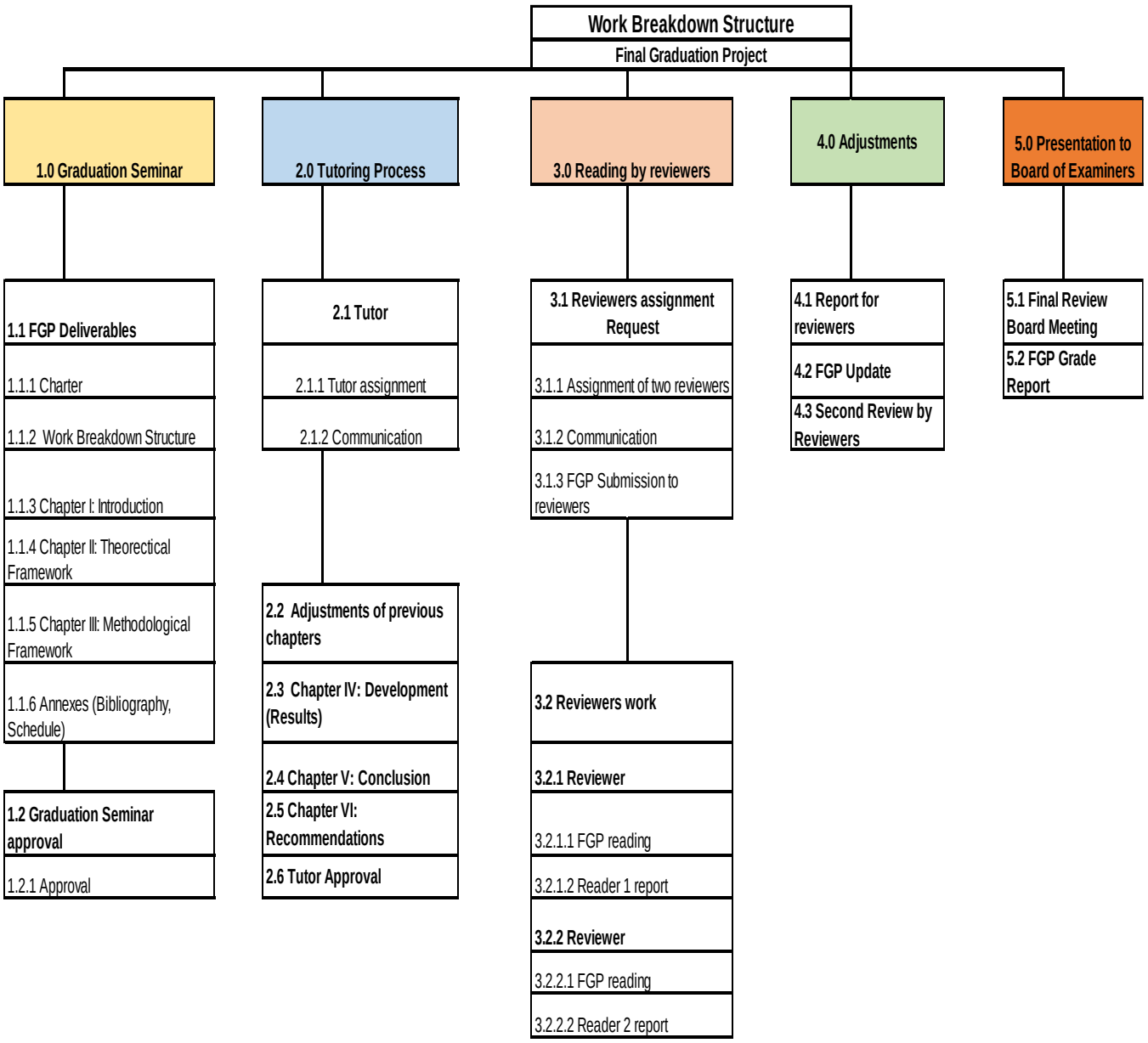
Milestone	Start date	End date
FGP Deliverables	October 26,2020	November 26,2020
Graduation Seminar Approval	November 26, 2020	November 27,2020
Tutor assignment	January 25,2021	January 25,2021
Adjustments of Chapters	February 3, 2021	May 7, 2021
Tutor approval	May 19,2021	May 19, 2021
Reviewers' report	May 19, 2021	June 3, 2021
Adjustments after reviewer's reports	June 16 ,2021	July 14,2021
Presentation to the Board of Examiners	July 19,2021	July 20,2021
Final Review by Board	July 21,2021	July 23,2021

Relevant historical information	
The Final Graduation Project is being developed in partial fulfilment of the requirements for Masters in Project Management (MPM) Degree. The FGP forms a critical component as students are required to apply project management knowledge and standards by conducting a formal analysis based on the topic chosen. In context, with the establishment of a new Project Management Unit at the Public Sector Body, this FGP will provide the opportunity to assess the PMU's needs in an organizational context, determine ways to leverage its current strengths and maximize the growth opportunities that will emerge from the assessment.	
Stakeholders	
Direct stakeholders: University of International Cooperation (UCI) Project Manager - student is integral in the development of the FGP Facilitator: Carlos Brenes Mena will provide the requisite guidance to the student to effectively develop the FGP. Tutor: The tutor will guide the reviewing process to ensure adequate adjustments by students. Management of Public Sector Body: They serve as the primary source of information and expertise in developing the FGP. The organization will also benefit from the final proposal. **Indirect stakeholders:** Reviewers - their input is vital is improving the FGP Academic Assistant - role is essential in providing guidance and assistance from UCI. Board of Examiners - role is critical is approving the FGP	
Project Manager: Kandee Grant	**Signature: K.Grant**
Authorized by: Kandee Grant	**Signature: K. Grant**

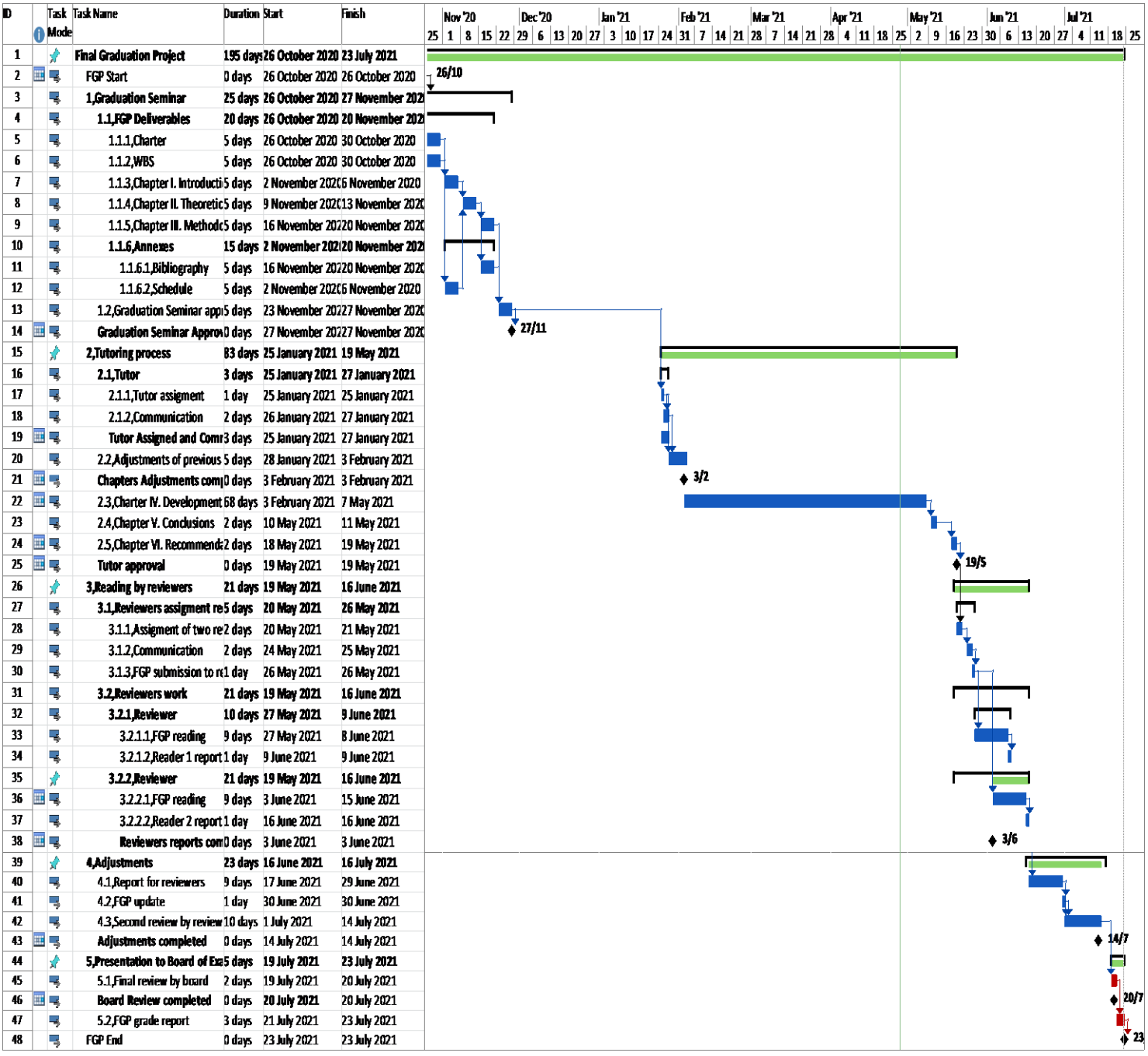
Appendix 2: FGP WBS

Work Breakdown Structure		
Final Graduation Project		
Level 1	**Level 2**	**Level 3**
1.0 Graduation Seminar	**1.1 FGP Deliverables**	1.1.1 Charter
		1.1.2 Work Breakdown Structure
		1.1.3 Chapter I: Introduction
		1.1.4 Chapter II: Theoretical Framework
		1.1.5 Chapter III: Methodological Framework
		1.1.6 Annexes (Bibliography, Schedule)
	1.2 Graduation Seminar approval	1.2.1 Approval
2.0 Tutoring Process	**2.1 Tutor**	2.1.1 Tutor assignment
		2.1.2 Communication
	2.2 Adjustments of previous chapters	
	2.3 Chapter IV: Development (Results)	
	2.4 Chapter V: Conclusion	
	2.5 Chapter VI: Recommendations	
	2.6 Tutor Approval	
3.0 Reading by reviewers	**3.1 Reviewers assignment Request**	3.1.1 Assignment of two reviewers
		3.1.2 Communication
		3.1.3 FGP Submission to reviewers
	3.2 Reviewers work	**3.2.1 Reviewer**
		3.2.1.1 FGP reading
		3.2.1.2 Reader 1 report
		3.2.2 Reviewer
		3.2.2.1 FGP reading
		3.2.2.2 Reader 2 report
4.0 Adjustments	**4.1 Report for reviewers**	
	4.2 FGP Update	
	4.3 Second Review by Reviewers	
5.0 Presentation to Board of Examiners	**5.1 Final Review Board Meeting**	
	5.2 FGP Grade Report	

Appendix 2a: FGP WBS Diagram

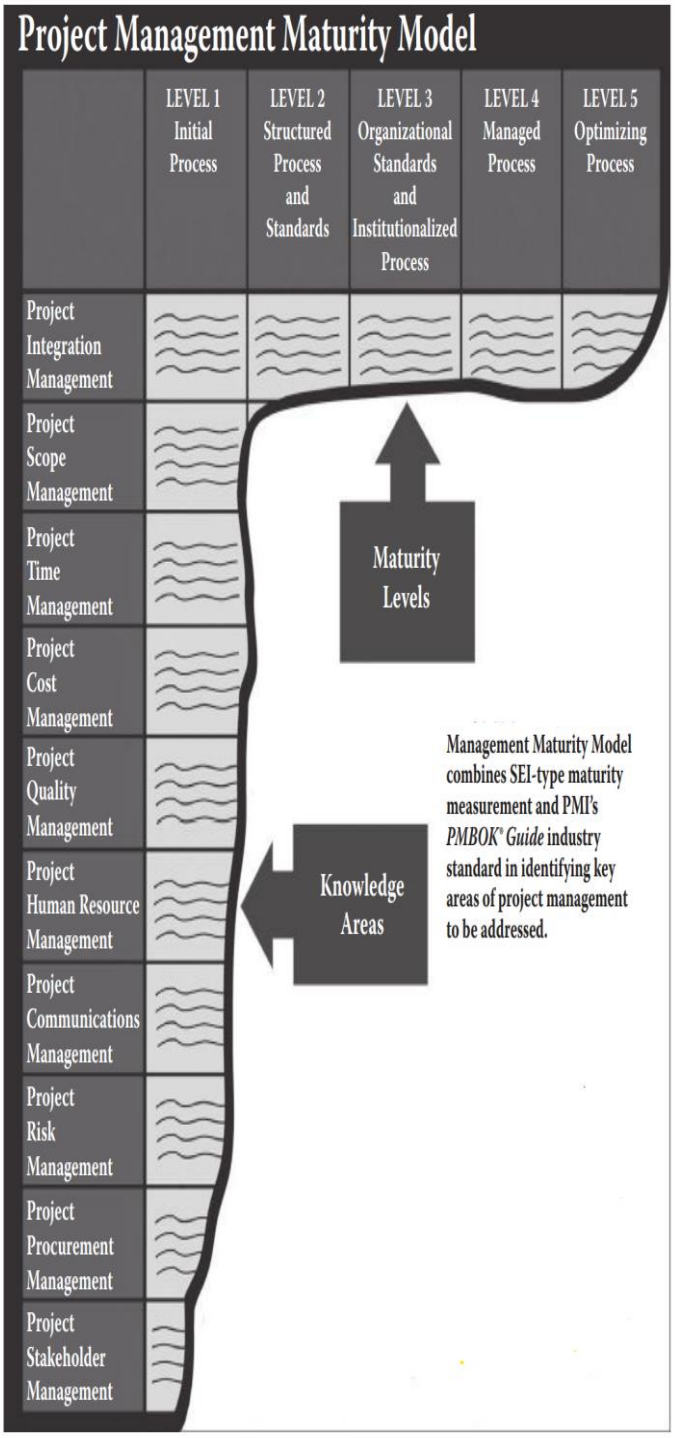


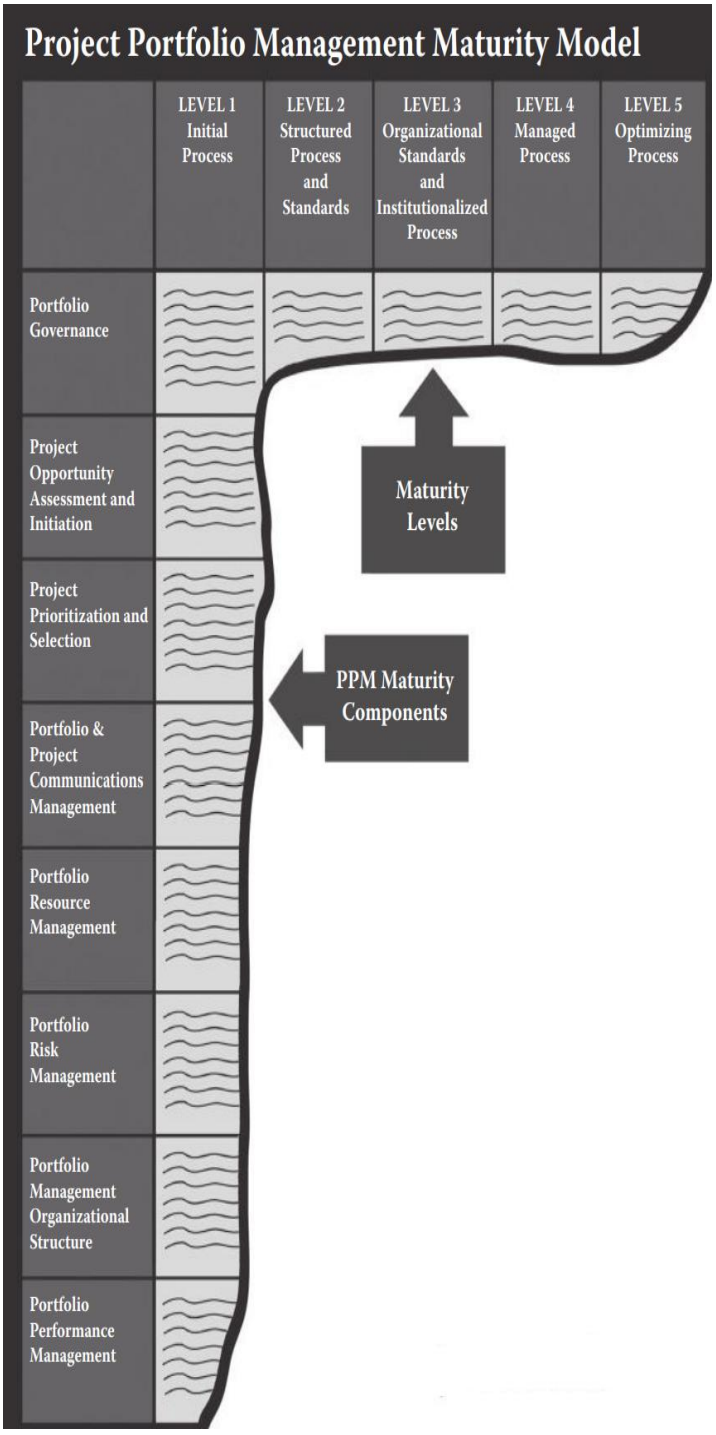
Appendix 3: FGP Schedule



ID	Task Mode	Task Name	Duration	Start	Finish
1		**Final Graduation Project**	**195 days**	**26 October 2020**	**23 July 2021**
2		**FGP Start**	**0 days**	**26 October 2020**	**26 October 2020**
3		**1,Graduation Seminar**	**25 days**	**26 October 2020**	**27 November 202**
4		**1.1,FGP Deliverables**	**20 days**	**26 October 2020**	**20 November 202**
5		1.1.1,Charter	5 days	26 October 2020	30 October 2020
6		1.1.2,WBS	5 days	26 October 2020	30 October 2020
7		1.1.3,Chapter I. Introducti	5 days	2 November 2020	6 November 2020
8		1.1.4,Chapter II. Theoretic	5 days	9 November 2020	13 November 2020
9		1.1.5,Chapter III. Methodc	5 days	16 November 2020	20 November 2020
10		**1.1.6,Annexes**	**15 days**	**2 November 2020**	**20 November 202**
11		1.1.6.1,Bibliography	5 days	16 November 2020	20 November 2020
12		1.1.6.2,Schedule	5 days	2 November 2020	6 November 2020
13		1.2,Graduation Seminar appi	5 days	23 November 2020	27 November 2020
14		**Graduation Seminar Approv**	**0 days**	**27 November 2020**	**27 November 2020**
15		**2,Tutoring process**	**83 days**	**25 January 2021**	**19 May 2021**
16		**2.1,Tutor**	**3 days**	**25 January 2021**	**27 January 2021**
17		2.1.1,Tutor assigment	1 day	25 January 2021	25 January 2021
18		2.1.2,Communication	2 days	26 January 2021	27 January 2021
19		**Tutor Assigned and Comr**	**3 days**	**25 January 2021**	**27 January 2021**
20		2.2,Adjustments of previous	5 days	28 January 2021	3 February 2021
21		**Chapters Adjustments com**	**0 days**	**3 February 2021**	**3 February 2021**
22		2.3,Charter IV. Development	68 days	3 February 2021	7 May 2021
23		2.4,Chapter V. Conclusions	2 days	10 May 2021	11 May 2021
24		2.5,Chapter VI. Recommend	2 days	18 May 2021	19 May 2021
25		**Tutor approval**	**0 days**	**19 May 2021**	**19 May 2021**
26		**3,Reading by reviewers**	**21 days**	**19 May 2021**	**16 June 2021**
27		**3.1,Reviewers assigment re**	**5 days**	**20 May 2021**	**26 May 2021**
28		3.1.1,Assigment of two re	2 days	20 May 2021	21 May 2021
29		3.1.2,Communication	2 days	24 May 2021	25 May 2021
30		3.1.3,FGP submission to re	1 day	26 May 2021	26 May 2021
31		**3.2,Reviewers work**	**21 days**	**19 May 2021**	**16 June 2021**
32		**3.2.1,Reviewer**	**10 days**	**27 May 2021**	**9 June 2021**
33		3.2.1.1,FGP reading	9 days	27 May 2021	8 June 2021
34		3.2.1.2,Reader 1 report	1 day	9 June 2021	9 June 2021
35		**3.2.2,Reviewer**	**21 days**	**19 May 2021**	**16 June 2021**
36		3.2.2.1,FGP reading	9 days	3 June 2021	15 June 2021
37		3.2.2.2,Reader 2 report	1 day	16 June 2021	16 June 2021
38		**Reviewers reports com**	**0 days**	**3 June 2021**	**3 June 2021**
39		**4,Adjustments**	**23 days**	**16 June 2021**	**16 July 2021**
40		4.1,Report for reviewers	9 days	17 June 2021	29 June 2021
41		4.2,FGP update	1 day	30 June 2021	30 June 2021
42		4.3,Second review by review	10 days	1 July 2021	14 July 2021
43		**Adjustments completed**	**0 days**	**14 July 2021**	**14 July 2021**
44		**5,Presentation to Board of Ex**	**5 days**	**19 July 2021**	**23 July 2021**
45		5.1,Final review by board	2 days	19 July 2021	20 July 2021
46		**Board Review completed**	**0 days**	**20 July 2021**	**20 July 2021**
47		5.2,FGP grade report	3 days	21 July 2021	23 July 2021
48		FGP End	0 days	23 July 2021	23 July 2021

Appendix 4: Project Management and Portfolio Management Maturity Models





Extracted from: (Crawford, Project & Portfolio Management Maturity Model, 2015)
Models were developed by PM Solutions

Appendix 5: Project Management Office Questionnaire Part 1

Project Management Office

This survey is being conducted to ascertain the relevant roles and responsibilities of a Project Management Office (PMO) or Project Management Unit (PMU) within the Public Sector Body. It will also seek to identify the most suitable position within the organization's structure and its level of autonomy.
Privacy Statement: All information will be used for research purposes and to inform the approach of the Project Management Unit. Thank you for your time and cooperation.

*Required

1. Question 1. Do you agree that there is a need for a Project Management Office (PMO) or Project Management Unit (PMU) in your organization? *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

2. Question 2. Do you agree that the PMO will promote better management of projects? *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

3. Question 3. Do you believe having a PMO or PMU will help to increase the level of productivity of Externally Funded Projects? *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

4. Question 4. Do you believe having a PMO or PMU will help to increase the level of productivity of internal projects or project activities? *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

5. Question 5a. Should the PMO or PMU be aligned with corporate strategy and the culture of the organization? *

Mark only one oval.

- Yes
- No
- Not sure

6. Question 5b. Give reasons for your response to Question 5a above: *

7. Question 6a. Should the PMO or PMU support decision-making in the organization. *

Mark only one oval.

- Yes
- No
- Not Sure

8. Question 6b. Give reasons for your answer to Question 6a. *

9. Question 7. The PMO or PMU should act as an internal consultant to projects "by supplying templates, best practices, training, access to information, and lessons learned." *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

10. Question 8. The PMO/PMU should provide support by "adopting project management frameworks or methodologies, using specific templates, forms and tools, or conformance to governance." *

Mark only one oval.

1 2 3 4 5

Strongly Disagree — Strongly Agree

11. Question 9. Should the PMO or PMU unit be the central point for lessons learned, templates and best practices in order to avoid or stop project teams from repeating processes? *

Mark only one oval.

- Yes
- No
- Not sure

12. Question 10. The PMO or PMU can play a significant role by working with stakeholders in order to maximize benefits from projects? *

Mark only one oval.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

13. Question 11. Do you believe the PMO/PMU should have a high degree of control of projects/project activities. *

Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

14. Question 12. Based on your knowledge of project management practices and your experience on projects, what type of PMO would be best suited for the organization? *

Mark only one oval.

- Individual PMO - provide functional support (e.g., infrastructure, document management, training, etc.) to a single complex project or program. They set basic standards and oversee planning and control activities for a single project.
- Departmental PMOs - provide support for multiple projects at a department or business unit level. Their primary challenge is to integrate projects of different sizes within a division (e.g., IT, Finance) from small, short term initiatives to multi-year programs with multiple resources and complex integration of technologies.
- Corporate PMOs - create standards, processes, and methodologies to improve project performance within an organization. They are typically responsible for allocating resources to different projects across the organization.
- Hybrid PMO - combination of Departmental and Corporate PMOs

15. Question 13. Do you agree that the PMO or PMU can foster capacity building by providing training, coaching, mentoring and quality assurance on projects? *

Mark only one oval.

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

16. Question 14. Do you agree that a benefit of having a PMO or PMU is reduced bureaucracy on projects? *

Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

17. Question 15. Where do you believe the PMO/PMU should be placed on the hierarchy of the organization? *

Appendix 5a: Project Management Office Questionnaire Part 2

18. Question 16. What should be the roles and functions of the PMO/PMU? *

19. Question 17. Based on your knowledge, briefly describe how projects are managed and monitored without the support of a PMO/PMU? *

Suitability Assessment

This section will assess organizational and project attributes in an attempt to tailor an agile approach for projects.

20. Question A. Please rate the following attributes of a Project Management Office based on the scale assigned. *

Tick all that apply.

	Extremely Important	Important	Slightly Important	Not important at all	Don't know
Value-Driven (tailor its efforts to meet specific needs requested by a given project)					
Invitation oriented (project teams engages the PMO to develop approaches and adopt practices)					
The PMO should have competencies other than project management, e.g., organization design, change management etc.					
The PMO should act as a change-agent and guide.					

21. Question B. Is there top management understanding and support for using project management standards and best practices in projects? *

Mark only one oval.

- Yes
- Partial
- No
- Don't know

22. Question C. Buy-in: Is there senior sponsor understanding and support for using an agile approach for projects? *

Mark only one oval.

- 1 - Yes
- 5 - Partial
- 10 - No
- Don't know

23. Question D. Considering the sponsors and the business representatives who will be working with the team. Do these stakeholders have confidence that the team can transform their vision and needs into a successful product or service—with ongoing support and feedback going both directions? *

Mark only one oval.

- 1 - Yes
- 5 - Probably
- 10 - Unlikely
- Don't know

24. Question E. Will the team be given autonomy to make their own local decisions about how to undertake work?

Mark only one oval.

- 1 - Yes
- 5 - Probably
- 10 - Unlikely
- Don't know

25. What is the size of your core project team? *

26. Question F. Considering the experience and skill levels of the core team roles. While it is normal to have a mix of experienced and inexperienced people in roles, for agile projects to go smoothly; it is easier when each role has at least one experienced member. *

Mark only one oval.

- 1 - Yes
- 5 - Partial
- 10 - No
- Don't know

27. Question G. Will the team have daily access to at least one business/customer representative to ask questions and get feedback? *

Mark only one oval.

- 1 - Yes
- 5 - Partial
- 10 - No
- Don't know

28. Question H. What percentage of requirements are likely to change or be discovered on a monthly basis? *

Mark only one oval.

- 50%
- 25%
- 5%
- Don't know

29. Question I. To help determine likely levels of additional verification and documentation rigor that may be required, assess the criticality of the product or service being built. Using an assessment that considers loss due to possible impact of defects, determine what a failure could result in: *

Mark only one oval.

- More Time
- Use of Discretionary funds
- Use of essential funds
- Single life of product
- Many lives of product (re-work)
- Don't know

30. Question J. If a product or service can be built and evaluated in portions, will business or customer representatives be available to provide timely feedback on increments delivered? *

Mark only one oval.

- 1 - Yes
- 5 - May/Sometimes
- 10 - Unlikely
- Don't know

31. Question K. Based on your knowledge and experience dealing with projects, please rate the occurrences: *

Tick all that apply.

	1 - Never	2 - Rarely	3 - Sometimes	4 - Often	5 - Always	Don't know/Not sure
Project Success : A successful project is a project that is delivered on time, within the budget, and on brief (in scope						
Project Failure : A failed project is a project that is never completed or does not meet customer expectations.						
Challenged Project : A challenged project is a project that is completed, but is either late, over-budget, or does not meet all requirements						

32. Question L. What percentage of internal projects in the last three years would meet each criterion below *

Tick all that apply.

	1 - Below 10%	2 - 11-30%	3 - 31-60%	4 - 61-90%	5 -Over 90%	Don't know/Not sure
Project Success : A successful project is a project that is delivered on time, within the budget, and on brief (in scope						
Project Failure : A failed project is a project that is never completed or does not meet customer expectations.						
Challenged Project : A challenged project is a project that is completed, but is either late, over-budget, or does not meet all requirements						

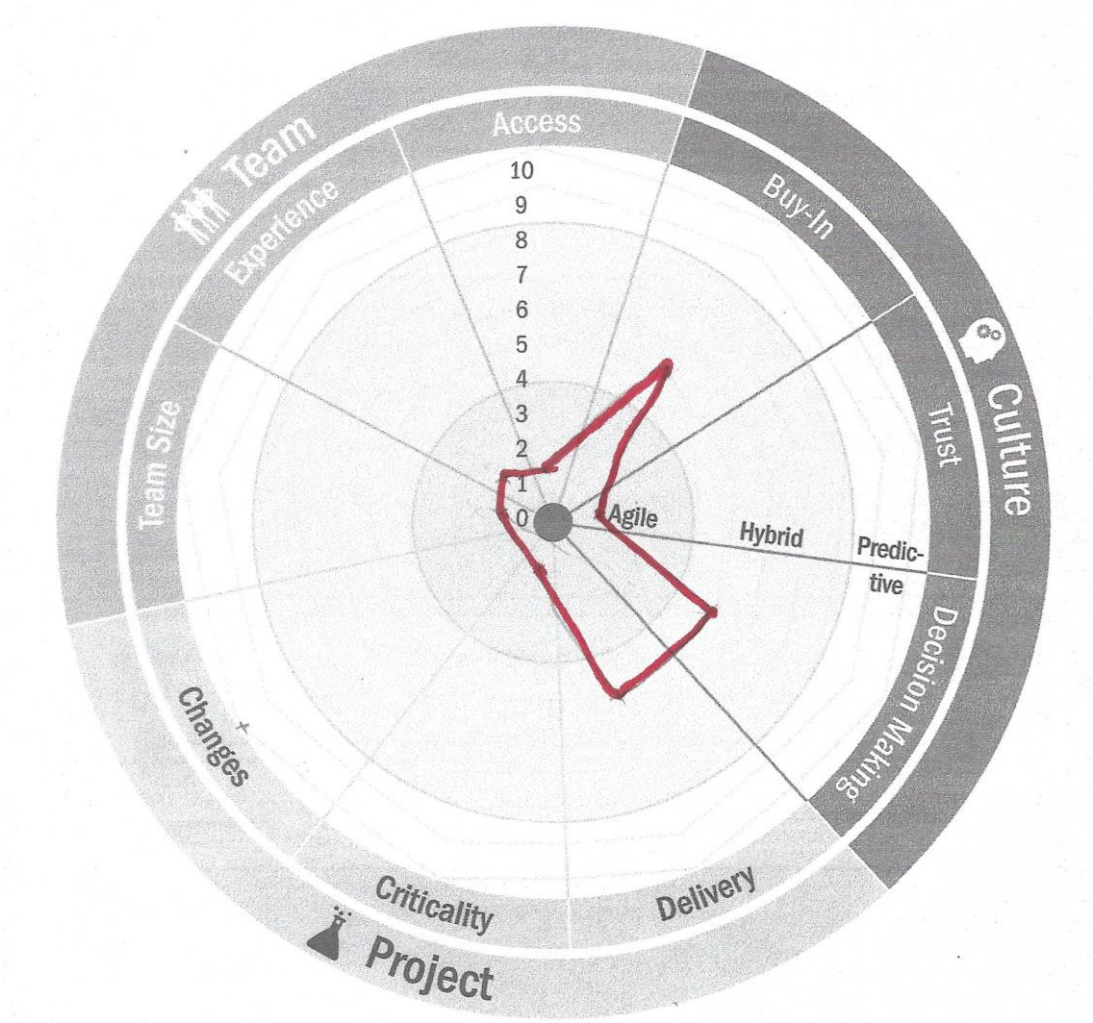
33. Question M. What percentage of external projects in the last three years would meet each criterion below *

Tick all that apply.

	1 - Below 10%	2 - 11-30%	3 - 31-60%	4 - 61-90%	5 -Over 90%	Don't know
Project Success : A successful project is a project that is delivered on time, within the budget, and on brief (in scope						
Project Failure : A failed project is a project that is never completed or does not meet customer expectations.						
Challenged Project : A challenged project is a project that is completed, but is either late, over-budget, or does not meet all requirements						

34. Question N. What structural, cultural, technological and competency capabilities could be explored to improve the current project management infrastructure?

Appendix 6: Agile Suitability Assessment Radar Chart



Appendix 7: Document Version Control

Document Version Control			
Version	**Date Approved**	**Approved by**	**Summary of Changes**
1	November 2020	Facilitator, Graduation Seminar	Graduation Seminar Document Finalized
2	February 2021	Director, MPM Program	Graduation Seminar Document updated to include a change in the specific name of the Organization under study to a general name.
3	April 2021	Tutor, Evelyn Hernandez	Changes to Project Schedule and Charter due to COVID-19 protocols and a delay in data collection.
4	May 2021	Philologist	Final Version of Graduation Project
5	June 28, 2021	Readers	Readership Report Modifications and Adjustments completed

Appendix 8: Philologist Revision Dictum

4 Farringdon Heights,

Kingston 6, Jamaica

May 26, 2021

Academic Advisor

Masters Degree in Project Management (MPM)

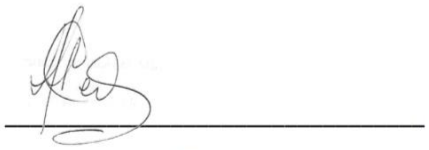
Universidad para la Cooperation Internacional (UCI)

Dear Academic Advisor:

Re: Philological Review of Final Graduation Project submitted by **KANDEE GRANT** in partial fulfilment of the requirements for the Masters in Project Management (MPM) Degree.

I hereby confirm that **Kandee Grant** has made the corrections to the Final Graduate Project document as I have advised.

In my opinion, the document should now meet the literary and linguistic standards expected of a student reading for a degree at the Masters level.



Hilory Pamela Kelly

B.A. (UWI) M.Ed. (UWI) MSc. UNYS, (England)

Appendix 9: Philologist Curriculum Vitae

HILORY PAMELA KELLY, B.A, Dip Ed. Dip HRD, MEd (UWI), MSc (UNYS)
4 Farringdon Heights, Kingston 6, Jamaica
(876) 927-4647; (876) 889-626
pkellyja@gmail.com, pam.kel34@yahoo.com

STRENGTHS

- *More than forty years' experience gained in providing quality education to students of all ages*
- *Various skills gained through participation in, and consultation on, a variety of educational project*
- *Practical experience in the use of technology in the delivery of education.*
- *Excellent human relations and communication skills*
- *Addicted to continuing education; views teaching as a vocation*
- *Self-motivated with a strong sense of commitment*

EMPLOYMENT HISTORY

2013- 2021	**University of Technology, Jamaica** **Programme Director, UTech Academy** ***Lecturer (Advanced Academic Writing for Post Graduate Students)*** ***University Public Orator***
1995- 2013	***Senior Lecturer*** in Communication Skills ***Director***, Self-Access Communication Learning Centre ***Member:*** University's Quality Assurance and Control Sub-committee; Student Leadership Committee; Curriculum Committee (FELS) ***Representative*** on Faculty Boards ***(***Education and Liberal Studies. Engineering and Computing)
1995 -present	**University of the West Indies, Mona** **Adjunct Lecturer in Academic Writing for Graduate Students** **Examiner: IELTS (British Council & Oxford University)**

EDUCATION

2004	**University of Surrey, Roehampton, United Kingdom** MSc in English Language Teaching Management Research Project: The Development of a Proficiency Test for Students entering the University of Technology, Jamaica
2000	**University of the West Indies, Mona** M.Ed. by thesis
1982	**Institute of Management and Production, Jamaica** Diploma: Human Resource Development
	University of the West Indies, Mona
1973	Diploma in Education, (Dip Ed.) specializing in Language Arts
1968	Bachelor of Arts (B.A.) in English and Geography

ASSOCIATED TRAINING in

Leadership Development, Writing for Distance Education, Testing and Measurement, Interactive Learning Technologies, Teaching and Learning at a Distance, Course Design

CONSULTANCIES

University of the West Indies, Mona

External examiner, Joint Board of Teacher Education (English at Secondary Level)
Course Developer: Online module: The Content of Tertiary Level English Language (UWI Open University)

University of the Commonwealth Caribbean

English Language Course developer:

The Mico University, Ja

External Examiner (English language and Literature)

MOST NOTABLE ACHIEVEMENTS

(A) *Proposed and coordinated the activities leading to the establishment of the Self-Access Communication Learning Centre* (SACLC) at the University of Technology, Ja. Facilitated the creation of self-study instructional material and oversaw the operation of that multi-media center for 11 years

(B) Instituted and managed the English Language Proficiency Test (University of Technology, Ja)

(C) *Consulted on ROSE* MOEC/World Bank Project to develop and write a Language Arts curriculum in consultation with the Ministry of Education

RECOGNITION AND AWARDS

- Prime Minister's Award for Contribution to Education,2013
- Annual H. Pamela Kelly Distinguished Lecture Series established in recognition of Service to the Development of English Language and Communication Skills at the University of Technology, Ja.
- Distinguished Service Award for Faculty Development (Faculty of Education & Liberal Studies)
- Recognition Award for Excellent Service (Faculty of Education and Liberal Studies)
- Long Service Award (The University of Technology, Jamaica)

Revised: April 2021