EXPLORATION OF INTERCONNECTING PRACTICES IN ORGANIZATIONAL PROJECT MANAGEMENT (OPM) CONTINUUM

MURAD KARIMI

A thesis submitted in partial fulfilment of the requirements of Edinburgh Napier University, for the award of Doctor of Business Administration

September 2019

DECLARATION

I declare that this Doctorate of Business Administration (DBA) thesis is my own work and that all critical and other sources, literary and electronic, have been properly acknowledged as and when they occur in the body of the text.

MURAD KARIMI

30 September 2019

ABSTRACT

This study explores aspects of the Organizational Project Management (OPM) Continuum consisting of Project Management, Program Management and Portfolio Management domains of practice as well as the Project Management Office (PMO). The purpose of this research is to understand the OPM Continuum's domains of practice and its interconnecting relationships; and to explore where in the process the interconnection is lost or the relationship is broken, subsequently closing the research loop by identifying possible improvement and recommendation approaches.

This research adopts a practice-based philosophy with an interpretivist stance broadly based in alignment with project-as-practice approach; and it uses an exploratory conversational semi-structured interview technique. The breath of this research covers both at a global level as well as diversified industries. The major contribution to knowledge and practice is the recommendations that will be able to improve practice and enable professional and organizational development and growth. It is contended that the benefits reaped from this research will be able to empower the PMO community of practitioners with the knowledge to improve the OPM Continuum on a global scale.

ACKNOWLEDGEMENT

The life learning journey to the Edinburgh Napier University's Doctorate of Business Administration (DBA) program would not have been possible without the support of all those mentioned herein my acknowledgment.

First and foremost, I want to thank Almighty Allah for His infinite blessings for granting me the opportunity to fulfill my dream, the knowledge to complete this program and connecting me with people whose contribution and support are paramount to the completion of this research. I want to thank the Lord for blessing me and my family with the patience to balance my time between my studies, family, and work.

My journey wouldn't have started without the heartfelt support and guidance that I received from my late mentor Dr. Ginger Levin. She constantly motivated me and saw the potential in me, which I always doubted. My sincere thanks go to her. I want to thank Dr. Teo Kim Heng, supervisor of my Master degree program, for his academic reference letter of support. And I want to thank Jim Crowley for his professional reference letter of support.

I would like to express my thanks to my supervisory team of Dr. Janice McMillan, Dr. Holly Patrick and Professor Alison McCleery for their constant support and assistance, above of all, their patience and dedication throughout my DBA journey. Their invaluable input, encouragement, and

advice have been tremendously beneficial throughout the tenure of this program.

I would like to specifically express my utmost thanks to the Director of Studies Dr. Janice McMillan for the supervision, advice, and guidance from the incubation to the completion of this DBA program as well as giving me extraordinary experiences throughout the tenure of this program. Her support is indispensable and paramount to the successful completion of this thesis as without her support this monumental achievement would not have been possible.

My heartfelt appreciation goes to Professor Alison McCleery. She was ready to take in as a role of a Supervisor upon request. She was always available to discuss and provide her invaluable guidance. We connected very well during our one-to-one call and it amazed me as to how much she was able to read my mind. The foundation of my research's practice-based philosophical approach came from a conversation with Dr. Holly Patrick. My sincere appreciation goes to her for guiding me through her conversation.

For the DBA support and administration team, I would like to express my gratitude to Jacqui Frame and Jim Doyle on their timely DBA updates provided to the DBA students. For the Southpoint Education International support and administration team, I would like to thank Andrew Cawley and Maria Nieto for their running an outstanding DBA support program in the United States.

I would like to thank Edinburgh Napier University's staff who have been working hard behind the curtain. Although I never had an opportunity to meet any in person, however, I do feel that my sincere thanks to them for their effort is deemed necessary.

Finally, I would like to thank my parents for their encouragement, my wife, Seema Karimi, whose invaluable support and commitment have been a true blessing. My two children, my daughter, Sofia Karimi, and my son, Mueez Karimi, for their endurance in keeping up with me during these tremendous busy moments in my life. Last but not least, I want to thank my sister, Munira Karimi, for her cross-border support managing my home in Canada while I'm working and studying in the United States. I am truly blessed.

LIST OF ABBREVIATIONS AND ACRONYMS

AC	Active Condition
APM	Association of Project Management
AT&T	American Telephone & Telegraph
BS	British Standard
CEB	Corporate Executive Board
CIO	Chief Information Officer
CMMI	Capability Maturity Model Integration
DOD	Department of Defense
ESD	Electrostatic Discharge
IPMA	International Project Management Association
ISO	International Organization for Standardization
KPI	Key Performance Indicators
KPMMM	Kerzner Project Management Maturity Model
MOP	Management of Portfolios
MSP	Managing Successful Programmes
NPS	Net Promoter Score
OGC	Office of the Government of Commerce
OPM	Organizational Project Management
OPM3	Organizational Project Management Maturity Model
P2M	Project and Program Management
P3O	Project, Program and Portfolio Offices
P3M3	Portfolio, Programme and Project Management Maturity Model
PC	Proposed Condition
PERT	Programme Evaluation and Review Techniques
PfMO	Portfolio Management Office
PG	Process Group
PgMO	Program Management Office
PMAJ	Project Management Association of Japan
PMMM	Project Management Maturity Model
PMO	Project Management Office
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
PMLC	Project Management Life Cycle
PPM	Project Portfolio Management
PPMS	Program and Portfolio Management Standard
PRINCE2	Projects in Controlled Environment

ProgMAT	Program Management Architecture Team
PROMPT	Project Organization, Management and Planning Techniques
PROMPT II	Project Organization, Management and Planning Techniques II
PWC	Price Waterhouse Coopers
SEI	Software Engineering Institute
SME	Subject Matter Expert
SPgM	Standard for Program Management
SPfM	Standard for Portfolio Management
UK	United Kingdom
US	United States

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

1.1 Purpose

The purpose of this research is to explore the interconnecting practices within the Organizational Project Management (OPM) Continuum. This chapter will introduce the overall theme of the research by, first, introducing the general overview of project management and following this by, second, providing the current project management settings and challenges, and a rationale for the research. This will subsequently lead to the extrapolation of the main research aims and objectives, and will then conclude by outlining the overall structure of this research.

1.2 Context and Justification

More and that more organizations are managing their business by projects. As a result, an enormous amount of project information and its knowledge management are mandating companies to regard this information favorably as intellectual property through a Project Management Office (PMO), which acts as a guardian of its intellectual property (Kerzner, 2009). Thus, according to the PMO Benchmark Report 2016, the PMO has become a common establishment in

today's corporate culture. It emerges that 66% of large organizations have active operational PMOs (PMO Flashmob, 2016). This positions the PMO as a business integrator serving as a business unit encompassing the *people* (project stakeholders), the *process* (methodologies and practices) and the *tools* (technologies) (Hill, 2014).

Before embarking upon further contextual exploration, it is critical to address the definition of a PMO. The Project Management Institute (PMI, 2017a) defines a PMO as an organizational structure that standardizes project-related governance processes and facilitates a sharing of resources, methodologies, tools, and techniques. Levine (2005) further adds that these functions are centralized for standardization and consistency. Unlike any other organizational department, the PMO acts as an overarching department that facilitates a *PMO Continuum* (people, process and tools) connecting its organizational divisions in a centralized manner. Therefore, a PMO should be viewed as a dynamic entity created to solve specific issues within a dynamic organization (Aubry et al., 2010).

According to the State of Project Management Annual Survey 2016, the PMO's prevalence and influence in an organization have increased with over 70% of organizations now having a single or multiple PMOs (Wellington Project Management, 2016). Price Waterhouse Coopers (PWC) in its "Portfolio and Programme (PPM) Service Catalog" further mentions that high-performing project organizations deploy more key PMO capabilities than comparable low-performing organizations (PWC, 2014). These reports demonstrate a promising delivery, which should accelerate project competency for organizations in their overall drive

towards project management excellence. However, market findings present a series of contrasting reports. In this series of reports from the year 2013 to 2018, reveals that project management continuums of practice have been experiencing downward spirals in terms of yearly poor performances.

- In the year 2013, a KPMG Project Management Survey Report indicated that the rate of project failure continues to remain high with 67% of projects that are not delivered on budget, and 71% of projects that are not delivered on time (KPMG, 2013).
- In the year 2014, a Chief Information Officer (CIO) article reported that project management techniques have not been innovatively adopted by PMO to prevent disastrous project failures (Kogekar, 2014).
- In the year 2015, the Standish Group Report indicated that 24% failure rate is reported for large-size projects versus a mere 2% success rate. Likewise, a 31% failure rate is reported for medium-size projects versus a mere 6% success rate (The Standish Group, 2015).
- In the year 2016, PMI's Pulse of the Profession Report indicated that organizations are losing US$122 million for every US$1 billion invested due to poor project performance, a 12% increase over last year (PMI, 2016).
- In the year 2017, PMI's Pulse of the Profession Report indicated fewer than 60% of projects are being completed on time and on budget, and are meeting original goals and business intent, and are having low benefits realization maturity (PMI, 2017d).

- Finally, in the year 2018, PMI's Pulse of the Profession Report indicated that 9.9% of every dollar is wasted due to poor project performance (PMI, 2018).

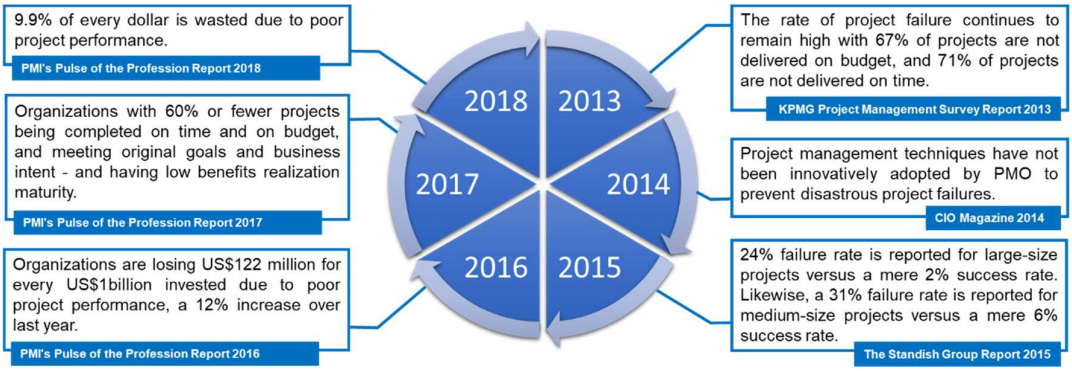

Figure 1 - Historical View of Project Reports (2013 - 2018)

Source: Author's Own Analysis

The problem appears to originate in a unilateral PMO system that is focused on a single-dimensional domain rather than being multi-dimensional. A unilateral PMO system creates an interconnectivity gap between project management, program management, and portfolio management domains and this interconnectivity is creatively explained by PMI through its Organizational Project Management (OPM) entity. PMI defines OPM as an entity with the application of knowledge, skills, tools, and techniques to organizational activities and project management, program management, and portfolio management activities (known as the OPM Continuum) the objective of which is to achieve the aims of an organization through projects (PMI, 2013). Each OPM Continuum domain consists of its own life cycle process group and each process group within a continuum domain has a unique interconnecting relationship across multiple domains. These

interconnections are lost when it is viewed through a single-dimensional lens unilaterally. This opens a door to exploration of the OPM Continuum's interconnecting practices and to consideration as to whether there exist opportunities for improvement.

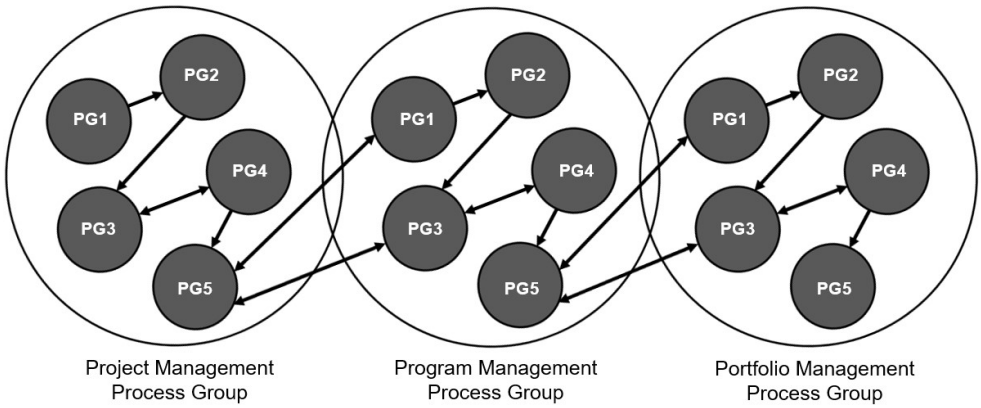

Figure 2 - OPM Continuum and Associated Life Cycle Process Groups
Source: PMI Organizational Project Management Maturity Model (2013)

1.3 Aims and Objectives

The aim of this research is to explore the interconnecting practices within the OPM Continuum. In order to achieve this, four objectives are identified:

- **Objective 1:** To critically review the literature on the OPM continuum comprising of Project Management, Program Management and Portfolio Management domains of practice.

- **Objective 2:** To investigate the practice experience of OPM Continuum's interconnecting relationships from the perspective of organizational PMO practitioners.
- **Objective 3:** To examine the key factors influencing the creation and operation of the relationships between OPM Continuum elements through a PMO lens.
- **Objective 4:** To provide recommendations for organizational PMO practitioners to guide future development of such relationships.

Objective 1 will be approached through critically reviewing the existing literature such as project management journals and articles on project management, program management and portfolio management domains of practice. Objective 2 and Objective 3 will be achieved through empirical research; in this case through a qualitative research analysis by conducting semi-structured interviews. For Objective 2, the aim would be to understand the OPM Continuum and its complex multi-dimensional world with an exploration of single unilateral domain versus multi-dimensional domains from the perspective of organizational PMO practitioners. For Objective 3, the aim would be to examine the key drivers, challenges, opportunities and gaps through a PMO lens. Objective 4 will be achieved by means of data analysis, the data will be allowed to speak for itself and provide us with a robust understanding of the situation. Based on the outcome recommendations will be presented.

Research questions are as follows:

- **RQ1. What are the strategic challenges and opportunities for PMO?**
    - This question seeks to understand the unilateral stance of PMO in a current setting. It seeks to address the role that PMO plays in an organization and the key drivers for its success.
- **RQ2. What are the significant gaps and areas of opportunities for OPM?**
    - This question seeks to understand the organization's understanding of the OPM Continuum and its interconnecting relationships and intertwined capabilities. It seeks to address key opportunities for and challenges to OPM interconnectivity development in an organization.
- **RQ3. What are the possible improvement and recommendation approaches for OPM within a PMO?**
    - This question seeks to understand the organization's efforts of harmonizing PMO's operation with OPM Continuum and its continuous improvement process. It seeks recommendation approaches for PMO to adopt an OPM practice.

1.4 Structure of the Research

The structure of this research is adapted from Saunders, Lewis & Thornhill's (2009) research process model. The research is structured into six chapters as follows:

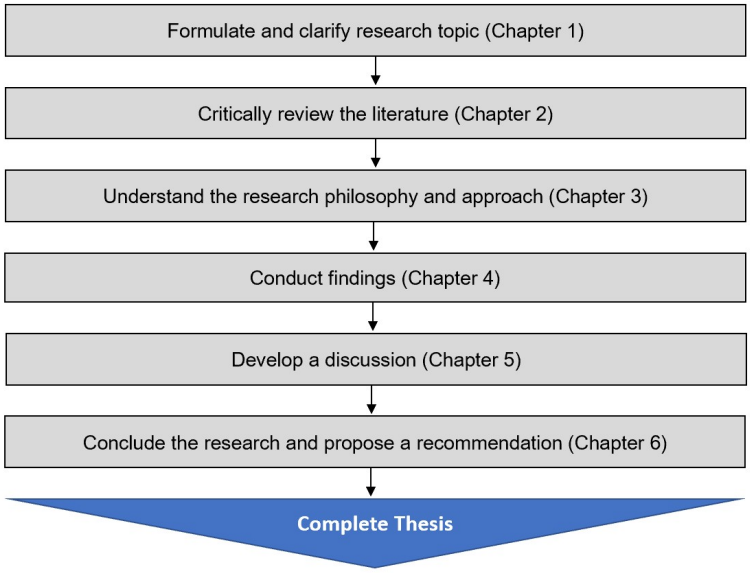

Figure 3 - The Research Process

Source: Author's Own Analysis based on Saunders, Lewis & Thornhill (2009)

- Chapter 1 covers the purpose and provides the justification for the research and concluding with aims and objectives along with the descriptive layout of the chapters and the structure of the research.

- Chapter 2 provides a critical review of the literature by investigating the body of scholarly work in four focus areas, namely: (1) project management, (2) program management, (3) portfolio management and (4) organizational project management. This chapter highlights the interconnectivity gap between project management, program management, and portfolio management domains and raises research questions.

- Chapter 3 discusses research methodology and makes a compelling argument in support of an interpretivist position. It then covers the approach

to data collection using semi-structured interviews. sampling using a self-selection technique and data analysis process. It also covers an assessment of ethical considerations along with the research strengths and limitations. The chapter concludes with a review of the pilot study and discusses lessons learned, and considers how the main research study is shaped.

- Chapter 4 covers the analysis of the data using the qualitative method selected and develops findings around eight identified themes aligned to address the three research questions within the four focus areas: (1) project management, (2) program management, (3) portfolio management and (4) organizational project management. This chapter concludes with a summary of key findings covering all eight identified themes.

- Chapter 5 offers discussion and interpretation of the findings. In each focus area, this chapter discusses the challenges and opportunities.

- Finally, Chapter 6 concludes the research by summarizing the findings and demonstrating how each objective has been achieved.

The thesis concludes by offering recommendations and a reflection on personal and professional development arising from carrying out this research.

2 LITERATURE REVIEW

2.1 Introduction

This chapter provides a critical review of the literature by investigating the body of scholarly work in four focus areas: (1) project management, (2) program management, (3) portfolio management and (4) organizational project management (OPM). In further reviewing the body of scholarly works, three primary themes emerged that contributed significantly towards the pilot study. These three themes are (1) Project Management Office (PMO) structure and strategy, (2) OPM practice and development and (3) PMO/OPM harmonization and improvement. These three themes along with the four focus areas played a significant role in the development of the research questions that contributed objectively to the entire research study.

First, besides conducting a critical review of the literature, one of the aims of this chapter is to identify the literature, discipline and key influential model in the space of project management, program management, and portfolio management and its interrelationships with OPM. This was achieved through focused historical research of the evolution of project management, program management, and portfolio management domains (known as OPM Continuum) and identified each domain's life cycle process group associated. The concept of process group life cycle plays a key role in this research study as it explores and examines OPM and its Continuum's interrelationships in light of the process group model. Since OPM

is Project Management Institute (PMI) model, this research explored and examined OPM and its Continuum's interrelationships in light of the PMI process group model.

Second, the other aim of this chapter is to identify the gaps within the interconnecting domains of the OPM Continuum. This was achieved through the dissection of the interconnecting discipline and by thoroughly examining project management office (PMO), program management office (PgMO) and portfolio management office (PfMO) disciplines respectively. On further examination, the literature review revealed a unique set of key capabilities that existed within PMO, PgMO and PfMO entities that demonstrated that these key capabilities were highly distinguishable and do not appear to be cross-functional. The key takeaway was that these key capabilities showed compelling evidence of the unilateral setting which looped back to strengthen the argument that gaps within the interconnecting domains of the OPM Continuum exist.

Third, the final aim of this chapter is to develop research questions that can be used for semi-structured interviews and be analyzed using qualitative research analysis method. Within the PMO domains, there are certain areas of literature that have influenced PMO development. These works of literature are in project management, program management, and portfolio management domains of practice. A critical analysis of this literature will help to form the key themes to develop interview questions for this study.

2.2 Specific Critique of PMO/OPM Literature

It is important to understand the world of PMO/OPM literature through the lens of the researcher's experience. This contextual visualization is provided through the deconstruction of the PMO/OPM literature based on the researcher's experience in PMO/OPM practice spanning over twenty years. The current PMO/OPM literature can be compartmentalized into two intellectual knowledge carriages; "commercial knowledge" and "research knowledge". Commercial knowledge consists of intellectual properties published by practitioners for commercial distribution purposes only. The objective of these publications is purely for commercial realization and profitability. Therefore, the core value of the publication is to sell solutions that may not be supported by adequate research. Therefore, commercial knowledge is often opinionated based on the experience of a practitioner from an abstract point in time. On the other hand, research knowledge consists of intellectual properties published by researchers and institutional bodies for the purposes of contributing knowledge growth and fostering professional development substantiated through academic research. While there are several commercial knowledge publications on project management, program management, and portfolio management domains respectively, however, publications on PMO and OPM Continuum interconnectivity are highly scarce. Teubner (2018) states that academic research on OPM is still in its infancy. Therefore, research knowledge publications on PMO and OPM Continuum interconnectivity are scarcest since only a handful of combined

research has been made in the field of PMO and OPM Continuum collectively (Aubry et al., 2010).

2.3 An Overview of Organizational Project Management

In today's world of a fast-paced industry, organizations rely heavily on data; consumer data, demand data, transactional data, and these datasets are developed into a comprehensible data-mining prediction approach that feeds into corporate strategies for the development of new consumer products and services (Van Nguyen et al., 2020). However, the driving forces of global competition are requiring companies to develop new ideas for products and services at lower prices to consumers (Wang & Hazen, 2016). Therefore, the need to develop products and services at lower prices is mandating corporate executives to consider cost-saving strategy formulation at every level, i.e. from research and development to final production of products and services. However, ul Musawir et al. (2020) argues that project management, a continuum of organizational project management (OPM), has traditionally been viewed by corporate executives as an execution-oriented discipline and is often excluded from the strategy formulation. Porter & Heppelmann (2019) further argues that there is a disconnect between the wealth of data and the physical world in which we apply it for strategy formulation. This disconnect often misses the importance of data from the organizational project management continuum consisting of portfolio management, program management, and project management to organizations and often gets ignored.

PMI defines organizational project management (OPM) as a framework in which OPM continuum comprising of portfolio management, program management, and project management domains of practice are integrated into organizational enablers in order to achieve strategic objectives (PMI, 2018). Organizational enablers consist of capabilities, knowledge articles, best practices, and support processes that generate OPM data. The datasets of comprehensive results gained from organizational enablers can be utilized as feeds into corporate strategic planning. PMI further states that OPM supports the appropriate balance of knowledge, processes, people, and supportive tools across all functional areas of the organization. Therefore, OPM plays a valuable and critical role in an organization's strategic planning on formulating decisions for an organization's future direction (PMI, 2018). This positions OPM as an important organizational strategy and serves as a critical input with a wealth of data for executives to consider it as part of a cost-saving strategy formulation.

A survey conducted by Mossalam & Arafa (2017) reveals a lack of OPM implementation, adoption, and integration between the OPM continuum of the interrelated domains and organizational practices. It is, therefore, important to understand the reason for the gap. This calls for a literature review into the OPM continuum. The literature takes a critical review of the OPM continuum comprising of project management, program management, and portfolio management domains of practice. The literature review moves through the description to consider the strengths and weaknesses of the literature internally and then externally (in terms) of what this tells us or doesn`t about the field. The literature review starts with the project management domain of practice followed by a

historical look into the evolution of project management in section 2.4.1. It continues to review project management as a practice in section 2.4.2 followed by the strength and weaknesses of project management literature review in section 2.4.3. The literature review continues with the program management domain of practice followed by a historical look into the evolution of program management in section 2.5.1. It continues to review program management as a practice in section 2.5.2 followed by the strength and weaknesses of program management literature review in section 2.5.3. The literature review continues further with the portfolio management domain of practice followed by a historical look into the evolution of portfolio management in section 2.6.1. It continues to review portfolio management as a practice in section 2.6.2 followed by the strength and weaknesses of portfolio management literature review in section 2.6.3. The literature review continues further with the OPM followed by a historical look into the evolution of OPM in section 2.7.1. It continues to review OPM as a practice in section 2.7.2 followed by the strength and weaknesses of OPM literature review in section 2.7.3. Based on the critical review of the literature, the author dwells into formulating the research questions and completes the literature review with a table demonstrating the literature that influenced the development of the interview questions.

2.4 Project Management

While project management spans across vast industries from Automotive, Aerospace, Construction, Energy, Finance, Government, Healthcare, Information Technology to Manufacturing, there is a drive to integrate project management

practice into emerging technologies making it even more competitive and complex. This demand for growth is challenging the business to respond in a positive way giving rise to project management as a dedicated sector (Tinnirello, 2000). As a result, project management practice has matured into a field of professional discipline comprising of its own professional associations such as Association of Project Management (APM), Global Alliance for Project Performance Standards (GAPPS), International Project Management Association (IPMA) and Project Management Institute (PMI), its own journals (PMI's Project Management Journal, IPMA's Project Perspectives and International Journal of Project Management), and its own conferences and symposia (Bredillet et al., 2015).

Project management, in the simplest term, is the art of managing a project. The management style is often scientifically applied that is best suited to its specific field of concentration. While the management of tools and techniques differs from research and development, construction and engineering, information technology and business management fields, however, the fundamentals remain the same (Kwak & Anbari, 2009). Project management could also be viewed as an ancient management skill that must have been applied by several ancient civilizations during the construction of some of the greatest engineering marvels such as the construction of the Pyramids by the Egyptian Pharaohs and Great Wall of China by the Chinese civilization during the Ming Dynasty (Ogunde et al., 2017) or the construction of the Taj Mahal by the Indian civilization during the Mughal Empire (Khan, 2017). However, projects of modern times have become far more complex and sophisticated and the modern project management practice has evolved as such that it often requires projects to be applied in a controlled

environment to manage them successfully (Hedeman et al., 2009). Hence, the term “project management” is often perceived as modern management science (Kwak & Anbari, 2009), therefore, it would be wise and necessary to understand the current definition of project management as it is applied today. There are several definitions of project management, as follows:

- **British Standard for Project Management:** *Project management is the application of methods, tools, techniques, and competencies to a project. Project management includes the integration of the various phases of the project lifecycle (BS ISO 21500, 2012).*
- **Association of Project Management (APM):** *Project management is the process by which projects are defined, planned, monitored, controlled and delivered such that the agreed benefits are realized. Projects are unique, transient endeavors undertaken to achieve the desired outcome. Projects bring about change and project management is recognized as the most efficient way of managing such change (APM, 2006).*
- **Project Management Institute (PMI):** *A project is a temporary endeavor undertaken to create a unique product, service, or a result. The temporary nature of projects indicates a definitive beginning and end. Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI, 2017a).*

To summarize the various definitions provided, project management is a *temporary endeavor with a definitive beginning and an end, and is undertaken with*

agreed business objectives to primarily meet quality, time, budget and with added business benefits.

It is widely accepted by many academics and researchers that life cycle plays a critical role in organizational effectiveness and that variations in the life cycle can have an impact on its overall success (Adizes et al., 2017). Wen et al. (2015) state that in project management, life cycle consists of stages or phases where each stage or phase consists of work efforts corresponding to specialized tasks with specialized focus rendered by specialized roles. Wen et al. further state that each life cycle stage can consist of many units of processes or process groups (Wen et al., 2015). In PMI PMBOK, project management life cycle is identified into 5 phases; (1) Initiating, (2) Planning, (3) Executing, (4) Monitoring and Controlling, and (5) Closing, also known as process group, as depicted in the figure below.

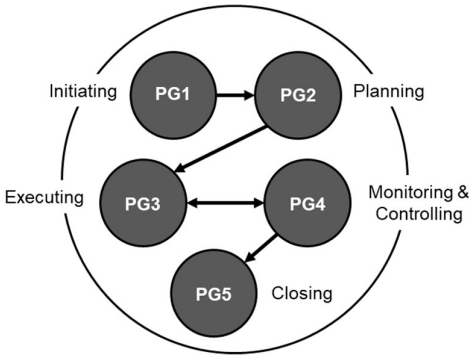

Figure 4 - PMI PMBOK Process Group Life Cycle

Source: Based on PMI PMBOK (PMI, 2017a)

2.4.1 Evolution of Project Management

In order to understand and appreciate the discussions surrounding modern project management, a brief overview and historical understanding of project management discipline would be necessary. Project management is not a new discipline. It has been in existence for thousands of years. The evidence of project management is manifested through the accomplishments of many ancient civilizations by the Greeks, Romans and the Egyptians, for example, the Great Pyramid of Giza and the Mesoamerican pyramid must have engaged the engineering marvel and project management expertise of the ancient times (Verzuh, 2016). In the early years, project management was often perceived as a part-time endeavor. Traditionally, project management discipline was utilized heavily in engineering and construction. This period was called “the period of traditional project management” (Kerzner & Saladis, 2009). Kerzner and Saladis further explain the Renaissance period of project management as the “great awakening”, where project management discipline was applied to the information system, telecommunications, automotive and banking industries. The current period is the modern period of project management where project management is readily accepted in any industry and project management credentials are widely accepted and mandated (Kerzner & Saladis, 2009).

Project management has been an interesting topic of study in academia and various industries; however, project management literature is scarce and limited. Lock (1969) was the first to publish literature on project management, which was merely four decades ago, while the earliest published tool for project

management was developed during the second decade of the twentieth century known as the “Gantt Chart” named after the founder Henry Laurence Gantt (Deacon & Lingen, 2015). Project management discipline took a serious leap in the late 60s and early 70s as more research was made that contributed towards project management literature. In the year 1965, a group of innovative project practitioners formed an alliance for their practice and established the world’s first project management association called International Project Management Association (IPMA) in the Netherlands and established Project Excellence Baseline (PEB) framework (IPMA, 2017). In the year 1969, Project Management Institute (PMI) was founded and PMI published its first standard called “Project Management Body of Knowledge” (PMBOK) in the year 1987 (PMI, 2017a).

The first official project management methodology was developed by the Swiss Federal Administration in 1975 called “Hermes” (Hermes, 2017), while in the same year, the first official project management technique called Project Resource Organisation Management Planning Technique (PROMPT) was developed by Simpact Systems Ltd in the United Kingdom (UK) (Naik & Jenkins, 2019). Based on its successor, “PROMPT II” was released and in 1989 a new methodology was derived called “PRINCE”, which was later revised in 1996 and was released as “PRINCE2” by the Office of the Government of Commerce (OGC) in the UK (Duda & Skalna, 2019). In 1997, V-Modell 97 methodology was developed by the Federal Republic of Germany and was established as a standard for all civil, government and military agencies in Germany. The development of V-Modell was a result of the development standards for technology systems of the Federal Republic of Germany (V-Modell, 2004). In Japan, a new project

management methodology was being developed based on Japanese-type project management knowledge. It was called Project and Program Management (P2M) methodology and it was a joint initiative by Professor Shigenobu Ohara of University of Technology Sydney and Project Management Association of Japan (PMAJ) in 2001 (PMAJ, 2016).

2.4.2 Project Management as a Practice

The challenge we face today is to understand how the evolution of project management has shaped the real-life experience of project practitioners today. The objective is to view project management as a practice where project practitioners are organizing, leading and managing projects from inception to delivery. The evolution of project management has led to a branching of several major project management methodologies and frameworks such as PMI PMBOK (PMI, 2017a), OGC PRINCE2 (Axelos, 2017), IPMA PEB (IPMA, 2017) and several minor in-house project management methodologies and frameworks that selective companies have customized to fit their in-house specialized needs (PMI, 2018). These multiple project management approaches have created a highly complex practice that is opening up to the messiness and unpredictabilities involved in actually doing project work (Buchan & Simpson, 2020). This gateway of project management methodologies and frameworks has not eased the work of practitioners. It has added layers of complexities that have been a major contributing factor for effecting the organization-based self-esteem of project practitioners. This organization-based self-esteem includes project performances,

competence development, self-management and self-esteem (Ekrot et al., 2016). Adami & Verschoore (2018) states that complexities have affected the governance of project networks. Project networks generally comprise a set of control and coordination instruments and exchange of information that support and maintain collaboration among project practitioners. This collaboration is extremely crucial for project practitioners to communicate on portfolios, programs and projects with interdependencies. Project network interruption may result in a project's poor performance arising from complexities. These complexities continue to impact project performance as the data from the PMI 2019 Pulse survey showed organizations wasted almost 12 percent of their investment in project spend last year due to poor performance; a number that's barely budged over the past five years (PMI, 2019). Project management as a practice has evolved to become more complex. As a result, the competency of managing projects with an understanding of the complexity of interconnectivity between projects, programs, and portfolios has become increasingly necessary (PMI, 2019).

2.4.3 Strength and Weakness of Project Management Literature Review

The author was able to find a large number of literature searches for the project management domain of practice on project governance, project-related processes, project evolution, project management practice, project management models, and business strategy. Searches were conducted in the three key project

management journals namely (1) International Journal of Project Management, (2) Project Management Journal, and Elsevier Science Direct Journals (through Edinburgh Napier University institutional account). Further searches were made for professional literature involved identifying relevant publications from three prominent professional organizations, namely (1) the Association of Project Management (APM), (2) International Project Management Association (IPMA), and (3) Project Management Institute (PMI). While the author was able to find a large number of literature searches for the project management domain of practice, however, most of the literature lacked the OPM integrated and interrelated domains of practices within the OPM continuum; i.e. interrelationship with program management and portfolio management were significantly less to none. This demonstrates the lack of integration between the OPM continuum of the interrelated domains and organizational practices discovered through the survey conducted by Mossalam & Arafa (2017).

2.5 Program Management

As practitioners adopted the discipline of project management concepts across multiple and complex interrelated projects, it became evident that the traditional project management techniques weren't strategically benefiting due to its limitation of a robust management approach needed for interrelated complex projects. Historically, significant reports have emerged since 1996 that have exposed the failure of traditional project management methods on the integrated management of multiple and complex interrelated projects (Carlton, 2017). This

gave the rise to the birth of a new management approach called “program management”; a movement that demanded a robust integrated oversight of multiple and complex interrelated projects. This movement resulted during the same time these reports were published (Thiry, 2015). The emergence of the program management discipline resulted in the demand of providing management oversight to multiple strings of interrelated complex projects with operational responsibilities.

Program management, in the simplest term, is the art of managing multiple interrelated projects. Midler et al. (2019) state that program management is different from project management as it consists of four characteristics; (1) it involves multiple projects, (2) the projects involved are complex, (3) the projects have strong inter-dependencies that demand specific coordination effort (which explains the program denomination) and (4) the projects have heterogeneous aims, with some being oriented toward implementation. In this context, program management requires a more complex governing structure and capabilities where “traditional” project management would fall short for complex programmatic undertakings (Midler et al., 2019). Program management is a new emerging topic of study in academia and practice; therefore, program management literature is rather limited due to its infancy in both practice and academia. The earliest published literature on program management was published in the United States (US) in the year 1990 by an award-winning Electrostatic Discharge (ESD) consultant Ted Dangelmayer working on an ESD control program at AT&T (Dangelmayer, 1990), which is merely reaching two decades, while Brown (2007) published the earliest handbook for program management in the year 2007. As we

explore further into the evolution of program management, it would be necessary to understand the current definition of program management as it is applied today. There are several definitions of program management, as follows:

- **British Standard for Program Management:** *Program management is a temporary structure of interrelated program components managed together that provides advantages, contributes to the achievement of strategic and operational objectives, and realizes benefits. It is comprised of program components that have interdependent and interrelated relationships to one another. (BS ISO 21503, 2017).*
- **Association of Project Management (APM):** *Program management is the co-ordinated management of related projects, which may include related business-as-usual activities that together achieve a beneficial change of a strategic nature for an organization. What constitutes a program will vary across industries and business sectors but there are core program management processes. (APM, 2006).*
- **Project Management Institute (PMI):** *A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Program management is the centralized coordinated management of a program to achieve the program's strategic objectives and benefits (PMI, 2017b).*

To summarize the various definitions provided, program management is *the management of interrelated projects or programmatic components that may consist of a temporary endeavor with a definitive beginning and an end for*

interrelated projects or may consist of ongoing business-as-usual activities for programmatic components and is undertaken with agreed business objectives to primarily meet quality, time, budget and with added business benefits. In PMI Standard for Program Management (SPgM), program management life cycle is identified into 3 phases consisting of 5 process groups. This process group is depicted in the figure below.

- Phases: (1) Program Definition, (2) Program Delivery and (3) Project Closure

- Process Group: (1) Program Formulation, (2) Program Planning, (3) Component Authorization and Planning, (4) Component Oversight and Integration, and (5) Component Transition and Closure.

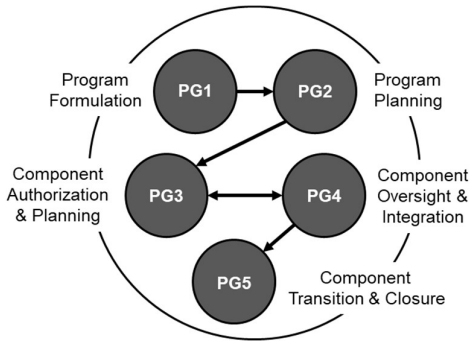

Figure 5 - PMI SPgM Process Group Life Cycle
Source: Based on PMI SPgM (PMI, 2017b)

2.5.1 Evolution of Program Management

Evolution has been part of human life since creation and likewise, evolution in every field of human knowledge from medicine, engineering, business to politics

has been eminent. Nonetheless, there are signs of evolution in program management as well. Program management evolved in the 40s in the US and the concept of program management was first used during the Manhattan Project. It was during the 80s when program management was used within the industry when corporations started to adopt program management concepts and techniques (Didinsky, 2017). Program management is still in its infancy with its first publication released in the late 90s, therefore, the evolution is considered to be in its very early stages, which makes program management literature highly limited. Program management discipline took a serious leap in the late 90s as more research was made that contributed towards program management literature. In 1999, Office of Government of Commerce (OGC) published Managing Successful Programmes (MSP) standard followed by Project Management Institute (PMI) publication of the Standard for Program Management (SPgM) methodology in the year 2005 (PMI, 2017b).

Program management literature focuses on a group of related projects, subprojects, and program activities that are managed in a coordinated way to obtain benefits not available from managing them individually (PMI, 2017b), unlike project management literature that is centered on single projects (although they may involve subprojects). Historically, program management is emanated from engineering and construction discipline, however, it was the modern project management that developed the concepts and techniques such as work breakdown structure (WBS) and Programme Evaluation and Review Techniques (PERT). In addition to defense and construction industries, information technology

(in the 1980s) showed sustained interest and supported the development of the field. Later, professional organizations such as the Association of Project Management (APM), Australian Institute of Project Management (AIPM), International Project Management Association (IPMA), and Project Management Institute (PMI) were formed which heralded a new era to develop bodies of knowledge (Abbasi & Jaafari, 2018).

Since 1996, the standard defacto model in the US has been PMI PMBOK. In 2003, PMI introduced the Organizational Project Management Maturity Model (OPM3) and, since then, there has been a vision from PMI to develop a standard for program management. In summer of 2003, the Program and Portfolio Management Standard (PPMS) team was formed comprising of 416 PMI volunteers representing 36 countries along with PPMS Core Team and the Program Management Architecture Team (ProgMAT). In 2004, the teams started to develop the standard and by 2005 the standard was ready for approval. The first draft was presented to the PPMS Adjudication Team on August 2005 and it was accepted. By December 2005, the PMI Standard for Program Management (SPgM) was officially released (PMI, 2017b).

2.5.2 Program Management as a Practice

The complexity of project management with interrelated multiple projects has led to the management of a program as a collection of projects and activities structured to achieve an expected benefit (Jiang et al., 2018). The evolution of program

management has led to a branching of several program management methodologies and frameworks such as PMI SPgM (PMI, 2017b), OGC MSP (Axelos, 2011), IPMA PEB (IPMA, 2017). The scalability of program management has been recognized as an important management practice by the United States Senate through its recognition of its Program Management Improvement and Accountability Act (Jiang et al., 2018). However, Teubner (2018) states that there are challenges that program practitioners have been facing. Professional institutions such as the Project Management Institute (PMI), the Association for Project Management (APA), and the UK Office of Governance Commerce (OGC) have realized the limitations and are trying to address these challenges by issuing best practice standards. These challenges are technology change, transformational change, socio-technical change, and organizational change (Parviainen et al., 2017). In today's rapid age of technologization, managing programs without understanding the intricacy of the interconnecting relationship between program management, project management, and portfolio management domains of practice can be a catastrophic risk. Gregory et al. (2015) stress that program practitioners are required to understand and coordinate interrelated dependencies of intercorrelated projects under a program. Without understanding the interrelatedness and interconnecting relationships pose a major risk to any running program. PMI 2019 Pulse survey showed that organizations with project and program management practices are becoming more technology quotient; i.e. the ability to adapt, manage and integrate technology based on the needs of the organization. Program practitioners are required to become more domain interconnected savvy. As a result, the competency of managing programs with an understanding of the complexity of

interconnectivity between project management, program management, and portfolio management domains of practice has become increasingly necessary (PMI, 2019).

2.5.3 Strength and Weakness of Program Management Literature Review

The author was able to find a large number of literature searches for the program management domain of practice on program governance, program-related processes, program evolution, program management practice, program management models, and business strategy. Searches were conducted in the three key project management journals namely (1) International Journal of Project Management, (2) Project Management Journal, and Elsevier Science Direct Journals (through Edinburgh Napier University institutional account). Further searches were made for professional literature involved identifying relevant publications from three prominent professional organizations, namely (1) the Association of Project Management (APM), (2) International Project Management Association (IPMA), and (3) Project Management Institute (PMI). While the author was able to find a large number of literature searches for the program management domain of practice, however, most of the literature lacked the OPM integrated and interrelated domains of practices within the OPM continuum; i.e. interrelationship with project management and portfolio management were significantly less to none. This demonstrates the lack of integration between the OPM continuum of the interrelated domains and organizational practices discovered through the survey conducted by Mossalam & Arafa (2017).

2.6 Portfolio Management

As projects become more dynamic, complex, colossal, and costlier, there is an ever-increasing need to ensure that projects are completed on time and on budget. Managing individual projects with oversight has become a paramount effort to ensure that vigilance is not compromised. Furthermore, ensuring that projects stay steadfast to organizational strategy and delivery business benefits calls for a robust project portfolio management process (Killen & Hunt, 2013). Through a robust project portfolio management process, corporations can expect to achieve benefit realization (Sera, 2017); i.e. ensuring that time and resource management are invested in making desirable changes, projects are prioritized and de-prioritized based on dynamic needs, and demand management is managed at it's optimum (Rad & Levin, 2007).

Project portfolio management is often confused with financial portfolio management as there is a high distinction between the two. While the financial portfolio management deals primarily with investment and asset management with a focus on stocks and equities, project portfolio management deals with the dynamic decision-making process of a business' list of active projects that are constantly being updated and revised with a primary focus on a process of evaluation, selection, prioritization, and de-prioritization of projects and resources (Rad & Levin, 2007). Portfolio management has some key capabilities that are essential for a truly optimized portfolio management operation. These key capabilities are:

1. **Strategic Management:** Alignment of portfolio components to one or more strategic objectives with constant oversight for any strategic dynamic changes (PMI, 2017c).
2. **Demand Management:** A process, an organization puts in place, to internally collect new ideas, projects, and needs during the creation of a portfolio (Romano et al., 2016).
3. **Prioritization Management:** An approach to setting priorities to portfolio components against budget and resource constraints in alignment to business strategic goals (Gosenheimer, 2012).
4. **Capacity Management:** Dynamic management of resources' availability for projects and programs with constant re-adjustment based on purely resources' demand and supply. This is also known as Resource Allocation (Killen & Hunt, 2013).

As we explore further into the evolution of portfolio management, it would be necessary to understand the current definition of portfolio management as it is applied today. There are several definitions of portfolio management, as follows:

- **British Standard for Portfolio Management:** *Portfolio management is a collection of portfolio components grouped together to facilitate their management to meet, in whole or in part, an organization's strategic objectives (BS ISO 21504, 2015).*
- **Association of Project Management (APM):** *Portfolio management is the selection and management of all of an organization's projects, programs and related business-as-usual activities taking into account*

resource constraints. A portfolio is a group of projects and programs carried out under the sponsorship of an organization. Portfolios can be managed at an organizational, program or functional level. (APM, 2006).

- **Project Management Institute (PMI):** *A portfolio is a component collection of programs, projects, or operations managed as a group to achieve strategic objectives. Portfolio management is the centralized management of one or more portfolios to achieve strategic business objectives (PMI, 2017c).*

To summarize the various definitions provided**,** portfolio management is *the management of its group of components consisting of projects and programs with management oversight of demand intake, selection of portfolio components in alignment with business strategy, prioritization or de-prioritization and resource management against demand and supply using industry best practices in order to meet its strategic business objectives and achieve benefits realization.* In PMI Standard for Portfolio Management (SPfM), portfolio management lifecycle is identified into 5 phases; (1) Initiation, (2) Planning, (3) Execution, (4) Optimization, and (5) Monitor and Control, also known as process group, as depicted in the figure below.

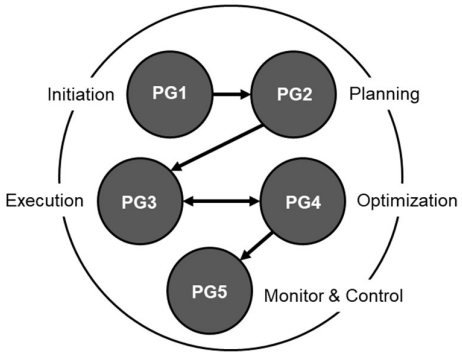

Figure 6 - PMI SPfM Process Group Life Cycle

Source: Based on PMI SPfM (PMI, 2017c)

2.6.1 Evolution of Portfolio Management

In order to understand and appreciate the discussions surrounding modern portfolio management, a brief overview and historical understanding of portfolio management discipline would be necessary. Portfolio management is a very new emerging topic of study in academia and various industries, which makes portfolio management literature and academic research rather limited due to its infancy in both practice and academia. Cooper (1998) was the earliest to publish literature on portfolio management. Although the subject was primarily on portfolio management, however, Cooper's literature catered towards new product development rather than project management (Cooper, 2017). The very first advance project portfolio management literature and its linkage to the portfolio management office (PfMO) was published in the year 2003 by Gerald Kendall and Steven Rollins, project and portfolio management experts (Kendall & Rollins, 2003), while the earliest published practical guide to selecting, managing portfolio with contribution from several experts in the field of project portfolio management was published in the year 2005 by Harvey Levine (Levine, 2005).

Because portfolio management discipline is in its infancy, portfolio management practice is often non-existent and non-effective in the vast majority of the organizations due to the fact that the portfolio management process is not fully implemented or is entirely non-existent. (Rad & Levin, 2007). Portfolio management discipline took a serious leap in the early-mid 2000s as more

research was made that contributed towards portfolio management literature. In 2006, Project Management Institute (PMI) published the Standard for Portfolio Management patented model/methodology (PMI, 2017c) followed by Office of Government of Commerce (OGC) publication of Management of Portfolios (MOP) standard in the year 2010 (OGC, 2010). With the releases of PMI's Standard of Portfolio Management (SPfM) in the US in the year 2006 (PMI, 2017c) and OGC's Management of Portfolios (MOP) standard in the United Kingdom (UK) in the year 2010 (OGC, 2010) kick-started the phenomena of portfolio management discipline worldwide as a practice.

2.6.2 Portfolio Management as a Practice

Portfolio management as a practice requires a delicate balancing of managing collection of projects, programs and sub-portfolios, and aligning this portfolio with the organization's strategies (Ahmadi-Javid et al., 2020). To achieve these objectives, portfolio practitioners apply business strategy by integrating decision-making processes on project investments, trading off risks and resources, and improving the value of the portfolio (Kopmann et al., 2017). Kock et al. (2016) argue that portfolio practitioners are required to perform portfolio balance. Portfolio balance refers to balancing risk and innovation in the portfolio. Any portfolio management approach that neglects risks may result in an unbalanced portfolio. Therefore, portfolio practitioners are required to manage risks of the entire portfolio that consists of a collection of projects, programs, and sub-portfolios (Ahmadi-Javid et al., 2020). The main purpose of portfolio risk management is to ensure that all portfolio components will achieve the

best possible success by putting together its components, organizational strategy, the business model, and environmental factors. It aims to optimize a key value for the organization by balancing risks through increasing the probabilities and impacts of positive risks and decreasing the probabilities and impacts of negative risks (PMI, 2017c). Professional institutions such as the Project Management Institute (PMI) and the UK Office of Governance Commerce (OGC) have addressed these capabilities as best practices in their standards such as PMI SPfM and OGC MOP. Petro et al. (2019) state that despite the variety of instructions on how portfolios should be managed, how portfolio balance should be performed, and how portfolio strategies should be aligned, portfolio practitioners still struggle with portfolio optimization and portfolio management. It appears that there is a lack of understanding and Petro et al. further argue that portfolio practitioners are required to have a strong understanding of the interconnecting relationship between the portfolio and the collection of projects and programs within the portfolio while managing the portfolio and performing portfolio balance. PMI mentioned in its 2018 Pulse survey that the dynamic and rapidly changing business environment continues to emphasize the need for excellence in project management, program management, and portfolio management practice. As a result, the competency of managing portfolios with a strong understanding of the interconnecting relationship between the portfolio and the collection of projects and programs has become increasingly necessary (PMI, 2018).

2.6.3 Strength and Weakness of Portfolio Management Literature Review

The author was able to find a large number of literature searches for the portfolio management domain of practice on portfolio governance, portfolio-related processes, portfolio evolution, portfolio management practice, portfolio management models, and business strategy. Searches were conducted in the three key project management journals namely (1) International Journal of Project Management, (2) Project Management Journal, and Elsevier Science Direct Journals (through Edinburgh Napier University institutional account). Further searches were made for professional literature involved identifying relevant publications from three prominent professional organizations, namely (1) the Association of Project Management (APM), (2) International Project Management Association (IPMA), and (3) Project Management Institute (PMI). While the author was able to find a large number of literature searches for the portfolio management domain of practice, however, most of the literature lacked the OPM integrated and interrelated domains of practices within the OPM continuum; i.e. interrelationship with project management and program management were significantly less to none. This demonstrates the lack of integration between the OPM continuum of the interrelated domains and organizational practices discovered through the survey conducted by Mossalam & Arafa (2017).

2.7 Organizational Project Management

As a result of portfolio management's low maturity practice due to its lack in a fully implemented processes (Rad & Levin, 2007), organizations have been struggling with the implementation of their strategic practice and are caught in a reactive mode of managing fire drills rather than managing a cohesive balance of both strategical and tactical operations (Lazar, 2015). The reactive mode takes away the organizational energy to focus on strategic adjustments that are required to maneuver the organizational track to its successive course. This creates a latency between an organizational decision that is required to be made and the moment a corresponding action is required to implement a decision, which is known as organizational inertia (Lazar, 2015). The delivery of a portfolio strategy that would identify the right projects and programs in the most effective way is a capability that could address the organizational inertia (Cooke-Davis, 2015).

This calls for an implementation of a framework of capabilities that would address a balanced practice consisting of a strategic proactive mechanism that would eliminate reactive fire drills. It calls for a model that addresses the unification of project management, program management, and portfolio management domains at an organizational level (Lazar, 2015). PMI addressed this call with the development of a framework called Organizational Project Management (OPM); a birth of a model that demonstrates unified interconnectivity of relationship between project management, program management, and portfolio management domains. PMI defines OPM as a framework in which portfolio management, program management, and project management (known as OPM Continuum) are

integrated with organizational enablers to achieve strategic objectives (PMI, 2018). PMI further adds that OPM advances organizational capability by linking integrated OPM Continuum of practices through the application of knowledge, skills, tools, and techniques to support the strategic objectives of an organization (PMI, 2013). In simplified terms, OPM focuses on the interconnecting arms of portfolio management, program management, and project management known as OPM Continuum through cohesive multi-dimensional lenses.

Each OPM Continuum domain consists of its own life cycle process group and each process group within a continuum domain has a unique interconnecting relationship across multiple domains. This model plays a monumental key role in the entire research study.

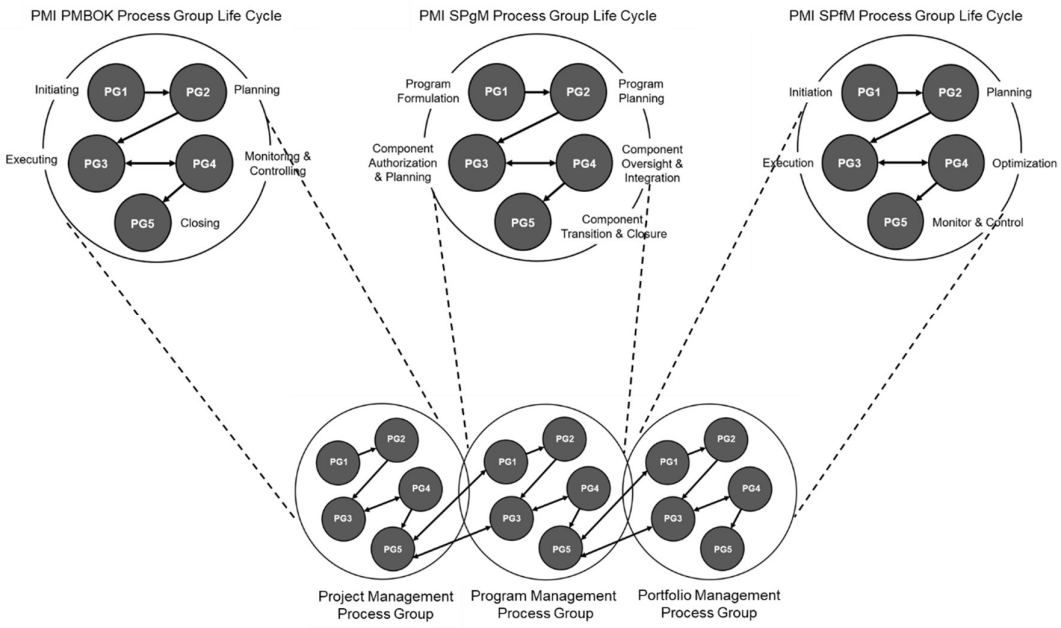

Figure 7 - Process Group Life Cycle's Interconnecting Relationship Across OPM Continuum

Source: PMI Organizational Project Management Maturity Model (2013)

OPM addresses several interconnected capabilities that are often lost in an isolated framework of standards. These capabilities are success factors and are essential for organizational effectiveness (Cooke-Davis, 2015). They are:

(1) Effective management of portfolio of programs and projects (PMI, 2018)

(2) Effective management of program and project talents (PMI, 2014a)

(3) Standardizing and improving OPM processes across the organization (PMI, 2014b)

(4) Creating the right organizational climate and behaviors (Cabrey & Haughey, 2014)

(5) Ability to specify, manage and achieve benefit realization (Cooke-Davis, 2015).

These capabilities play a critical role in an effective project management office (PMO) support functions, especially at an enterprise-wide level (Crawford, 2006). Therefore, a strong bonding relationship between a PMO and OPM is essential for effective organizational performance (Khalema el at., 2015).

2.7.1 Evolution of Organizational Project Management

There were several project management standards that were developed internationally, i.e. PMBOK in the US (PMI, 2017) PRINCE2 in the UK (Van Bon & Verheijen, 2006), Hermes in Switzerland (Hermes, 2017), V-Modell in Germany

(V-Modell, 2004) and P2M in Japan (PMAJ, 2016). Likewise, there have been some rather limited standards developed for program management and portfolio management. For program management, there are only two co-existing standards; MSP in the UK (Van Bon & Verheijen, 2006) and SPgM in the US (PMI, 2017b). And for portfolio management, there are only two co-existing standards; MOP in the UK (OGC, 2010) and SPfM in the US (PMI, 2017c). While these standards played a significant role in developing a global practice, however, these standards stood as isolated standards that lacked a collaborative infusion; a model that would infuse project management, program management, and portfolio management domains as an organizational capability (Crawford, 2006). Organizational project management (OPM) was the PMI's response to a model that would address this gap. OPM model was developed as part of the Organizational Project Management Maturity Model (OPM3), which took over a period of nearly six years to develop and invested over 800 volunteer project management practitioners from over 35 countries.

In 1998, PMI chartered the OPM3 project to develop a maturity model as a global standard and to develop a model that identifies interconnectivity between the project management, program management, and portfolio management domains. In 1999, OPM3 Research Team was established and the team examined the successful "Capability Maturity Model" developed by the Software Engineering Institute of Carnegie-Mellon University and reviewed 27 contemporary models (PMI, 2013). The research team concluded that there was no existing model that satisfies the requirements nor could address all of the best practices. The research

team decided to develop a model that could address the constraints of an organizational change in the light of best practices that could be evaluated through examining the project management, program management, portfolio management and OPM capabilities of an organization (PMI, 2018).

In late 2000, the research team started identifying best practices and started developing capabilities, outcomes and key performance indicators (KPI). In 2001, the research team started to design alpha and beta test for the model and approximately 200 volunteers were invited for the test. In early 2003, a prototype designed was approved and presented to the public in a multi-media format. By mid-2003, OPM3 went through a beta testing phase and by late 2003 OPM3 was released for publication (PMI, 2013). Currently, there is only one model globally that identifies the interconnectivity of project management, program management, and portfolio management domains into an interconnected model.

2.7.2 Organizational Project Management as a Practice

Organizational Project Management (OPM) as a practice differs from the organizational level in that it covers the entire organization, including all its operations and projects; thus, it goes well beyond the management of an individual project. OPM as a practice encompasses project management, program management, and portfolio management domains of practice and their interconnected relationship (Aubry & Lavoie-Tremblay, 2018). The core objective of an OPM as a practice is to provide governance of portfolios, programs, projects

and all of that coexist within the OPM Contiunnum of the interconnectivity between project management, program management, and portfolio management domains of practice. Therefore, the understanding of the interrelationship between portfolios, programs, and projects is deemed extremely crucial for any practitioner (Simard et al., 2018). Müller et al. (2018) argue that the development of OPM as practice transpired in a sequence of two discourses. The first discourse started with the evolution of tools and techniques, which developed into a distinct body of knowledge, followed by a focus on OPM capabilities. This initiated a second discourse leading to standards in project management, program management, and portfolio management, and related maturity models for OPM as a practice. Therefore, while the OPM as a practice provides governance oversight, it also focuses on the interconnected capabilities of the OPM Continuum (Müller et al., 2018). Hyväri (2016) emphasizes the importance of the role of a practitioner within OPM practice and argues that the roles of OPM and top management are an important focus area in an effective company strategy implementation. This positions OPM practice on par with top management as strategic management involves the formulation and implementation of the major goals and initiatives taken by a company's top management. Therefore, OPM practice acts as a gateway between OPM practitioner and the company's top management and getting them deeply engaged in project management, program management and portfolio management domains of practice (Hyväri, 2016). PMI mentioned in its 2019 Pulse survey that the skill of a practitioner will require project management skills, leadership skills and strategic and business management skills, which is an integral part of an OPM as a practice. As a result, competency of managing

projects which understanding the complexity of interconnectivity between projects, programs, and portfolio will become increasingly necessary as more and more people in all roles will be hired to manage projects, programs and portfolios (PMI, 2019).

2.7.3 Strength and Weakness of Organizational Project Management Literature Review

The author was able to find a very limited number of literature searches for organizational project management (OPM). As mentioned in section 2.2, the limited publications on OPM Continuum interconnectivity are highly scarce as Teubner (2018) states that academic research on OPM is still in its infancy. Searches were conducted in the three key project management journals namely (1) International Journal of Project Management, (2) Project Management Journal, and Elsevier Science Direct Journals (through Edinburgh Napier University institutional account). Further searches were made for professional literature involved identifying relevant publications from three prominent professional organizations, namely the Association of Project Management (APM), International Project Management Association (IPMA), and Project Management Institute (PMI). Since the author was only able to find a very limited number of literature searches for the OPM, it supports the discovery made through the survey conducted by Mossalam & Arafa (2017) that there is a lack of integration between the OPM continuum of the interrelated domains and organizational practices.

2.8 PMO as the Control Tower

During the past decade, many organizations have implemented a dynamic organizational entity, called the project management office (PMO), to cope with the rising demand for project management competencies, automation of tools and processes excellence (Hill, 2004). These PMOs were established to act as a "control tower" to provide project management oversight, control, supervision, governance, support, and alignment in an effort to achieve organizational effectiveness. The effectiveness of PMO as a control tower relies on its support functions. According to Khalema et al., (2015), the PMO support functions can be broken down into three levels; (1) strategic level, (2) tactical level and (3) operational level. The strategic level focuses on the projects that are undertaken and are in the line of an organization's long-term strategic goals. The tactical level focuses on the integration of projects with the aim of successful completion. And the operational level focuses on the governance of the projects' execution, quality, budget and resource management (Khalema el at., 2015).

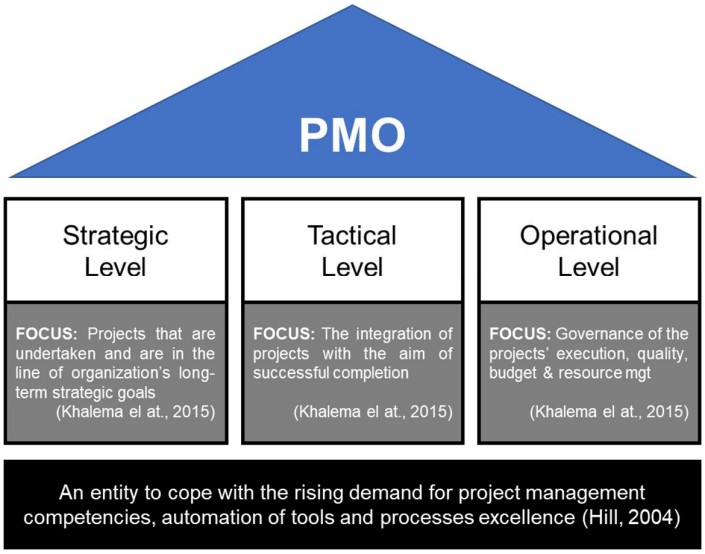

Figure 8 - The PMO Foundation

Source: Author's Own Analysis based on Khalema el at. (2015) & Hill (2004)

While the multitude levels of PMO support provides a supportive arc in a double effort to solve organizational issues and rising demands of project management practice, the dynamism of PMOs has led to its evolution into a variety of forms in response to the organizational specific needs and its cultural factors (Aubry et al., 2007). These forms have sprung into entities within clusters of project management, program management, and portfolio management domains, also known as OPM Continuum, resulting in an establishment of a project management office (PMO), program management office (PgMO) and portfolio management office (PfMO). The systematic establishments of PMO, PgMO and PfMO entities within the clusters of OPM Continuum is evident from the PMO Benchmark Report 2016. This report exhibits that out of the large organizations that were surveyed, 50% had program management offices, 20% had project management offices and 18% had portfolio management offices (PMO Flashmob, 2016).

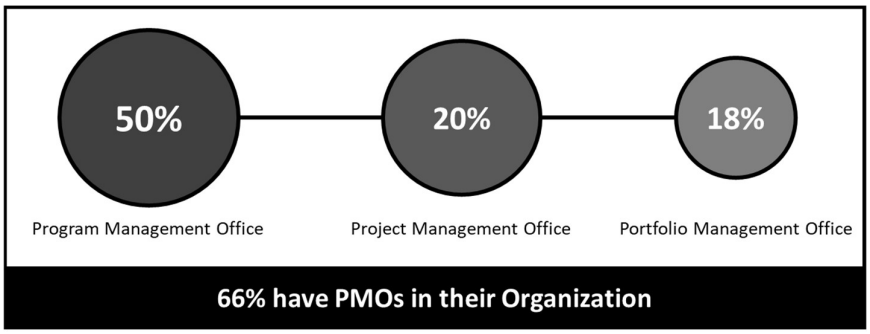

Figure 9 - Types of PMO, PgMO and PfMO Set-ups
Source: PMO Flashmob (2016, p.11)

2.9 PMO as an Isolated Unilateral Entity

The development of PMO, PgMO and PfMO entities opens a whole new window of opportunity in exploring their operational model within the clusters of OPM Continuum and to determine if these entities are of unilateral in nature. In order to do so, it would be wise and necessary to understand the current definition of these entities. The Project Management Institute (PMI, 2017a) defines PMO as an organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques. Levine (2005) further adds that these functions are centralized for standardization and consistency. KPMG (2013) defines PMO as a team, or collection of teams, with the objective of helping an organization to effectively select and delivery projects. Unlike any other organizational department, the PMO simply acts as an overarching department that facilitates a PMO Continuum (people, process and tools) between its organizational divisions in a centralized manner. Therefore, PMO should be viewed as a dynamic entity created to solve

specific issues within the dynamic organization (Aubry et al., 2010). PMO, as a dynamic entity, requires key capabilities to enable effective performance (Killen & Hunt, 2013). Therefore, each entity (PMO, PgMO, and PfMO) should encompass its own set of key capabilities. From the definition of PMO by PMI, an attempt to further define PgMO and PfMO and their key capabilities can be made as follows:

- **Project Management Office (PMO)** is an organizational structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (PMI, 2017a). The ***key capabilities*** of a PMO are:
    - **Project Management, Methodology and Competencies** (Aubry & Hobbs, 2005) – this capability focuses on traditional PMO activities such as development of project management as a practice, development and implementation of standard methodology, development of personnel competency (including training), promoting project management practice within organization, and providing mentoring to project managers.

    - **Project Governance** (Crawford, 2006) – this capability focuses on projects that are required to adhere to government regulations such as the Sarbanes-Oxley Act of 2002 and as a result adhering to Basel II New Accord, an international standard applicable to financial institutions, released on January 2001. PMO project governance also includes adhering to business-as-usual governance; i.e. to

ensure that projects are adhering to the enterprise-wide governance best practices implemented for a business to operate in compliance with corporate and governmental policies.

- **Project Performance** (Aubry & Hobbs, 2005) – this capability focuses on monitoring and controlling project performance. This is managed through the traditional PMO reporting mechanism such as reporting project health check, project status, project risks and project financials to upper management, developing and maintaining project scoreboard through implementation and operation of a project information system.

- **Project Lessons Learned and Audit Management** (Khalema et al., 2015) – this capability focuses on the operational of PMO system consisting of regular project evaluations and operational audit reviews for budgets and resources to ensure that the projects are managed in an efficient manner. This also includes expert knowledge of project management, by serving as a central repository of lessons learned and best practices.

It is evident from the literature that these PMO capabilities are unique and focus unilaterally on the Project Management domain.

- **Program Management Office (PgMO)** is an organizational structure that standardizes the program-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (author's own analysis of extrapolation from PMI's definition). The ***key capabilities*** of a PgMO are:
    - **Program Management** (Hanford, 2004) – this capability focuses on traditional PgMO activities of planning, organizing, directing, and controlling of program resources at three levels in the program management hierarchy; top-level, middle level, and bottom level. At the top of the program management hierarchy are the program sponsor(s) and the program steering committee. At this level, the program manager periodically interfaces to ensure that the program along with its sub-projects progresses and are in alignment with the overall strategic vision. The middle level involves complex coordination with multiple resources and stakeholders while the bottom level involves managing project managers who are assigned to the sub-projects.

    - **Program Integration** (Farmer et al., 2014) – this capability focuses on the criticality of program integration, which is a vital function of a PgMO. This activity ensures seamless integration of multiple projects within a program and develops integration of products and/or services and integrates the activities of multiple functions and

stakeholders (e.g. program sponsors, program managers, project managers, contractors, subcontractors, etc.).

- **Program Governance** (Hanford, 2004) – this capability focuses on PgMO operational governance process which requires a more complex governing structure because they involve fundamental business change and expenditures with significant bottom-line impact. A program can be large enough to span across years and requires three levels of program management hierarchy as part of a governance process to ensure that its program and its sub-projects are managed in an efficient manner.

- **Program Improvement** (Spoko, 2015) – this capability focuses on the PgMO's constant drive to improve its program management competencies by balancing program "Triple Constraints"; i.e. Vision (program vision), Benefits (program benefits) and Blueprint (program future state of capabilities). Due to its complex nature, PgMO continues to find innovative ways to improve its program management capabilities, which becomes a blueprint for ongoing program management effectiveness. These improved capabilities are institutionalized enterprise-wide to provide as a best practice.

It is evident from the literature that these PgMO capabilities are unique and focus unilaterally on Program Management domain.

- **Portfolio Management Office (PfMO)** is an organizational structure that standardizes the portfolio-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (author's own analysis of extrapolation from PMI's definition). The ***key capabilities*** of a PfMO are:
    - **Strategic Management** (Rad & Levin, 2003) – this capability focuses on the strategic alignment of all projects and programs to its organizational strategic objectives, which is a core function of PfMO. Once the strategic alignment is achieved, it cascades downwards to other organizational levels to ensure that its associated activities are in alignment with the organization's core values. These associated activities include resource and financial management. The role of the PfMO is to act as a portfolio gatekeeper to ensure that alignment is met and non-strategic requests are rejected.

    - **Demand Management** (Romano et al., 2016) – this capability focuses on PfMO's proactive approach of addressing strategy while collecting new ideas (future business requests that falls into the PfMO pipeline). These new ideas or business requests may consist of new business strategies and objectives, new business needs coming from all levels of the organization, and new project and/or program requests coming from all departments. These new ideas or business requests are reviewed by the PfMO in collaboration with

the Portfolio Steering Committee to determine the right fit for the organization.

- **Prioritization Management** (Gosenheimer, 2012) – this capability focuses on the prioritization of the approved demand intake in the PfMO pipeline. This is achieved through a prioritization matrix; a weighted-scale model which calculates based on multiple criteria that supports a structured decision-making process. This is a key process in the portfolio management process for PfMO to manage multiple project and program requests through an enterprise-wide agreed and cordial manner.

- **Capacity Management** (Boles, 2009) – this capability focuses on resource capacity that resides in the heart of business management operations level. The key objective of the PfMO is to develop robust resource planning across enterprise-wide for all of its approved projects and programs. This is the most challenging and demanding task for the PfMO as it needs to ensure that approved projects and programs are ready to start and will not experience any resource clog or shortages. PfMO has to collaborate a partnership with key resource managers to ensure on-time availability of resources for a fixed period of project and program duration.

It is evident from the literature that these PfMO capabilities are unique and focus unilaterally on Portfolio Management domain.

Table 1 - Summary of Domains and their Key Capabilities

Source: Author's Own Analysis

Domain	Key Capabilities	Reference
Project Management Office (PMO)	Project Management, Methodology and Competencies	Aubry & Hobbs, 2005
	Project Governance	Crawford, 2006
	Project Performance	Aubry & Hobbs, 2005
	Project Lessons Learned and Audit Management	Khalema et al., 2015
Program Management Office (PgMO)	Program Management	Hanford, 2004
	Program Integration	Farmer et al., 2014
	Program Governance	Hanford, 2004
	Program Improvement	Spoko, 2015
Portfolio Management Office (PfMO)	Strategic Management	Rad & Levin, 2003
	Demand Management	Romano et al., 2016
	Prioritization Management	Gosenheimer, 2012
	Capacity Management	Boles, 2009

In thoroughly reviewing several key works of literature, it is evident that the key capabilities of a PMO, PgMO, and PfMO are highly focused within their respective domain clusters. These capabilities are clearly distinguishable and do not appear to be cross-functional. Furthermore, the PMO Benchmark Report plays a significant role in this research study as it demonstrates the existence of multiple types of PMO, PgMO and PfMO establishments within organizations and their presence signifies that these key capabilities within their respective domains are managed independently by their domain clusters either through multiple entities (multiple PMO, PgMO and PfMO setups running side-by-side in a single organization) or through a single entity (PMO Flashmob, 2016). In either setting, whether it co-exists as multiple entities or simply exists as a single entity, it is

evident that it is operating in a unilateral setting. This unilateral setting raises the first research question:

RQ1 - What are the strategic challenges and opportunities for PMO?

This question seeks to understand the unilateral stance of PMO in a current setting. It seeks to address the role that PMO plays in an organization and the key drivers for its success.

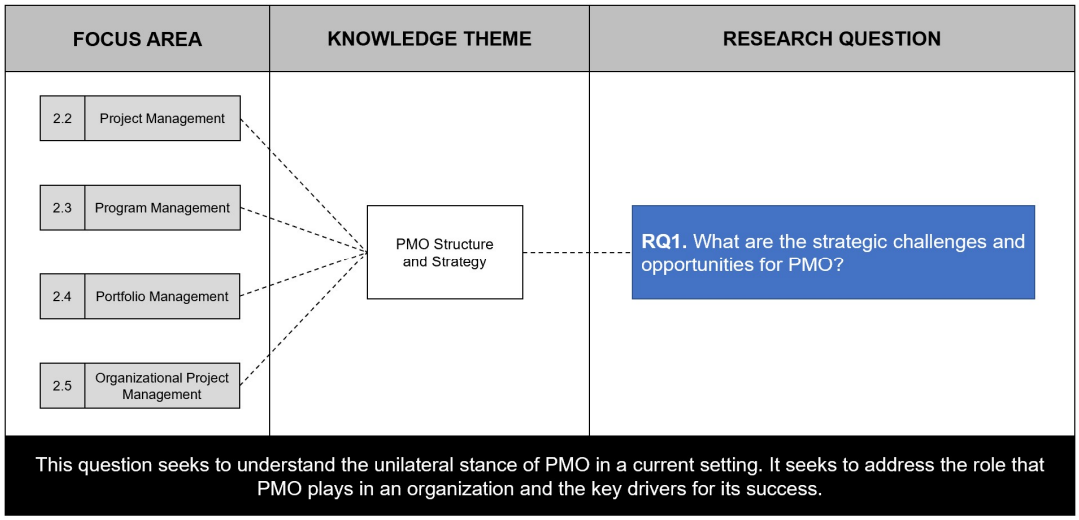

Figure 10 - Summary Map of Research Question 1 (RQ1)

Source: Author's Own Analysis

2.10 PMO – What Went Wrong?

KPMG conducted an industry-wide survey in an attempt to research the cause of staggering project failures and uncovered one of the major causes was the lack of top management involvement and support (Whittaker, 1999). This is an interesting observation since poor project management performance can have dire

consequences and often companies have seen earnings negatively impacted (Levinson, 2006). With a series of downward spiral reports exhibiting yearly poor performances of PMOs from 2013 to 2018 (KPMG, 2013; Kogekar, 2014; Standish Group, 2015; PMI, 2016; PMI, 2017d; PMI, 2018) have raised serious questions on PMO's business value to organizations.

As a result, often, PMO is perceived to be an unnecessary overhead because it fails to demonstrate value to the organization by underperforming services in the area of value-add (KPMG, 2013). There are many factors for disappointment and one of the major factors is that project management techniques have not been innovatively adopted by PMO to prevent disastrous project failures (Kogekar, 2014). As a result, there have been sporadic cases of PMO rise and decline that demonstrates a lack of executive buy-in and support (KPMG, 2013). This pattern continues to emerge as the PMI Pulse of the Profession 2018 Report (PMI, 2018) indicates a drop in PMO establishments worldwide compared to its same report released in 2017 (PMI, 2017d). The question is – what went wrong?

There are several historical factors that contribute to the unfortunate downward-spiral of the PMO. In early 2000, there was a new emerging trend in the development of PfMO in the United Kingdom (UK) apart from the traditional PgMO and PMO. The rise of these entities (PfMO, PgMO, and PMO) produced an interconnectivity gap, which led to the development of the Portfolio, Programme and Project Offices model, also known as P3O model (OGC, 2008). P3O model was developed as a decision-enabling delivery support model through a linked set

of offices consisting of portfolio management, program management, and project management domains. In OGC's publication, several interconnectivity gaps were addressed that led to the blueprint of P3O. These interconnectivity gaps are as follows:

- Lack of continued senior management commitment
- Lack of common language for effective stakeholder engagement
- Lack of quality seamless portfolio, program and project information
- Lack of adoption strategy to manage interconnected domain practices

These interconnectivity gaps are clear indicators of significant knowledge, skills and capability gaps that continue to exists and impact the existence of PMO (Aubry et al., 2010). Ironically, in a recent Gartner Corporate Executive Board (CEB) Quarterly Report, it was indicated that the "traditional" project management skills are no longer sufficient. These skills and capabilities required having cross-functional OPM Continuum domain expertise, which unilateral PMO, PgMO, and PfMO are no longer able to sustain and deliver (Bose, 2018). Therefore, understanding of OPM Continuum and its interrelationship of cross-functional domains is critical and necessary for this research study. This raises the second research question:

RQ2. What are the significant gaps and areas of opportunities for OPM?

This question seeks to understand the organization's understanding of the OPM Continuum and its interconnecting relationships and intertwined capabilities. It

seeks to address key opportunities for and challenges to OPM interconnectivity development in an organization.

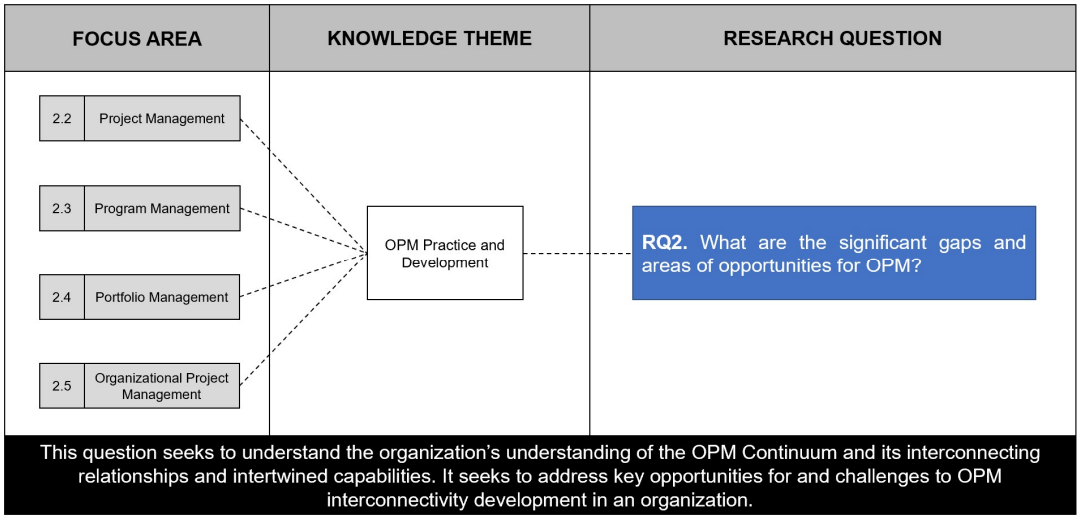

Figure 11 - Summary Map of Research Question 2 (RQ2)

Source: Author's Own Analysis

2.11 PMO & OPM Harmonization

PMO is often perceived to be an unnecessary overhead because it fails to demonstrate value to the organization by underperforming services in the area of value-add (KPMG, 2013). The needs of each organization are unique and therefore PMOs differ from an organization to an organization with configurations that are uniquely befitting to its respective organizational needs. This positions the PMO as a service provider with stakeholders consisting of senior management, portfolio managers, program managers, project managers, and team members. Each of these stakeholders has different needs and expectations from the PMO. Therefore, a successful PMO must be able to understand and address those

demands to generate perceived value for the organization. In other words, it needs to establish a value system and demonstrate its value to the organization (Pinto, 2016). OPM was released by PMI as a strategy execution framework utilizing portfolio management, program management, and project management as well as organizational enabling practices to consistently and predictably deliver organizational strategy producing better performance, better results, and sustainable competitive advantage (PMI, 2013). According to PMI, OPM provides value to an organization by providing business value realization through the integrated OPM Continuum of practice consisting of portfolio management, program management, and project management domains of practice and their capabilities. PMI further states that OPM then measures the capabilities using the OPM3 model and provides a systematic plan and recommendation for improvements through best practices (PMI, 2018). Therefore, harmonizing PMO with OPM value delivery model is essential for organizations to perceived PMO as a value-add rather than overhead. Hence, it is critical to understand as part of this research how organizations conduct a balance harmonization between PMO and OPM Continuum and provide improvement and recommendation approaches. This raises the third research question:

RQ3. What are the possible improvement and recommendation approaches for OPM within a PMO?

This question seeks to understand the organization's efforts of harmonizing PMO's operation with OPM Continuum and its continuous improvement process. It seeks recommendation approaches for PMO to adopt an OPM practice.

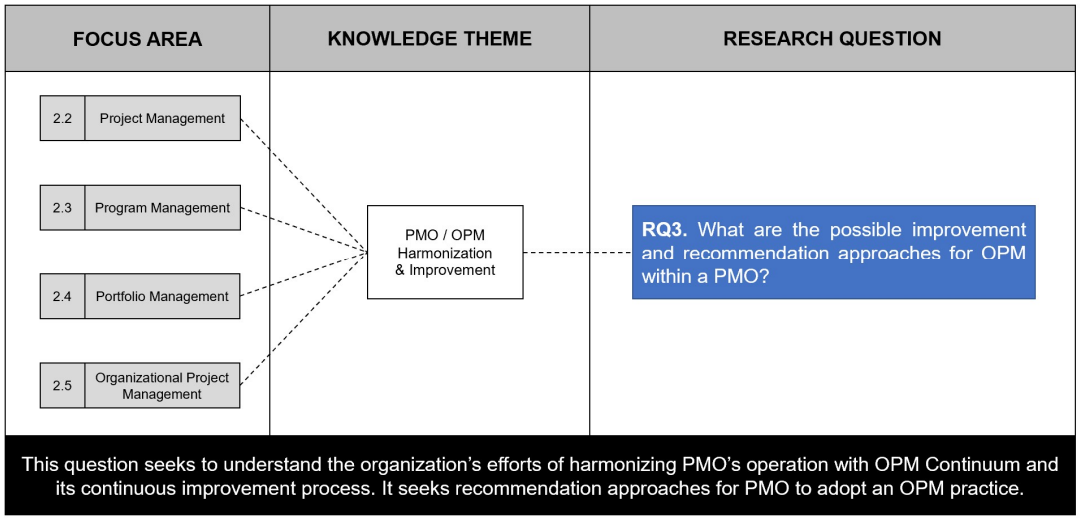

Figure 12 - Summary Map of Research Question 3 (RQ3)

Source: Author's Own Analysis

2.12 Summary

Project management, program management, and portfolio management domains, known as OPM Continuum, have their respective capabilities that are required to manage and operate within their respective clusters of PMO, PgMO and PfMO entities. From the PMO Benchmark Report (PMO Flashmob, 2016), it is evident that these PMO, PgMO and PfMO entities do co-exist side-by-side and it is also evident that these entities exist in a singular disciplinary entity system. In simple terms, these entities are independent of one another and their capabilities are highly focused within their respective domain clusters, are clearly distinguishable and do not appear to be cross-functional, which classifies them as isolated unilateral entities operating in a unilateral setting. The first research question seeks to understand the unilateral stance of PMO in a current setting. It

seeks to address the role that PMO plays in an organization and the key drivers for its success.

The unilateral setting of individual PMO, PgMO and PfMO entities exhibit that their respective capabilities that do not appear to be cross-functional. These project management, program management, and portfolio management domains, known as OPM Continuum, as a result of a unilateral setting, may not have interconnecting relationships and intertwined capabilities. Therefore, there appears an opportunity to understand these relationships. The second research question seeks to understand the organization's understanding of the OPM Continuum and its interconnecting relationships and intertwined capabilities. It seeks to address key opportunities for and challenges to OPM interconnectivity development in an organization.

A gap in the understanding of OPM Continuum and its interconnecting relationships and intertwined capabilities may have been an indirect cause for these entities to have often been perceived to be an unnecessary overhead. In such a situation, it can have a detrimental effect on the existence of these entities as the report has shown a significant drop in PMO establishments worldwide from PMI Pulse of the Profession 2018 Report (PMI, 2018) compared to its same report released in 2017 (PMI, 2017d). This leads to the third question, that seeks to understand the organization's efforts of harmonizing PMO's operation with OPM Continuum and its continuous improvement process. It seeks recommendation approaches for PMO to adopt an OPM practice. The figure below depicts all three research questions linking to the knowledge themes and focus areas.

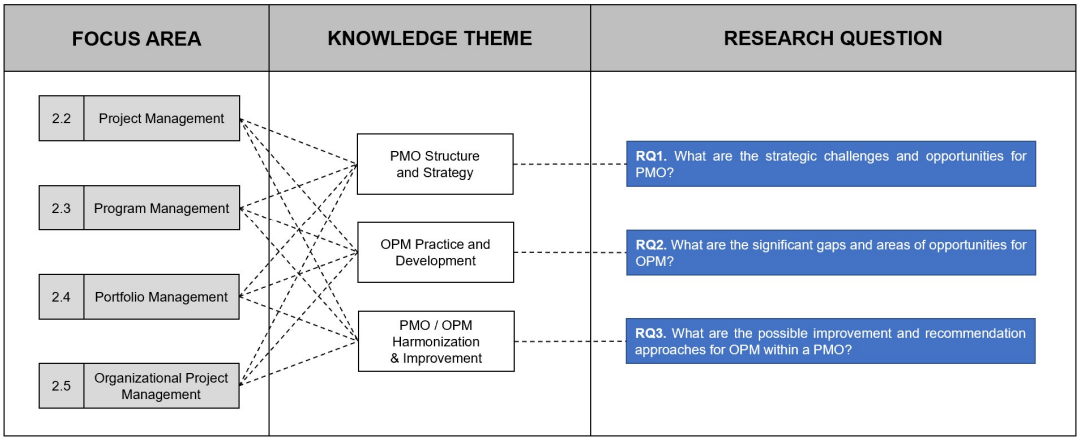

Figure 13 - Summary Map of Research Questions RQ1, RQ2 & RQ3

Source: Author's Own Analysis

The table below provides the literature that influenced the development of the interview questions.

Table 2 - Literature that Influenced Interview Questions

Source: Author's Own Analysis

S/No	Interview Questions	Objectives of the Interview Questions	Literature that Influenced
RQ1	**What are the strategic challenges and opportunities for PMO?**		
1	What structure does your PMO take and why?	These questions seek to understand the unilateral stance of PMO in a current setting. It seeks to address the role that PMO plays in an organization and the key drivers for its success.	PMO Flashmob, 2016
2	What role does your PMO play?		Khalema el at., 2015 & Hyväri, 2016
3	What are the key drivers for your PMO success?		Aubry & Hobbs, 2010
RQ2	**What are the significant gaps and areas of opportunity for OPM?**		
1	What is your organization's definition of understanding of the OPM Continuum?	These questions seek to understand the organization's understanding of the OPM Continuum and its interconnecting relationships and intertwined capabilities. It seeks to address key opportunities for and challenges to OPM interconnectivity development in an organization.	PMI, 2013 & PMI, 2018
2	What do you consider are the key features of the Continuum?		PMI, 2013 & PMI, 2018
3	What are the key opportunities for and challenges to OPM interconnectivity development in your organization?		PMI, 2013 Bose, 2018 PMI, 2018
RQ3	**What are the possible improvement and recommendation approaches for OPM & PMO?**		
1	How do you see your PMO operating harmoniously with OPM Continuum?	These questions seek to understand the organization's efforts of harmonizing PMO's operation with OPM Continuum and its continuous improvement process. It seeks recommendation approaches for PMO to adopt an OPM practice.	PMI, 2013, Pinto, 2016 & PMI, 2018
2	How does your organization measure OPM practice?		PMI, 2013, Pinto, 2016 & PMI, 2018
3	What are your recommendations for PMO to adopt an OPM practice?		PMI, 2013, & PMI, 2018

3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides a detailed review of the research methodology developed for this study and spells out an objective coverage of the research philosophy, ontology, epistemology, and axiology. This chapter carefully examines various research paradigms and focuses on providing a research philosophy and methodology that is deemed appropriate and supports this research study. This is achieved by using Patel (2015) simplistic research paradigm approach as depicted in the figure below.

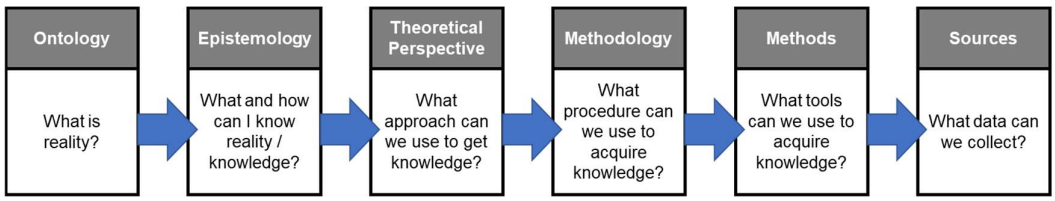

Figure 14 - The Research Paradigm Approach

Source: Patel's adaptation from Hay (2002) p.64 and Crotty (1998)

The research philosophy is positioned to support a subjectivist stance and adopts an interpretivism position, which is in alignment with the "Mode 2 knowledge" (Gibbons et al., 1994). This chapter continues to present its research design and method based on an interpretivist position. As the subject progresses from research philosophy to research approach, this study exhibits its adoption of

an inductive stance as it takes an exploratory approach and aims to investigate through various applicable research methods and generate a research result (Greener, 2008). The chapter continues to further refine the research design to exhibit a qualitative research methodology using exploratory conversational semi-structured interviews for its research data collection. The chapter then touches on the data collection method covering both primary and secondary data collection approaches adopting thematic analysis with reflexive/organic coding style. The chapter continues with ethical considerations and concludes with the research strengths and weaknesses.

3.2 Research Philosophy

Research is done at every level and every day to support an ideological argument. Good research has to be purposeful with clear objective purpose so that the information (data) collected and analyzed is meaningful (Greener, 2008). Information (data) collected is applied to knowledge in various modes. While “Mode 1 knowledge” is created by academics for purely an academic intellectual purpose, “Mode 2 knowledge” fits this research, which is a practical applied knowledge that is created in collaboration with practitioners (Gibbons et al., 1994). In project management type of research study, there are three types of philosophical approaches that are widely discussed; (1) traditional system-based approach, (2) process-based approach and (3) practice-based approach (Blomquist et al., 2010).

According to Blomquist et al. (2010), the traditional system-based research approach is a “structured, mechanistic, top-down, system-model-based approaches to project management that rely on systems design, tools, methods, and procedures. It strives for best practice, guidelines, and forecasting of relevant behavior for practitioners. Some of its results are transferred into textbooks, guidelines, formalized norms, and expectations, such as the various bodies of knowledge currently on the market” (Blomquist et al., 2010). The disadvantage of a traditional-system research approach is that it is a highly model-based driven and provides more make-believe statements on project management issues. It focuses on research that starts with overall models and concepts from which action is derived and it lacks a bottom-up approach.

Blomquist et al. (2010) continue to explore that there is another research approach known as a process-based research approach. Process-based research focuses primarily on the relationship between past, present, and future when analyzing a project’s processes. According to Söderlund (2004), researching into projects is thus more a matter of looking and trying to capture the unique, complex and time-limited processes of interaction, organization, and management. However, the disadvantage of a process-based research approach is that the process studies focus on people in charge, thus sacrificing a bottom-up analysis of what individual actors actually do when they work on projects.

Unlike traditional-system and process-based research approaches, practice-based research approach begins with individual actions and asks what overall models and concepts result from those actions. It focuses on the actors

and their activities rather than on models and their application (Schatzki et al., 2001). Schatzki et al. (2001) further express that practice is an “enact by people” and a traditional study of system-model-based approaches are not adequate without understanding the behavioral sciences surrounding practices as we need to first look at what people do within the context of projects (practice) before we can start our quest to understand projects themselves (Blomquist et al., 2010). The practice-based research approach has had a great impact on the innovative research as the focus on practice is essential, as Bourdieu (1990) argued “to take seriously the work and the talk of the practitioners themselves”. These three types of project management research approaches are depicted in the table below.

Table 3 - Three Approaches to Project Management Research

Source: Author’s Own Analysis Adapted from Blomquist et al. (2010)

Philosophical Approach	Focus	Empirical Approach	Ontology	Epistemology	Axiology	Methodology	Data Collection
Traditional System	Focuses on rational structures and how they can be best managed	Top-down	Objectivist	Positivist	Deductive	Quantitative Method	Survey
Process	Focuses on describing the process and how the process relates to the structure	Past, Present, Future	Objectivist / Subjectivist	Inter-subjectivist	Deductive / Inductive	Quantitative Method / Qualitative Method	Survey / Interview
Practice	**Focuses on describing the process through the identification of local situated actions**	**Bottom- up**	**Subjectivist**	**Interpretivist**	**Inductive**	**Qualitative Method**	**Interview**

In practice-based research, a dynamic setting for action is created in the local arena where knowledge and action come together in practice (Blomquist et al., 2010). The dynamism of organizational project management (OPM) continuum’s interconnecting practices encompassing project management, program management, and portfolio management will require not only a traditional-system literature review but a dynamic practice-based research

approach to fully understand how it functions in a multi-dimensional world and their interconnected relationships. In this argument, this research adopts the practice-based philosophical approach as it is best suited for this study.

3.2.1 Ontology

Ontology pertains to the researcher's view of the nature of reality or being (Saunders at al., 2009). In Blomquist et al. (2010) project management research philosophical model, the ontology branches out into Objectivist and Subjectivist paradigms. Objectivist is an ontological position that asserts that social phenomena and their meanings have an existence that is independent of social actors (Bryman, 2016). Contrary to that, Subjectivist (also known as Constructivist) is an ontological position that asserts that social phenomena and their meanings are continually being accomplished by social actors (Bryman, 2016). In other words, it is a continual process of social interactions through which social phenomena are in a constant state of change (Saunders at al., 2009). Geertz (1973) suggests that theories built without drawing upon the foundation of actual work of project managers may be irrelevant or, in the worst case, erroneous. Therefore, it is critical that, in order to build an understanding that is more strongly underpinned, project management research should take a more practice-based philosophical approach (Blomquist et al., 2010). It offers a social phenomenon where social actors are practitioners and their interactions contribute to the social reality and it is dynamic where knowledge and action come together in practice and, as a result, it is constantly changing the state of social reality (Saunders at

al., 2009). On this argument, a subjectivist position is adopted which aligns with Blomquist et al. (2010) practice-based philosophical approach.

3.2.2 Epistemology

Epistemology pertains to the researcher's view regarding what constitutes acceptable knowledge in a field of study (Saunders at al., 2009). In Blomquist et al. (2010) project management research philosophical model, the epistemology branches out into Positivist, Inter-subjectivist and Interpretivist paradigms. Positivism is an epistemological position that advocates working with an observable social reality (Saunders at al., 2009). Bryman (2016) further advocates the application of the methods of natural sciences to the study of social reality and beyond. Positivist states that only phenomena which we can know through our senses (sight, smell, hearing, touch, taste) can really produce "knowledge". It promotes the idea of experimentation and testing to prove or disprove hypotheses (deductive) and then generates new theory by putting facts together to generate laws or principles (Greener, 2008). Contrary to that, Interpretivism is an epistemological position that advocates the necessity to understand differences between humans in their role as social actors (Saunders at al., 2009). Interpretivist promotes the idea that subjective thoughts and ideas are valid in research. Interpretivist aims to see the world through the eyes of the social actors (practitioners) being studied, allowing them multiple perspectives of reality (Greener, 2008). Inter-subjectivism, on the other hand, is a combination of positivist and interpretivist with emphasis on subjectivism, which asserts that

entities are created from the perceptions and consequent actions of those social actors responsible for their creation (Saunders at al., 2009).

Project management type of research study has recently adopted a more practice-based philosophical approach where the focus is on the social actors (practitioners) and their activities rather than on models and their application (Blomquist et al., 2010). This is in alignment with the Interpretivist position that advocates the researcher to focus on social actors (practitioners) with the emphasis of understanding the meanings that the respondents ascribe to various phenomena (Saunders at al., 2009). Bourdieu (1990) further argues that taking the project management type of research work seriously by talking to the practitioners in a practice-based approach has contributed great impact on innovative research in the area of strategy. Interaction with the practitioners (social actors) is a valuable approach in practice-based research and it has a historical underpinning. It has been supported and encouraged through the philosophical work of Max Weber (1864-1920) who described sociology as a social science "which attempts the interpretive understanding of social action in order to arrive at a causal explanation of its course and effects" (Weber, 1947, p.88). On this argument, this research supports the adoption of an interpretivist position.

3.2.3 Axiology

Axiology pertains to the researcher's view of the role of values in research (Saunders at al., 2009). The role of a researcher's view plays an important role in

the research as it demonstrates the researcher's axiological skills throughout the stages of the research and exhibits how the researcher conducts research and places value in a research finding (Dudovskiy, 2018). In Blomquist et al. (2010) project management research philosophical model, the axiology branches out into Deductive, Inductive and Iterative approaches. Deductive positions that the researcher produces hypotheses from the theory and proceeds to test the theory (Greener, 2008). Bryman (2016) further adds that the hypotheses must be subjected to empirical scrutiny. Contrary to that, Inductive positions that theory is the outcome of the research by drawing inferences out of observations made by social actors (practitioners) (Bryman, 2016). To be iterative involves a weaving back and forth between data and theory, often evident in a grounded theory approach (Bryman, 2016). From an axiological point of view, values that are generated by researchers differ from deductive, inductive and iterative approaches. In a deductive approach, the researcher values data gathering through anonymous questionnaire critical, which is needed to support the hypotheses that will be subjected to empirical scrutiny (Saunders at al., 2009). Contrary to that, in inductive approach, the researcher values personal interaction with the respondents highly appropriate as the inductive approach allows the researcher to manage small sample of subjects in a personalized interactive setting (Saunders at al., 2009). In an iterative approach, the researcher values collecting further data in order to establish the conditions in which the theory will nor will not hold (Bryman, 2016).

According to Blomquist et al. (2010), traditional-system and process-based research approaches have come under scrutiny for a project management type of

research study. The two approaches, traditional-system and process-based, don't adhere to the ground rules of empirical research as suggested by Geertz (1973). According to Geertz (1973), it is necessary to first look into what project managers (social actors) do before we can understand what project management (research) is. This argument confirms the values required for a project management type of research study and aligns to Blomquist et al. (2010) practice-based philosophical approach, which takes an inductive approach that focuses on the social actors' (practitioners) observations and develops the outcome of the research. This positions the research as value bound and the researcher becomes part of what is being researched and cannot be separated, therefore, it will be subjective (Saunders at al., 2009). This value aligns with the interpretivist paradigm, which promotes the idea that subjective thoughts and ideas are valid in an interpretivist research model (Greener, 2008). On this argument, this research supports the interpretivist value setting with the adoption of a personalized approach to managing a small sample of subjects in a personalized interactive setting (exploratory conversational semi-structured interviews).

3.3 Research Design and Method

This research supports Blomquist et al. (2010) practice-based philosophical approach. From an ontological position, a subjectivist stance is adopted in alignment to the practice-based philosophical approach. From an epistemological position, an interpretivist stance is adopted, which is in alignment with "Mode 2 knowledge" (Gibbons et al., 1994) and inductive approach. Nowotny et al. (2003)

further state in “Mode 2” revisited article that the researcher’s relationship to the research setting is more immersed and reflexive, and it cannot be encoded in a traditional form of scholarly publication. It requires reflexive/organic coding technique giving the researcher the flexibility to reflect on how the data is growing and developing (Braun & Clarke, 2006). This provides the researcher with an opportunity to relate the findings as a practitioner rather than the “Mode 1” traditional old paradigm of scientific discovery that is application-oriented rather than practice-oriented. Braun & Clarke (2006) Reflexive/Organic Coding Style (Six-Stage Process) is explained in much detail in Section 3.7, Figure 17, p.84. Coghlan & Brydon-Miller (2014) argues that “Mode 1” research is more adaptable for the quantitative research setting as it requires logic, measurement, and consistency of prediction disciplinary whereas “Mode 2” research is more adaptable for the qualitative research setting as it requires experimental, practice-based, and collaborative disciplinary.

From an ontological position, a subjectivist stance is adopted. From an epistemological position, an interpretivist stance is adopted, which is in alignment with an inductive approach. From the axiological position, this research supports the interpretivist value setting with the adoption of a personalized approach to managing a small sample of subjects in a personalized interactive setting (exploratory conversational semi-structured interviews). In alignment with Blomquist et al. (2010) practice-based philosophical approach, qualitative research is adopted for this study. Cicmil (2006) proposes that project research would be ideally suited by a qualitative approach with a critical interpretive approach that might “generate alternative understandings of what goes on in

project practice and how practitioners participate in and manage complex organizational arrangements".

3.4 Qualitative Method versus Quantitative Method

As mentioned in Section 3.2 Research Philosophy, this research adopts Blomquist et al. (2010) practice-based philosophical approach as it is best suited for this study. According to Flick (2009), a qualitative research approach fits best for a project management type of research study and should meet the following four proposed conditions:

(a) **Proposed Condition 1:** Appropriateness of methods and theories.

(b) **Proposed Condition 2:** Differing perspectives of the participants and their diversity.

(c) **Proposed Condition 3:** Reflexivity of the author and the research as part of the process of knowledge production.

(d) **Proposed Condition 4:** Flexibility with a variety of approaches and methods.

Reflecting Flick (2009) proposed conditions, the following four active conditions were developed for this research study:

(a) **Active Condition 1:** Suitability of ideas, inclusion, and exclusion of certain formats for empirical investigation in a given organizational project management (OPM) environment.

- The participants (interviewees) had the freedom to express their ideas and were not restricted to any inclusion and exclusion conditions that would result in any form of complexity to the overall research study.

(b) **Active Condition 2:** OPM Continuum practices and their leadership opinions in a diverse industrial setup.

- The participants (interviewees) were not limited to any fixed industrial setup or geographical limitations.

(c) **Active Condition 3:** Sensitivity of any given subject that may require the author to carefully reflect through observations on the impressions, irritations, feelings, and emotions during the research.

- The researcher (interviewer) was cognizant and observant to any sensitivity atmosphere that created an uncomfortable or toxic environment.

(d) **Active Condition 4:** Limited exposure with practitioners that may require flexibility in the research approaches and methods.

- The researcher (interviewer) invited limited practitioners ranging from project managers, program managers, portfolio managers to PMO/OPM subject matter experts in an exploratory conversational semi-structured interview setting and created an atmosphere of the flexible environmental setting.

The above four active conditions are depicted in the table below:

Table 4 - Flick's Qualitative Research Conditions

Source: Author's Own Analysis Adapted from Flick (2009, p.14-17)

Research Type	Condition 1	Condition 2	Condition 3	Condition 4	Condition Type
Flick (2009)	Appropriateness of methods and theories	Differing perspectives of the participants and their diversity	Reflexivity of the author and the research as part of the process knowledge production	Flexibility with the variety of approaches and methods	Proposed Condition
Researcher	Suitability of ideas, inclusion and exclusion of certain formats for empirical investigation in a given OPM environment	OPM Continuum practices and their leadership opinions in a diverse industrial setup	Sensitivity of any given subject that may require the author to carefully reflect through observations on the impressions, irritations, feelings, and emotions during the research	Limited exposure with practitioners that may require flexibility in the research approaches and methods	Active Condition

A quantitative method would not be suitable for this research based on the following arguments:

- The researcher has opted for "Mode 2" research approach, which requires reflexive/organic coding technique as the research setting is more immersed and reflexive, and it cannot be encoded in a traditional form of scholarly publication (Nowotny et al., 2003).
- "Mode 2" research is more adaptable for the qualitative research setting as it requires experimental, practice-based, and collaborative disciplinary whereas "Mode 1" research is more adaptable for the quantitative research setting as it requires logic, measurement, and consistency of prediction disciplinary (Coghlan & Brydon-Miller, 2014).
- This research meets four qualitative proposed conditions and active conditions that are best suited for a practice-based philosophical approach as proposed by Flick (2009).

Since quantitative methods are best suited comparing data systematically, making generalizations to the whole population, or testing theories with a hypothesis. This is particularly so when the need to compare or generalize information extensively within and from a specific population or between different populations (some of them configured within particular geographical or socio-spatial units - like countries, regions, etc). This is not the case with this research. This research requires a practice-based reflexive approach in an exploratory mode. It requires participants with highly specialized project management office (PMO) and organizational project management (OPM) expertise to be interviewed in an exploratory conversational semi-structured interview, which makes the qualitative method the best suited for this research. In this argument, the researcher opts in favor of a qualitative method instead of a quantitative method.

3.5 Data Collection

According to Blomquist et al. (2010), the practice-based philosophical approach is a bottom-up type of an approach where the data collection strategy is to talk to the practitioners in a personalized interactive conversational setting allowing the researcher to explore micro-activities, the real “action” within a projectized environment. Gall et al. (2003) elaborate that conversational interview occurs in a natural interactive setting, typically one that occurs as part of ongoing participant observation fieldwork. Gambrell et al. (1996) further argue that conversational interview flexibly probes for more in-depth understanding and authentic insights, which provides a best suited bottom-up approach as suggested

by Blomquist et al. (2010). However, this research entails participants who are practitioners consisting of project managers, program managers, portfolio managers and project management office (PMO) and organizational project management (OPM) subject matter experts (SME) that are available for a limited single interview session. According to Bernard (2006), a semi-structured interview is best suited for situations when an interviewer won't get more than one chance to interview someone. Therefore, in this context, the best data collection format suited for this research study would be a conversational semi-structured interview. Based on this argument, the qualitative research methodology for this study adopts an exploratory conversational semi-structured interview for its research data collection approach.

Data collection for both the pilot study and the main study was performed through a 60-minute exploratory conversational semi-structured interview. A personalized interview setting was established whereby the participants (interviewees) were provided an atmosphere of a conversational environment through a series of guided questions. The research questions were categorized into project management knowledge themes that would provide the participants with a thematic conversational setting. This set-up was in alignment with the thematic analysis with reflexive/organic coding technique giving the researcher the flexibility to reflect on how the data is growing and developing (Braun & Clarke, 2006). The participants were provided with the opportunity to answer the research question in an exploratory method, whereby the participants were given the freedom to relate to the behavioral sciences surrounding PMO and OPM practices

when answering the research question in alignment to Blomquist et al. (2010) practice-based research bottom-up approach.

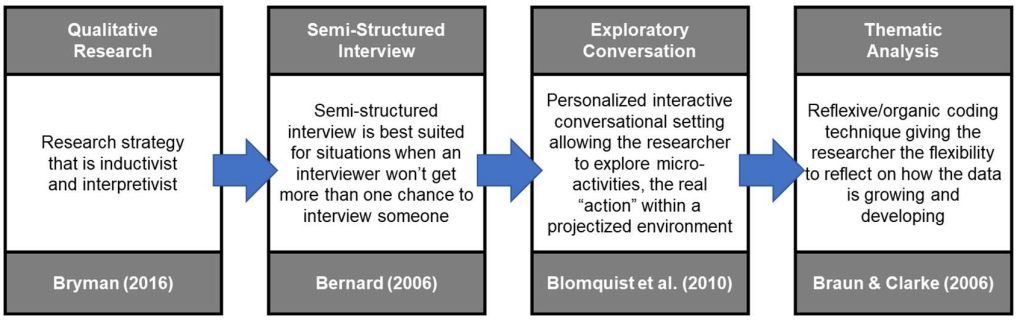

Figure 15 - Qualitative Research Data Collection Approach

Source: Author's Own Analysis Adapted from Bryman (2016), Bernard (2006), Blomquist et al. (2010) and Braun & Clarke (2006).

This data collection method called for highly specialized subject matter experts (SME) in the field PMO and OPM. Due to the limited availability of SME in this specialized field, the researcher sought on a wider scale reaching out to experts in both worlds of practice and academia. Several numbers of Ph.D. were sought who were thought leaders in PMO and OPM space. These participants were highly active in both the world of academia and consulting. In a balanced effort, practitioners were also sought carefully that were familiar with PMO and OPM settings (knowledge). The researcher reached out to several practitioners in project management, program management and portfolio management on a wider demographic setting. The table below depicts the participant's expertise and demographic details: (for further details, please see Section 4.4, Table 13, p.102)

Table 5 - Main Research Participant Summary Report

Source: Author's Own Analysis

Number of Interviewee	Subject Matter Expert (SME): Academia & Consulting	Practitioner: PMO, Portfolio Manager (PfM), Program Manager (PgM) & Project Manager (PM)	Demographic		
			USA	Europe	Latin America
15	7	8	5	8	2

3.6 Sampling

Sampling is the process of selecting a few respondents (a sample) from a bigger group (the sampling population) to become the basis for estimating the prevalence of information of interest to you (Kumar, 2011). Bryman (2016) further adds that sampling is a segment of the population that is selected for investigation. Saunders at al. (2009) elaborates that there are two types of sampling techniques; (1) probability sampling and (2) non-probability sampling. Probability sampling is often associated with survey and experimental research strategies while non-probability sampling is often associated with samples that are selected based on the subjective judgment of the researcher, rather than random selection (Saunders at al., 2009). While there are several non-probability approaches, expert sampling is a widely used method when a researcher needs to glean knowledge from participants (interviewees) that have specialized expertise. Therefore, it would be necessary to understand what expert sampling is. Expert sampling, a branch of purposive sampling, is a technique where a researcher selects respondents that have expertise in the field of the research that is being carried out. The sample

size is relatively small and is highly focused on special interest (Kumar, 2011). The qualitative research sampling approach is depicted in the figure below:

Figure 16 - Qualitative Research Sampling Approach

Source: Author's Own Analysis Adapted from Kumar (2011)

This study adopts expert sampling, a type of purposive sampling technique from the family of non-probability sampling technique since it requires participants with highly specialized project management office (PMO) and organizational project management (OPM) expertise. Expert sampling technique was adopted for both the pilot study and the main study consisting of selective sample units with specialized knowledge. Since the research questions dealt with PMO and OPM, the research called for a limited sample of highly specialized participants who were not only required to know PMO and OPM but were required to be able to differentiate and answer to research questions appropriately. This was a critical success factor it was discovered during the pilot study that inadequate knowledge of both PMO and OPM led to insufficient data for in-depth analysis (refer to Section 3.8 for more details). Therefore, subject matter experts (SME) in PMO and OPM were deemed required. Hence, several invites were sent out specifically to participants who knew this subject thoroughly as it was considered a critical success factor for the main research study.

3.7 Data Analysis

Qualitative data analysis is the process of coding and analyzing data that is not quantifiable (Saunders at al., 2009). “Coding” is not just merely technical preparatory work, it is an “analysis” by itself (Miles & Huberman, 1994). Therefore, the word “coding” will be assumed synonymously as “analysis” throughout this chapter. While there are several data analysis approaches, thematic analysis is a widely used method in qualitative research (Braun & Clarke, 2006). In this context, this chapter deals completely with thematic analysis. Therefore, it would be necessary to understand what thematic analysis is. Thematic analysis is a qualitative data analysis method of identifying, analyzing and extracting key themes from a data set (Bryman, 2016). There are three predominant frameworks to thematic analysis; (1) “Small Q”, (2) “Medium Q” and (3) “Big Q” (Kidder & Fine, 1987; Braun & Clarke, 2006). “Small Q” is a qualitative data analysis method but the underlying logic is positivist. It comprises of a top-down empirical approach with a deductive research approach. The analysis is of a discovery process whereby the themes already exists in the dataset (Kidder & Fine, 1987). “Medium Q” is a qualitative data analysis method but the underlying logic is inter-subjectivist.

It comprises of a mixed-method empirical approach with a deductive/inductive research approach. The analysis is of a semi-discovery process (Braun & Clarke, 2006). “Big Q” is a qualitative data analysis method and the underlying logic is interpretivist. It comprises of a bottom-up empirical approach with an inductive research approach. The analysis is of a creative process whereby

the analysis is a result of engagement between the dataset and the researcher's interpretative and analytical skills (Kidder & Fine, 1987). Thematic analysis can be broken down into three types of thematic data analysis approaches; (1) coding reliability, (2) codebook and (3) reflexive/organic, whereby coding reliability relates to "Small Q" framework, codebook relates to "Medium Q" framework and reflexive/organic relates to "Big Q" framework (Braun & Clarke, 2006). Thematic analysis approach mapping is depicted in the table below:

Table 6 - Thematic Analysis Approach

Source: Author's Own Analysis Adapted from Kidder & Fine (1987) and Braun & Clarke (2006)

Thematic Analysis Approach	Focus	Framework	Empirical Approach	Research Approach	Data Collection Method & Logic
Coding Reliability	Application of qualitative approach within a positivist paradigm	Small Q	Top-Down	Deductive	Qualitative data is collected and analyzed but underlying logic is positivist
Codebook	Application of qualitative approach within a inter-subjectivist paradigm	Medium Q	Mix-Method	Deductive / Inductive	Qualitative data is collected and analyzed but underlying logic is inter-subjectivist
Reflexive/Organic	**The application of qualitative approach within a interpretivist paradigm**	**Big Q**	**Bottom-Up**	**Inductive**	**Qualitative data is collected and analyzed and underlying logic is interpretivist**

This research study adopts thematic analysis with reflexive/organic coding style in alignment with Blomquist et al. (2010) practice-based philosophical bottom-up approach whereby the coding has a fluid and open process giving the researcher the flexibility to reflect on how the data is growing and developing. It provides several benefits to qualitative research, such as depth in engagement open-endedness, exploratory, fluidity, and flexibility. The advantage is that the coding can be changed throughout the coding process as the researcher can rename, split, collapse or combine them with other codes. The aim is to reflect how the researcher is conceptualizing the data and how that conceptualization is shifting, growing, developing and evolving. Unlike other coding strategies that

focus on the accuracy or reliability of the data, reflexive/organic coding style focuses is on the interpretivism and depth of the engagement throughout the coding process of development and understanding of the data (Braun & Clarke, 2006).

Data coding and analysis was performed through a six-stage process as in accordance with thematic analysis reflexive/organic coding style (Braun & Clarke, 2006). While the data corpus consisted of the entire data collected for this research (data collected from the literature review, interviews, media, journals, websites, etc.), however, very specific data set was identified by particular analytical interest area (PMO and OPM) that was deemed most relevant for this research study. Only from this highly relevant data set, extracts were made (Braun & Clarke, 2006). Themes were identified in an inductive "bottom-up" method (Frith & Gleeson, 2004) in which the process of coding of the data was carried out without the traditional legislative style to fit into the preexisting coding frame (Braun & Clarke, 2006). The interview data was read and re-read multiple times to identify themes (patterns of the meaning) that were related to PMO/OPM. This process involved searching themes across the data set that are often clustered together and to extract in a flexible interpretive manner. This flexible coding style ensured that the thematic analysis process was a purely data-driven exercise and was in alignment with Blomquist et al. (2010) practice-based philosophical bottom-up approach. The six-stage process is depicted in the figure below:

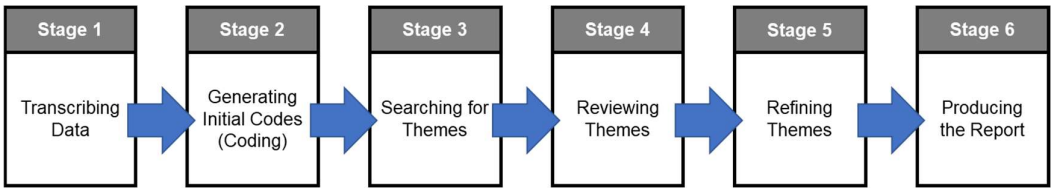

Figure 17 - The Six-Stage Process of Reflexive/Organic Coding Style

Source: Author's Own Analysis Adapted from Braun & Clarke (2006)

3.7.1 Data Analysis Process

Data coding and analysis was performed using Braun & Clarke (2006) Six-Stage Process of Reflexive/Organic Coding Style. A detailed step-by-step description of the six-stage process is explained herewith:

- **Stage 1:** Transcribing Data
  - According to Braun & Clarke (2006), the first step consists of familiarizing oneself with the data. The verbal data was collected via an exploratory conversational semi-structured interview. The interview data were transcribed into a written form. It was read and actively re-read multiple times familiarizing and searching for meanings and patterns that were related to PMO/OPM.
- **Stage 2:** Generating Initial Codes (Coding)
  - According to Braun & Clarke (2006), the second step consists of generating initial codes. The raw data was transcribed into meaningful information through the process of coding. The

process of coding of the data was carried out without the traditional legislative style to fit into a preexisting coding frame. This provided flexibility and fluidity for the researcher to rename, split, collapse or combine them with other codes.

- **Stage 3:** Searching for Themes
    - According to Braun & Clarke (2006), the third step consists of searching for themes. After the data was coded and collated, it was identified into latent themes by reviewing the data three-dimensionally through the process of conceptualizing, shaping, and interpreting the data. In this step, the themes were assigned to the first level known as the “Knowledge Theme”. This was a necessary step as the themes had to have a meaning and, therefore, they were constantly aligned with the research questions in a recursive process of going back and forth to ensure a grounding relationship is intact between the themes and the research questions that drive the project.
- **Stage 4:** Reviewing Themes
    - According to Braun & Clarke (2006), the fourth step consists of reviewing the themes. This stage involves the refinement of the themes in a two-level process. In the first level, all the coded and collated data extracts for each theme were closely analyzed for a coherent and meaningful pattern and were assigned to the “Knowledge Theme”. Data extracts that did fit were moved into

the second level known as the “Sub-Theme” while data extracts that didn’t fit were reviewed to determine if they were problematic and should be discarded. This iterative process continued until all further reviewing processes exhausted.

- **Stage 5:** Refining Themes
    - According to Braun & Clarke (2006), the fifth step consists of refining themes. This stage involved refining and locking down the themes. At this stage, the data were satisfactorily coded, collated, identified into latent themes, and analyzed to fit meaningful patterns of themes (able to identify as a story). This positioned the researcher as a storyteller who has been actively engaged in interpreting the data through the lens of his expertise whereby it requires deep thinking, focus engagement, and interpretative work. The themes went through several iterations of expansion and collapse until a level of meaningful analysis was able to be drawn out of it and were assigned to the third and final level known as the “Main Theme”.
- **Stage 6:** Producing the Report
    - According to Braun & Clarke (2006), the sixth and final step consists of producing a report. At this stage, this research had a set of fully worked-out themes. The report provides a thematic analysis breakdown of the alignment of the codes to the knowledge themes and focus areas linking to the research

questions as follows: (1) PMO Structure and Strategy, (2) OPM Practice and Development, and (3) PMO/OPM Harmonization and Improvement. A compelling story of the thematic analysis was developed and a complete write-up of the analysis was provided in chapter 4 through the use of the identified themes that were strongly rooted in the data.

Various qualitative analytical methods were reviewed and considered, ranging from conversation analysis, interpretative phenomenological analysis, discourse analysis to narrative analysis, however, thematic analysis was deemed most suitable for this project because of its flexibility and its compatibility with subjectivist or constructivist paradigm (Braun & Clarke, 2006). Moreover, thematic analysis with reflexive/organic coding style is highly appropriate due to its alignment with Blomquist et al. (2010) practice-based philosophical bottom-up approach.

3.8 Ethical Considerations

In any successful research study, ethical considerations play a significant role in the protection of the participants. In order to develop good ethical practice, it is beneficial to understand ethical theories in order to find appropriate ethical ways in dealing with moral choices and dilemmas (Greener, 2008). Therefore, it will be beneficial to review its definition. Saunders at al. (2009) defines research ethics as the appropriateness of the researcher's behavior in relation to the rights

of those who become the subject of a research project, or who are affected by it. Kumar (2011) further elaborates by encompassing ethics as part of ethical practice, defining it as a professional practice undertaken in accordance with the principles of accepted codes of conduct for a given profession or group. Bryman (2016) further stresses that while ethics in social research may differ in their codes of conduct by given professions or groups, however, fundamentally the ethics are grounded and remains generally the same. Allen (2011) identifies four specific values that supports the code of conducts according to Project Management Institute's (PMI) Code of Ethics and Professional Conduct; which are (1) Responsibility, (2) Fairness, (3) Honesty and (4) Respect, and suggests that project management research should be part of these ethical values and considerations. Flinders (1992) conjugates the relationship of ethical values with ethical considerations by stressing that good ethical values can only be met through sound ethical consideration. These ethical considerations are (1) Informed Consent, (2) Harm and Risk, (3) Honesty and Trust, and (4) Privacy, Confidentiality, and Anonymity. Flinders (1992) continues to suggests that ethical considerations can be carried out through any of the four ethical theories in his ethical framework deemed appropriately suitable for a research study as depicted in the table below:

Table 7 - Flinders Ethical Frameworks and Aspects of Research

Source: Miles & Huberman (1994, p.289-290)

Type	Utilitarian	Deontological	Relational	Ecological
Recruitment	Informed Consent	Reciprocity	Collaboration	Cultural Sensitivity
Fieldwork	Avoidance of Harm	Avoidance of Wrong	Avoidance of Imposition	Avoidance of Detachment
Reporting	Confidentiality	Fairness	Confirmation	Responsive Communication

This research study adopts Flinders (1992) Utilitarian theorist's ethics approach in a traditional "scientific" stance in alignment with Allen's (2011) four specific values that supports the code of conducts in accordance to PMI's Code of Ethics and Professional Conduct and maps Flinders (1992) ethical considerations to PMI's Code of Ethics and Professional Conduct (Allen, 2011) as depicted in the table below:

Table 8 - Summary of Ethical Considerations Mapping

Source: Author's Own Analysis Adapted from Miles & Huberman (1994, p.291-293) and Allen (2011, p.14)

Type	Ethical Consideration 1	Ethical Consideration 2	Ethical Consideration 3	Ethical Consideration 4
PMI Code of Ethics	Responsibility	Fairness	Honesty	Respect
Flinders Ethical Considerations	Informed Consent	Harm & Risks	Honesty & Trust	Privacy, Confidentiality & Anonymity

This research study ensured that the recruitment consisted of an ***informed consent***, the fieldwork ensured ***avoidance of any harm*** to the participants (interviewees) and the reporting was dealt with strict ***confidentiality*** in alignment with Flinders (1992) Utilitarian theory (as depicted in Figure 24) and the research developed the following four areas of ethical consideration that maps to PMI's Code of Ethics and Professional Conduct (Allen, 2011) as depicted in Figure 25:

(1) **Informed Consent:** Each interviewee who participated in the exploratory conversational semi-structured interview was requested to read and sign an informed consent form prior to participating with the promise of their complete anonymity.

(2) **Harm and Risk:** This research did not aim with an intent to hurt anyone. Therefore, during the interview, the participants (interviewees) were provided with absolute freedom and were allowed to withdraw, in the event, if they felt that the session was creating an atmosphere of discomfort, hostility, conflict of interest, risk or fear towards the security of their employment. As a result, if the participants decided to discontinue the session, there was no compulsion to complete the interview session. This stance was strictly positioned in consideration to avoid any harm inflicted on the participants.

(3) **Honesty and Trust:** The success of this research lies in the honesty of the researcher and to build a relationship of trustworthiness with the participant. The researcher had no intent to mislead the participant and ensured that the response from the session is not misinterpreted. The researcher counter-checked the response with the participants during the interview to ensure that there was a definitive clear understanding and interpretation of the response during the session.

(4) **Privacy, Confidentiality, and Anonymity:** The researcher made a clear understanding of the privacy, confidentiality, and anonymity over the identity of the participants. As mentioned, a proper consent form was developed and was provided to the participants for their signature as evidence of their approval. Signed copies were provided to the participants for their record purposes.

The researcher ensured that this research is in compliance with the Edinburgh Napier University's (ENU) Code of Practice on Research Integrity (ENU, 2013). A proper approval process was met by the Business School Research Integrity Committee and the approval was awarded to proceed with both the pilot study and the main research study.

3.9 Pilot Study

A pilot study is a small-scale study that is undertaken before executing a large study or the main study (Bernard 2006). Kumar (2011) adds that the purpose of a pilot study is to investigate the possibility of undertaking it on a larger scale and to streamlining methods and procedures for the main study. Saunders at al. (2009) further elaborate that a pilot study minimizes the likelihood of respondents having problems in answering the questions and of data recording problems as well as to allow some assessment of the questions' validity and the reliability of the data that will be collected. A pilot study was conducted for this main research in compliance with the DBA program protocol. Three participants were selected consisting of two holders of Ph.D. who were subject matter experts (SME) in both Project Management Office (PMO) and Organizational Project Management (OPM) fields followed by a practitioner who was non-SME in either PMO or in OPM. Two participants were from the United States of America (USA) while one was from Beirut of the Middle East. The pilot study participant summary report is depicted in the table below:

Table 9 - Pilot Study Participant Summary Report

Source: Author's Own Analysis

Number of Interviewee	Subject Matter Expert (SME)	Practitioner	Demographic	
			USA	Middle East
3	2	1	2	1

During the initial interviews with the Ph.D. participants, one of them suggested testing the pilot with a candidate who is a non-SME in PMO and OPM. This suggestion was made to provide the researcher with an opportunity on how to react and deal if a participant is unsure of the question. The pilot study was a very valuable exercise and the takeaway was that the researcher was able to fine-tune the interview technique and change the interview kick-off strategy. Initially, the researcher embarked directly on the question with the assumption that the participants were well acquainted with the subject, however, it wasn't the case, especially with the non-SME. The researcher had to introduce the concept of OPM on several occasions during the interview in order to continue with to flow seamlessly.

Since the research questions dealt with PMO and OPM, it was discovered that inadequate knowledge of both PMO and OPM resulted in the participant's (interviewee's) inability to answer the research question in completeness. The researcher had to intervene by defining OPM and its interconnectivity with PMO. The researcher experienced this situation with only one participant who was non-SME in both PMO and OPM. Therefore, the research called for highly specialized participants who were not only required to know PMO and OPM but were required to be able to differentiate and answer research questions appropriately. Two

participants who were Ph.D. holders were SME in both PMO and OPM subjects. Their participation went extremely well as both were able to articulate in the interview session. Therefore, it was considered a critical success factor for the main research study.

3.10 Summary

This chapter outlines the research approach that covers the research philosophy, ontology, epistemology, axiology, data collection, sampling, data analysis, and ethical consideration. This research adopts the **practice-based philosophical** approach as in practice-based research, a dynamic setting for action is created in the local arena where knowledge and action come together in practice (Blomquist et al., 2010), which is best suited for this study. From an **ontological** position, a subjectivist stance is adopted. This is in alignment with Blomquist et al. (2010) practice-based philosophical approach as it offers a social phenomenon where social actors are practitioners and their interactions contribute to the social reality and it is dynamic where knowledge and action come together in practice and, as a result, it is constantly changing the state of social reality (Saunders at al., 2009). From an **epistemological** position, an interpretivist stance is adopted, which is in alignment with an inductive approach. The interpretivist position advocates the researcher to focus on social actors (practitioners) with the emphasis of understanding the meanings that the respondents ascribe to various phenomena (Saunders at al., 2009), which loops back in alignment Blomquist et

al. (2010) practice-based philosophical approach. From the **axiological** position, this research supports the interpretivist value setting with the adoption of a personalized approach to managing a small sample of subjects in a personalized interactive setting. This value aligns with the interpretivist paradigm, which promotes the idea that subjective thoughts and ideas are valid in an interpretivist research model (Greener, 2008).

For **data collection**, this study adopts an exploratory conversational semi-structured interview for its research data collection approach in alignment Blomquist et al. (2010) practice-based philosophical approach. For **sampling**, this study adopts expert sampling, a type of purposive sampling technique from the family of non-probability sampling technique since it requires participants with highly specialized project management office (PMO) and organizational project management (OPM) expertise. For **data analysis**, this study adopts thematic analysis with reflexive/organic coding style in a bottom-up approach in alignment with Blomquist et al. (2010) practice-based philosophical bottom-up approach whereby the coding has a fluid and open process giving the researcher the flexibility to reflect on how the data is growing and developing. It provides several benefits to qualitative research, such as depth in engagement open-endedness, exploratory, fluidity, and flexibility.

Finally, in relation to **ethical consideration**, this research study adopts Flinders (1992) Utilitarian theorist's ethics approach in a traditional "scientific" stance in alignment with Allen's (2011) four specific values that support the code of conducts in accordance with PMI's Code of Ethics and Professional Conduct

and maps Flinders' (1992) ethical considerations to PMI's Code of Ethics and Professional Conduct (Allen, 2011). All of the above information is eloquently captured in the table.

Table 10 - Summary of Research Methodology's Holistic View

Source: Author's Own Analysis

Method	Approach	Description
Ontological	Subjectivist	From an **ontological** position, a subjectivist stance is adopted.
Epistemological	Interpretivist	From an **epistemological** position, an interpretivist stance is adopted, which is in alignment with an inductive approach.
Axiological	Interpretivist Value Setting	From **axiological** position, this research supports the interpretivist value setting with the adoption of a personalized approach to managing a small sample of subjects in a personalized interactive setting.
Data Collection	Exploratory Conversational Semi-Structure Interview	For **data collection**, this study adopts an exploratory conversational semi-structure interview for its research data collection approach.
Sampling	Expert Sampling	For **sampling**, this study adopts expert sampling, a type of purposive sampling technique from the family of non-probability sampling technique since it requires participants with highly specialized project management office (PMO) and organizational project management (OPM) expertise.
Data Analysis	Thematic Analysis with Reflexive/Organic Coding Style	For **data analysis**, this study adopts thematic analysis with reflexive/organic coding style in a bottom-up approach.
Ethical Consideration	Utilitarian Theorist	For **ethical consideration**, this study adopts utilitarian theorist's ethics approach in a traditional "scientific" stance that supports the code of conducts.

4 FINDINGS

4.1 Introduction

This chapter provides the findings to the three research questions that were developed from the literature review. First, what are the strategic challenges and opportunities for Project Management Office (PMO) (Section 2.9, p.55)? The first research question seeks to understand the unilateral stance of PMO in a current setting. It seeks to address the role that PMO plays in an organization and the key drivers for its success. Second, what are the significant gaps and areas of opportunities for Organizational Project Management (OPM) (Section 2.10, p.57)? The second research question seeks to understand the organization's understanding of the OPM Continuum and its interconnecting relationships and intertwined capabilities. It seeks to address key opportunities for and challenges to OPM interconnectivity development in an organization. Third, what are the possible improvement and recommendation approaches for OPM within a PMO (Section 2.11, p.59)? Third question, that seeks to understand the organization's efforts of harmonizing PMO's operation with OPM Continuum and its continuous improvement process. It seeks recommendation approaches for PMO to adopt an OPM practice.

This chapter presents the findings of the interviews through Braun & Clarke's (2006) Reflexive/Organic Thematic Analysis approach. The chapter begins with a summary of thematic categories, which is used to analyze the data

collected from the interviews. It continues to provide a list of interviews with coverage of the interviewees' demography, subject matter expertise, area of practice and area of the industry while maintaining interviewees' anonymity (omitting participants' name and company as per university guidelines and interviewee's consent form agreement). The chapter continues to explore the understanding of PMO/OPM history based on the inputs received from the interview sessions and systematically presents the findings into eight thematic themes as follows:

- Thematic Analysis 1: Strategy
- Thematic Analysis 2: Structure
- Thematic Analysis 3: Benefit Realization
- Thematic Analysis 4: Communications
- Thematic Analysis 5: Reporting
- Thematic Analysis 6: Assessment
- Thematic Analysis 7: PMO Failure
- Thematic Analysis 8: Challenges and Risks

The chapter ends with a conclusion of a summary of the findings.

4.2 Generalizability and Transferability

Generalization is a term most commonly associated with quantitative research and is often used to define quantitative research positively. Hence,

qualitative researchers often face the critique that qualitative research is not statistically generalizable (Tracy, 2020). While generalizability is a term not ordinarily discussed for qualitative research, however, Smith (2018) has identified several qualitative works of literature that have researchers discussed generalizability in different ways and pointed out that there is a lack of detailed discussion on generalization in relation to qualitative research resulting in a misunderstanding that qualitative research remains weak without generalization (Smith, 2018). However, Ritchie & Lewis (2014) clarify that rich knowledge and small samples purposefully chosen are thus unique strengths of qualitative research, not weaknesses. Hence, the researcher adopted expert sampling, a type of purposive sampling technique from the family of non-probability sampling technique, and carefully identified a small sample of participants with highly specialized PMO and OPM expertise comprising of both Subject Matter Experts (SMEs) and Practitioners that are trustworthy in the field of OPM continuum, which adds towards the validity and reliability of the participants that are being interviewed.

Transferability is a similar qualitative approach to generalizability often used by qualitative researchers. Guba (1981) suggested that there are correlates to the quantitative and qualitative research approaches where quantitative research looks for generalizability, qualitative research looks for transferability. Ritchie & Lewis (2014) further add that transferability is also sometimes referred to as inferential generalization. Before expounding any further, it is important to understand the definition of transferability. Korstjens & Moser (2018) define transferability as the degree to which the results of qualitative research can be

transferred to other contexts or settings with other respondents. Smith (2018) argues that transferability occurs when a person or group in one setting considers adopting something from another that the research has identified. Smith (2018) continues to add that the occurrence starts when readers feel connected and believe that the research overlaps with their own situation and that there is something that the readers can apply to their current setting. Tracy (2010) calls this phenomenon a naturalistic generalization, also known as transferable findings, whereby the researcher provides a rich description with the focus on depth rather than breadth. The researcher took the utmost care on the transferability by providing a rich description of the situation, participants, findings, and discussion including providing recommendations in the conclusion section for the readers to feel connected and consider improving their situation and developing their current practice. The researcher also took utmost care on the strength of the outcome through a rigorous number of interviews per theme as depicted in the table below.

Table 11 - Summary of Number of Interviewees per Theme

Source: Author's Own Analysis

S/No	Themes	No of Interviewees (Participants)	Total
1	**Strategy**	Participants 1, 3, 4, 6, 7, 10, 11, 12, 15	**9**
2	**Structure**	Participants 1, 3, 4, 6, 7, 10, 11, 13	**8**
3	**Benefit Realization**	Participants 1, 6, 8, 10, 13	**5**
4	**Communications**	Participants 1, 4, 9, 11, 14	**5**
5	**Reporting**	Participants 3, 7, 10, 12, 14	**5**
6	**Assessment**	Participants 4, 6, 7, 9, 10, 13, 15	**7**
7	**PMO Failure**	Participants 2, 6, 8, 9, 10, 13	**6**
8	**Challenges & Risks**	Participants 1, 6, 7, 10, 12	**5**

4.3 Summary of Thematic Categories

The findings process aligns with Braun & Clarke (2006) Reflexive/Organic Coding Style (Six-Stage Process as explained in Section 3.7, Figure 17, p.84), whereby eight themes were identified and aligned to address the three research questions. In Stage 1 the interview data were transcribed, in Stage 2 the initial codes were generated and in Stage 3 themes codes were identified and mapped to the knowledge theme. The themes were carefully reviewed in Stage 4 whereby codes were further mapped to sub-theme (sub-theme is mentioned in Section 4.5, Table 14, p.113). The themes were refined in Stage 5 mapping codes to the final eight themes. In the final Stage 6, a summary report of the analysis is generated demonstrating codes mapping to knowledge themes, sub-themes, and final eight themes. The table below describes the eight themes along with their coverage of the research questions.

Table 12 - Summary of Thematic Categories

Source: Author's Own Analysis

Themes		Description	Research Question Coverage		
			RQ1	RQ2	RQ3
1	Strategy	The significance of a strategy model, its alignment in a PMO setting and its relationship with its interconnecting practices within the OPM Continuum.	X	X	X
2	Structure	The significance of a PMO structure and its relationship with the interconnecting practices within the OPM Continuum.	X	X	X
3	Benefit Realization	The significance of a value system model within a PMO that evaluates its relationship with interconnecting practices within the OPM Continuum.	X	X	X
4	Communications	The significance of a communication model that spans both vertically and horizontally within a PMO and across OPM Continuum of practices.	X		
5	Reporting	The significance of a reporting structure, its strengths and vulnerabilities, and the role it plays for a successful PMO within the OPM Continuum.	X		
6	Assessment	Determination of an assessment and measurement practice within a PMO with the aim of developing an ongoing continuous improvement practice.			X
7	PMO Failure	Determination of interconnectivity gaps within the OPM Continuum of practices that lead to the PMO failures.	X		
8	Challenges & Risks	Determination of challenges and risks that coexist in a PMO setting leading to the interconnectivity gaps within the OPM Continuum of practices.	X	X	
OUTCOME	Recommendation	Possible improvements and recommendations for OPM Continuum of practices within PMO to ensure PMO/OPM harmonization continues.			X

4.4 Interview Participants

The interview participants comprised a balanced of both Subject Matter Experts (SMEs) and Practitioners. The pilot study played a significant role as it was discovered that inadequate knowledge of both Project Management Office (PMO) and Organizational Project Management (OPM) resulted in the participant's (interviewee's) inability to answer the research question in completeness. The researcher had to intervene by defining OPM and its interconnectivity with PMO several times during the course of the interview sessions. Therefore, a careful list of interviewees was established comprising of SMEs and Practitioners who were not only required to know PMO and OPM but were required to be able to differentiate and answer research questions appropriately. The SMEs were Ph.D. holders and consisted of experts from both fields of Academia and Consulting.

Active practitioners from PMO, Portfolio Management (PfM), Program Management (PgM) and Project Management (PM) practices were carefully selected. The researcher ensured that both SMEs and Practitioners were globally selected and covered a vast range of industries ranging from agriculture, banking, healthcare, pharmaceutical, medical and software technology, food and beverages to transportation. The list provides the interviewees' demography, subject matter expertise, area of practice and area of the industry while maintaining interviewees' anonymity (omitting participants' name and company as per university guidelines and interviewee's consent form agreement). The list

balances out with SME totaling to 47% and practitioners totaling out to 53% as depicted in the table below.

Table 13 - Main Research Interview Participant List

Source: Author's Own Analysis

Interviewee		SME	Practitioners				Industry	Country
			PMO	PfM	PgM	PM		
SME	Participant 1	X					Academia	USA
	Participant 2	X					Academia	MEXICO
	Participant 3	X					Academia	USA
	Participant 4	X					Consulting	UK
	Participant 5	X					Consulting	SWEDEN
	Participant 6	X					Consulting	BRAZIL
	Participant 7	X					Consulting	USA
PRACTITIONERS	Participant 8		X				Banking	AUSTRIA
	Participant 9		X				Healthcare	USA
	Participant 10			X			Food & Beverages	USA
	Participant 11			X			Transportation	UK
	Participant 12				X		Pharmaceutical	UK
	Participant 13				X		Medical Technology	ITALY
	Participant 14					X	Agriculture	NETHERLANDS
	Participant 15					X	Software Technology	GERMANY
Total = 15		7	8					
Total = 100%		**47%**	**53%**					

The following description of the companies is provided for the reader to understand the background and the type of companies the participants were associated with. However, the names of the companies are kept confidential and discreet in compliance with the Edinburgh Napier University's (ENU) Code of Practice on Research Integrity (ENU, 2013).

- **Banking:** Russia's largest bank and a leading global financial institution that provides financial services to over one million customers in Central and Eastern Europe. It has the largest banking network with over 14,000 branches in more than 20 countries.

- **Consulting:** A French multinational corporation that provides consulting, technology, professional, and outsourcing services. It is headquartered in Paris, France, and has over 200,000 employees in over 40 countries.
- **Food & Beverages:** A global leader in convenient foods and beverages company founded in the United States. Their products are enjoyed by consumers in more than 200 countries and territories around the world. The company generates more than $1 billion each in estimated annual retail sales.
- **Healthcare:** A nonprofit healthcare organization founded in the United States and ranked at or near the top of the "Best Hospitals Honor Roll". The organization serves more than a million people from all 50 states and nearly 150 countries.
- **Medical Technology:** A medical device and medical technology company founded in the United States. With operations in 150 countries, the company generates more than $30 billion in revenue with over 90,000 employees and 10,000 engineers and scientists employed worldwide.
- **Pharmaceutical:** A global multinational pharmaceutical company founded in London with a turnover of over £30 billion. The company has invested £4 billion in research and development with 37 new medicines and 15 new vaccines in development for 2020.
- **Software Technology:** A German-based software technology company that specializes in providing a wide range of next-generation client

technology platform for aerospace, automotive, railway, maritime, healthcare, and media industries.

- **Transportation:** Government transportation services established in London with a commitment to reduce pollution and improve air quality by running the Ultra Low Emission Zone (ULEZ) in central London, cleaning up bus fleet and taxis, supporting small businesses and charities to switch to cleaner vehicles and investing £2.3 billion on “transformative projects” to make London’s roads safer.

4.4.1 Participant 1 Profile

Participant 1 is based in the United States of America (USA) and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Ph.D. and held both program management and project engineering responsibilities on a variety of independent research and development (IR&D) programs consisting of NASA, Air Force, Army, and Navy. The participant has published and presented more than 140 engineering and business papers and has also published textbooks in project management.

4.4.2 Participant 2 Profile

Participant 2 is based in Mexico and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Ph.D. and is a globally recognized author and lecturer on project management. With careers spanning more than 70 years, the participant has broad international experience in engineering, operations, program and project management. The participant is a Fellow of the Project Management Institute (PMI) and an Honorary Fellow of the Association of Project Management (APM). The participant has authored and co-authored books that have been translated into Italian, Spanish, Portuguese, Russian and Chinese.

4.4.3 Participant 3 Profile

Participant 3 is based in the United States of America (USA) and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Ph.D. and has more than 20 years of international experience working in the industry for companies such as Ericsson, Siemens, Nokia, and Bridgestone. The participant is a key presenter, motivator and an advocate of the project management profession, and a champion of governance, ethics, and social responsibility.

4.4.4 Participant 4 Profile

Participant 4 is based in the United Kingdom (UK) and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Bachelor of Science and has more than 40 years of experience in project management. The participant started a career in project management with the UK Ministry of Defence in 1978. With careers spanning more than 40 years, the participant held leadership positions such as Head of Project Management and Head of Human Resources Development. The participant recently completed the role as Vice President for the International Project Management Association (IPMA). Currently, the participant is retired due to health reasons.

4.4.5 Participant 5 Profile

Participant 5 is based in Sweden and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Ph.D. and is a focused Management Consultant with specialization in management of complex projects, stakeholder management, risk management, business process development, business transformation and management of cross-functional and cross-cultural environments. The participant has authored and co-authored several papers in the International Journal of

Project Management, International Journal of Managing Projects in Business and Journal of Leadership, Accountability, and Ethics.

4.4.6 Participant 6 Profile

Participant 6 is based in Brazil and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Master of Business Administration (MBA) degree and is a project management specialist and a researcher, with a large experience in complex projects in Latin America and Europe. The participant is the Chair of the Board of Directors of the PMO Global Alliance, the worldwide community of PMO professionals. The participant has over 20 years of experience in project management and portfolio management and has worked as a Senior Executive capacity.

4.4.7 Participant 7 Profile

Participant 7 is based in the United States of America (USA) and is a subject matter expert in Organizational Project Management (OPM) Continuum consisting of project management, program management, and portfolio management domains. The participant holds a Master of Science in Technology Management and a Masters Certificate in Project Management. The participant is a consultant

to Global Fortune 500 corporations and government agencies looking to improve organizational project management through best practices, competency and skills development. The participant has authored and co-authored 9 books and more than 40 articles in project management. The participant has presented at more than 25 PMI global congresses, as well as other venues. The participant is a winner of the PMI Eric Jennet Project Management Excellence Award.

4.4.8 Participant 8 Profile

Participant 8 is based in Austria and is a Project Management Office (PMO) practitioner in the banking industry. The participant is the Head of PMO with over 20 years of banking experience. As the PMO Head, the participant monitors the productivity of 10 network banks and provides project management and on-site review of local processes with identification of deficiencies while providing with PMO solutions. The participant is an experienced banking professional with expertise in project management, process management, corporate organization and governance, banking operations, and coaching.

4.4.9 Participant 9 Profile

Participant 9 is based in the United States of America (USA) and is a Project Management Office (PMO) practitioner in the healthcare industry. The participant is a Director of PMO with over 18 years of PMO, project management and program

management experience. The participant was recently promoted to a Senior Director and currently holds multiple senior leadership positions. The participant is a member of the Board of Directors PMI Chapter. The participant holds a Master of Business Administration (MBA) and a Bachelor's degree in Accounting and Computer Science.

4.4.10 Participant 10 Profile

Participant 10 is based in the United States of America (USA) and is a portfolio management practitioner. The participant is the Senior Enterprise IT Portfolio Strategy and Governance Manager with over 10 years of portfolio management experience. The participant specializes in portfolio management of critical programs and projects and has managed portfolio, program and project goals across multiple stakeholders and functional/strategic groups to enhance outcomes for business as a whole. The participant holds a Master of Business Administration (MBA) and a Bachelor's degree in Computer Science.

4.4.11 Participant 11 Profile

Participant 11 is based in the United Kingdom (UK) and is a portfolio management practitioner in the transportation industry. The participant is a Portfolio Manager with over 10 years of portfolio management experience and specializes in portfolio management and program management with experience

from Big 4 Consultancy background. The participant's expertise includes aligning portfolio of opportunities with business priorities, optimizing resources by effective workforce planning and ensuring consistent change delivery through developing common end to end processes. The participant also specializes in Risk Management, Assurance Management, Knowledge Management, Resource Capacity Management, and Organizational Change Management.

4.4.12 Participant 12 Profile

Participant 12 is based in the United Kingdom (UK) and is a program management practitioner in the pharmaceutical industry. The participant is a Senior Program Manager with over 20 years of program management experience. The participant is an accomplished program manager and specializes in complex large budget program management. As a program manager, the participant's key responsibilities were managing stakeholder relationship with the press, governmental agencies, and technology partners. The participant currently heads and oversees the Brexit program. The participant holds a Bachelor's degree in Mathematics and a Diploma of Technology in Mechanical Engineering.

4.4.13 Participant 13 Profile

Participant 13 is based in Italy and is a program management practitioner in the medical technology industry. The participant was a Program Manager with

over 20 years of program management experience. The participant was recently promoted to a Director of PMO and has a strong program management experience. The participant has implemented large and complex program operations on a global scale. The participant was responsible for a team of project managers within Operations, Research and Development (R&D) for large customer programs overseeing multiple projects. The participant holds a Master of Science in Electronic and Business Organization and multiple certifications in project and program management.

4.4.14 Participant 14 Profile

Participant 14 is based in the Netherlands and is a project management practitioner in the agriculture industry. The participant is a Project Manager with over 25 years of experience in project management. The participant's background as an organization sociologist comes in handy when leading teams and stakeholders in a politically difficult environment. The participant holds a Bachelor's degree in Human Resources Management and holds an IPMA-B certification since 2007. IPMA-B is an international senior-level certification in project management issued by the International Project Management Association (IPMA), Netherlands.

4.4.15 Participant 15 Profile

Participant 15 is based in Germany and is a project management practitioner in the software technology industry. The participant is a Project Manager with over 15 years of experience in project management. The participant has implemented software development, innovative, media, and telecommunication projects on a global scale. The participant holds a Master of Science in Computational Engineering and a Bachelor's degree in Computer Science.

4.5 Thematic Analysis Overview

As discussed in Section 4.2, thematic analysis for this research aligns with Braun & Clarke (2006) Reflexive/Organic Coding Style (Six-Stage Process as explained in Section 3.7, Figure 17, p.84). Eight themes were identified and aligned to address the three research questions. During the coding and analysis, sub-themes were identified to establish a thorough understanding of the data collected and how it aligns and fits into the broader context of the eight main themes. This provided the researcher an opportunity to relate the findings as a storyteller who has been actively engaged in interpreting the data through the lens of his expertise whereby it requires deep thinking, focus engagement and interpretative work. The sub-themes also provided the researcher with an opportunity to develop a precise discovery of pain-points, which was extremely

beneficial and effective towards the development of recommendations. Sub-themes are depicted in the table below.

Table 14 - Themes and Sub-Themes List

Source: Author's Own Analysis

Themes		Sub-Themes	
1	Strategy	1.1	PMO as a Delivery System for Strategy
		1.2	Strategic Business Alignment Expectation
		1.3	Portfolio Management is Missing in PMO
		1.4	OPM Interconnectivity is Missing
		1.5	Lack of Strategy Linkage
2	Structure	2.1	PMO Models & Structures
		2.2	Unilateral PMO
		2.3	Lack of Domain Knowledge and Expertise
		2.4	Prescriptive Approach
		2.5	Easy Setup with Minimal Organizational Change
3	Benefit Realization	3.1	Benefits and Value System
		3.2	Resource Cost Management Expectation
		3.3	On-Time Delivery is Intangible Value
4	Communications	4.1	Communication Sharing System
		4.2	Advocative Communication Support
		4.3	Adaptive & Simplified Maturity Communication
		4.4	Lack of Interconnecting Communication
5	Reporting	5.1	Major PMO Roles Identified
		5.2	Lack of Domain Experience Resources
		5.3	Lack of Proactive Reporting
		5.4	Politically Driven Decisions
6	Assessment	6.1	Lacked in a PMO Maturity Assessment Process
		6.2	Irregular OPM Continuum Assessment Process
		6.3	Varying Degree of Assessment and Continuous Improvement Process
		6.4	Unrealistic OPM Maturity Comparatives
7	PMO Failure	7.1	Lack of Understanding by Executives
		7.2	Lack of Delivery Expectation
		7.3	Lack of Business Ownership
		7.4	Lack of PMO Engagement with Leadership
8	Challenges & Risks	8.1	Too Many Variations of PMOs
		8.2	Over-Implementing Practice
		8.3	Managing People and Knowledge Centric
		8.4	Lack of Change Management
		8.5	Lack of Time Investment

4.5.1 Thematic Analysis 1: Strategy

This thematic analysis deals with the significance of a strategy model, its alignment in a PMO setting and its relationship with its interconnecting practices within the OPM Continuum.

(1) **PMO as a Delivery System for Strategy:** PMO in practice provides strategy implementation of projects and programs through the process of portfolio management (Kaiser et al., 2015). However, from the findings, PMO has been identified as a delivery system for achieving strategic corporate objectives. This is a very interesting observation as according to Participant 1 businesses are expecting project managers to make not only project-based decisions but business decisions as well. This has reshaped the way corporations are expecting project managers and PMOs to behave.

> *"Right now, we believe that PMO and project management is a delivery system of achieving strategic corporate objectives. In other words, if you are a project manager today, we're expecting you to make not only project-based decisions but business decisions as well." (Participant 1).*

The researcher was curious to investigate if there exist any company that has set such an expectation. From the findings, it has been discovered that IBM was identified as the company that has set an expectation for its project managers to acquire training in both the project management process and business process. Hence, IBM has

developed an internal training program for their project managers to become dual-certified; PMI certification in project management and IBM's internal business process certification.

> *"Let me show you how the market has changed. IBM wants all of their project managers to become dual certified. They want them to become certified by PMI as PMPs and they want them to become certified by IBM by passing IBM's internal certification program. What is the difference between IBM's internal certification program and PMP exam? Well, IBM realized very quickly that today's methodologies and project management contain business processes. Therefore, where would the people get the knowledge about the business processes? People know about project management processes. They know about the PMBOK guide. They know about the domain areas. They know about input tools and output. But a lot of project managers don't fully understand is the company's business model – the company's business processes. So, IBM put together an internal certification program to teach these people about IBM's internal business processes that are now a part of IBM's project management methodology." (Participant 1).*

(2) **Strategic Business Alignment Expectation:** Traditionally, project management revolves around its project management life cycle, which uses a series of phases to manage its project execution (Westland, 2006). Through these series of phases, project managers are able to monitor checkpoints, called “milestones”. An interesting observation has been made through this finding. It has been discovered through Participant 1 that businesses are expecting PMOs to have strategic business alignment. Businesses are now expecting PMOs to develop flexibility in their project management approach so that they can establish milestones and checklists that are aligned with the company’s strategic business model.

> *“Customers are getting smarter. They said we want your project management approach to be aligned to our business model, not yours. In other words, we want you to have flexibility in your project management approach so that you can establish milestones and checklists that are aligned with our strategic business model. If you can do that, we will give you repeat business. In other words, customers today want project management align to their business model, not the contractor’s business model.” (Participant 1).*

(3) **Portfolio Management is Missing in PMO:** In 2007, multi-phase research was conducted on PMOs and the result showed a presence

of portfolio management process as part of a PMO (Aubry & Hobbs, 2007). However, it was discovered through Participant 7 that most PMOs do not have an active portfolio management practice or process embedded.

> *"But I will say, Murad, that it is largely focused on projects, very few that I have seen any way that are doing on programs and I haven't seen anyone doing on a portfolio." (Participant 7).*
>
> Although the quote is referenced directly to Participant 7, this view was similarly shared by other Participants, including Participants 4, 10, 11, and 15.

It was further discovered through Participant 11 that there is a lack of strong portfolio management practice in the United States (US).

> *"The thing that I've observed in my travels is that I've not seen very strong practice of portfolio in the US." (Participant 11).*

On a similar context, Participant 4 also expresses a similar sentiment of a lack of portfolio management practice in the United Kingdom (UK).

> *"It's something that has really hasn't caught on terribly well in the UK." (Participant 4).*

The interviews also identified that PMOs are focused on running projects and programs, hence, are not maturing to the next level.

Organizations assume that portfolio management is not a complicated science and is something that they can deal with an excel file.

> *"Some companies who are from small to mid-size or mid to large size, they don't want to explore the area of portfolio management. They somehow believe that the portfolio management is not a complicated science and is something that they can deal with an excel file and discussing around, you know, 50 projects and just prioritizing probably 25 of them and then be done with it. That's their definition of portfolio management." (Participant 10).*

Another interesting observation was discovered during the interview process. It was discovered through Participant 15 that there is a lack of maturity when it comes to portfolio management. It is evident that companies are not experienced in handling portfolios and are at a learning stage and, therefore, do not have an active portfolio management practice. Participant 10 explains that with the absence of portfolio management practice, as a result, the interconnectivity or shared linkage between project management, program management, and portfolio management is lost.

> *"So, that's the biggest challenge and opportunity for our company because we are quite good on a project level but we are not that experienced in portfolio level. We are also*

learning. We know more about problems than portfolios." (Participant 15).

"There should be a shared linkage, see again, when you talk about project, program and portfolio management, right, at the end of the day what are these 3 processes doing? They are delivering organization's objectives; they are delivering organization's strategies. So, clearly, there should be a linkage between these and there's where the lack is. If there is no linkage then there is something wrong. Simple as that." (Participant 10).

The researcher was curious to investigate the criticality of portfolio management practice within OPM and the importance of portfolio management practice for a successful OPM harmonization effort. It was interesting to observe that in order for OPM harmonization to be effective, PMOs have to get involved in much more strategic operation activities of the organization instead of just focusing on the delivery of projects and programs to the organization. PMOs have to raise their maturity bar to the next level beyond just running project management and program management practice. Unfortunately, portfolio management practice is missing in PMO today.

"PMO has to be an entity, which has great respect within the organization, which means that it has to be staffed by highly competent and influential people. Because when you are

talking about OPM harmonization, you are really going beyond just running projects and just running programs – you are going up to the next level of portfolio because that's part of OPM. So, how does the PMO play in the portfolio process? Not all do. Most don't either way. As to that to me when people talk about strategic PMO, to me that's a PMO that has embedded itself in the business decisions of the organization, not just the delivery of projects and programs to the organization. So, in order for this harmonization to place in the PMO, the PMO has to get involved in much more strategic operation activities of the organization. And if it doesn't, then it's basically going to be a very helpful entity, no question about it, but it will never reach that next level of integration with the whole of the organization." (Participant 7).

(4) **OPM Interconnectivity is Missing:** From the findings, it appears that executives are not fully aware or engaged closely with Organizational Project Management (OPM) Continuum of practice consisting of Project Management, Program Management, and Portfolio Management. It appears that most businesses do not understand the true practice of Portfolio Management and how the interconnection functions between the OPM Continuum of the three domains of practice consisting of Project Management, Program Management,

and Portfolio Management. It is apparent from the interviews that two factors are contributing to this gap; i.e. (1) the lack of understanding at the leadership level as identified by Participant 10 and (2) the lack of maturity within organizations as identified by Participant 6. Participant 6 further elaborates that leadership believes that a portfolio is just a list of projects and programs. However, it is more than just a list. As a result, OPM interconnectivity is found to be missing and this is a big gap. Participant 3 expresses that a strategic PMO should have all the three interconnected domains under the umbrella of a PMO.

> *"Throughout my career, I've been building, leading, managing, sustaining PMOs in various shapes and different industries. And throughout my experience, it would be very interesting, is that I have not heard this term Organization Project Management coming out of leadership conversation. Because their lens is focused into a different manner. So, they do not emphasize too much OPM and that's a big, big gap." (Participant 10).*

> *"This interconnections between the three domains is something that is not really common to few (companies). Many, many companies believe that portfolio is just a list of projects, right. But we know that it is more than this. As I have said, it is a lack of maturity that we observe and in companies and, of course, companies are made by people, right, so you*

are talking about lack of maturity in executive level and management level and it is a challenge to change it and this interconnection is absolutely important." (Participant 6).

"A real strategic PMO should address the portfolio and, by saying that, to address the three domains because if you have portfolio, you also have programs and you also have projects. So, the three domains should be under the umbrella of the PMO." (Participant 3).

The reseasher was curious to investigate the advantage and benefits of OPM interconnectivity. I discovered two benefits; (1) the interconnection ensures that the projects and programs are contributing towards the company strategy and eliminates unnecessary "hobby" projects, and (2) it provides career opportunity for growth as resources at the project level understand the interconnection and linkages of projects to programs and to portfolio, and they are well connected with opportunities for growth.

"It has to fit the strategy and it has to be quantifiable in those ways. So, thus it will eliminate, what I would call, hobbies that a lot of strong leaders would like to do. They like to do things with company money that often sounds good, it is sold well but it is not contributing to overall strategy. So, the fact that you have all that linked together means that everything that you are doing is contributing towards the overall strategy. And

it also means the people, say, at the project level, this is another thing is that it helps people within your organization to grow, they have places to grow. So, if they are at the project level, they know that if there is an interconnection to program, they know that's their next level. And then obviously at the higher level is the portfolio. So, it allows people to grow. And you see the linkages and they understand the differences between program, portfolio, and project." (Participant 12).

(5) **Lack of Strategy Linkage:** It was discovered Participant 12 that there is a lack of a strategy linkage resulting in a significant strategy model gap in a PMO setting and within the OPM Continuum (covering all three domains of project management, program management, and portfolio management).

"Another piece which is extremely important is a link to strategy. Strategy at a PMO should go hand in hand with corporate strategy and strategic people should be hard linked to the PMO to ensure that what you are delivering or what you are doing is in alignment to corporate. Where I've seen it fall down is where they bring in a PMO to manage a project set with not even realizing that it's not working in a program or a portfolio, just a group of projects that are not cohesively put together to actually deliver a program or a series of benefits,

even though it still has the name of being a project or a program office. Where I have seen falling down there where they don't try and connect it to strategy and ensure that all of the projects are actually delivering a series of benefits and, as well as, they are just lacking a link to strategy." (Participant 12).

From the findings, it has been identified that the gap is directly related to the lack of maturity. This apparent lack of maturity is resulting in companies running projects without achieving and delivering a series of benefits such as organizational strategic benefits. It has further been identified that this gap is also associated with a lack of domain knowledge and understanding. It has been observed that the impact to this gap leads to the unfortunate misalignment of projects and programs to strategic objectives and often this connection is lost due to lack of executive support as indicated by Participant 6.

"For me, the most important aspect is the integration between the strategy and what you are delivering in your projects. Because many, many companies they just run projects but they don't understand that that projects will be responsible to deliver organizational strategic benefits. You know that projects that are not oriented to the strategic objectives they don't make sense. This connection between strategy and projects and programs is something really difficult to do

because it will depend on many, many aspects and the reason of being a very important point. When you are trying to create this integration, you need the support of the executive level because when you are trying to implement project management it is easier because you are working with a specific level in the organization. When you are trying to connect strategy and projects, you need to involve executive level and it is much more difficult because they are executives and they believe they know what they are doing. And when you go there and say you should try a little different, try to make a decision on other aspect, to define your portfolio, for example, it is difficult to convince them because they don't have a lot of patience and, of course, they believe that they are right as they are in executive position." (Participant 6).

Key Findings: PMO has been identified as a delivery system for achieving strategic corporate objectives. Businesses are expecting PMOs to have strategic business alignment and for project managers to make not only project-based decisions but business decisions as well. PMOs do not have an active portfolio management practice or process embedded as they are focused on running projects and programs, hence, are not maturing to the next level. There is a lack of strategic linkage resulting in a significant strategy model gap in a PMO setting and within the OPM Continuum. This is due to the lack of maturity

and lack of domain knowledge and understanding. OPM interconnectivity is missing as leadership are not fully aware or engaged closely with OPM Continuum of practice consisting of Project Management, Program Management, and Portfolio Management. OPM interconnectivity ensures strategic alignment and promotes career growth opportunities.

4.5.2 Thematic Analysis 2: Structure

This thematic analysis deals with the significance of a Project Management Office (PMO) structure and its relationship with the interconnecting practices within the Organizational Project Management (OPM) Continuum.

(1) **PMO Models and Structures:** To begin, it is essential to understand the types of PMOs that exist today. From the findings, it was identified that there are several models and structures of PMOs that exist today. Predominately they are 4 types of PMO models; (1) Centralized Top-Down PMO (2) Decentralized Staff-Functional PMO, (3) Delivery PMO and (4) Strategic PMO.

(a) **Centralized Top-down PMO:** Participant 7 indicates that the centralized top-down PMO is responsible and accountable for all of the projects under its purview, and the project managers within the organization or within the purview of the PMO report directly to the PMO head.

"The one structure is, what I would call a centralized top-down PMO where the PMO is actually responsible and accountable for all of the projects under its purview. And that the PMO head or the director, whatever title they carry, that person and all of the project managers within the organization or within the purview of the PMO report directly to the PMO head. And, in some way, it is not a direct relationship. There's an organizational PMO structure within itself. So, that is one structure that exists." (Participant 7).

(b) **Decentralized Staff-functional PMO:** Participant further indicates that the decentralized staff-functional PMO serves the project managers and the project practice within an organization, as more of a staff function, where the project managers in the organization do not report to the PMO head but they report to a functional or a business leader. In both centralized and decentralized PMO structures, the PMO has been put into place to help and assist project managers in three main areas; in the tools that the project managers use, in the project management process that the project managers use and the training and development of the project managers which are the three primary areas that they serve.

"The other structure, a prominent structure that I have seen, is where the PMO is not a centralized top-down organization. It exists to serve project managers and the project practice within an organization, as more of a staff function if you will; where the project managers in the organization do not report to the PMO head but they report to a functional or a business leader. So, the PMO has been put into place to help and assist project managers in three main areas; in the tools that the project managers use, in the project management process that the project managers use and the training and development of the project managers which are the three primary areas that they serve." (Participant 7).

(c) **Delivery PMO:** Participant 10 indicates that traditional PMOs are geared towards a delivery model, also known as Delivery PMO, whereby the focus of the PMO is to ensure that projects and programs are delivered on time and per defined processes and methodology. Delivery PMOs are very focused towards the methodologies, the frameworks, and the processes. Their specific influences are around adherence or adoption of the methodologies, the processes, and the tools that will be utilized

in terms of executing and managing the initiatives of an organization.

> *"Now comes to a point where you look at a structure of a PMO and in my experience, an organization basically looks at a PMO from 2 angles and they look at from a delivery aspect or, you know, Delivery PMO, which is very focused towards the methodologies, the frameworks, the processes that will be utilized to deliver the initiative or deliver in the pipeline of an organization. Their specific influences are around adherence or adoption of the methodologies, the processes, and the tools that will be utilized in terms of executing and managing the initiative of an organization." (Participant 10).*

(d) **Strategic PMO:** Participant 10 further indicates that a Strategic PMO is basically strongly connected or tightly connected with the overall strategy of the organization. The focus of a Strategic PMO is to support the organization in terms of making sure that there's a structured end-to-end process that not only supports the strategy formalization process but also helps the organization to get the strategy delivered through the portfolio management process that the Strategy PMO sets out.

"Strategic PMO is basically a strongly connected or tightly connected with the overall strategy of the organization. So, for strategic PMOs, they have specific processes or structure that basically supports the organization in terms of making sure that there's a structured end-to-end process that not only supports the strategy formalization process but also helps them to get the strategy delivered through the portfolio management process that the strategy PMO kind of sets out. Strategic PMO is basically about a process in place supporting the selecting, prioritization and monitoring of the overall strategic that gets formalized and finalized for the delivery purposes." (Participant 10).

(e) **Hubs and Spoke Model in the UK:** Participant 11 indicates that PMOs in the United Kingdom (UK) are using "Hubs and Spoke" model to develop a central portfolio office with project office hubs connected to it supporting services to functional businesses. "Hubs and Spoke" models are widely used in the transportation industry especially by the aviation and airlines. This model has been gaining popularity as it is a model recognized by the UK government.

> *"That particular stuff that I described is called "Hubs and Spoke" in the UK, where you have a sort of the central portfolio office and is connected to offices in different areas for instance, different divisional areas of the organization and the entire process has now been gaining traction so much so that you get specific job coming up for the "Hubs and Spoke" model in the UK. By the way, "Hubs and Spoke" is a structure that has been recognized by the UK government." (Participant 11).*

From the findings, it appears that PMOs are caught in the predicament between a delivery model and a strategic model. However, as the pressure is added on the PMOs by businesses for a delivery model and due to the lack of executive support for strategy model, PMOs continue to perform the traditional role of a Delivery PMO. An interesting observation was made. Participant 10 reports that Delivery PMOs are not involved or brought into a conversation during a corporate strategy formalization and finalization. Leadership is more geared to having a Delivery PMO that focuses on the on-time delivery of projects and programs. It was further discovered that PMOs are beginning to realize that the separation of delivery and strategy is found to be a problematic approach and is causing a severe imbalance due to a lack of a unified and harmonious approach.

"Some of the organization want to keep their PMOs at the delivery level. They don't want to engage their PMO at the strategic level. They have different teams, corporate strategic teams, functional strategic teams that come with the strategy, you know, I mean when they build out their 5 year plan and yearly plan to deliver their 5 year plan, they don't want to get involve PMO in those conversations where they want to keep just at a deliver level so when the strategy is formalized and finalized they hand over the documents to the PMO, go figure it out or go just deliver it. And report back to me that it is getting delivered as per the plan. I've also witnessed in couple of areas or organization that some people like to keep the strategic PMO separate from the delivery PMO, which I think is being realized as a problem." (Participant 10).

(2) **Unilateral PMO:** It is evident that PMOs are structured unilaterally rather than multilaterally. A unilateral PMO functions within a single domain of practice such as Project Management while multilateral PMO functions within the continuum of all three domains of practice such as Project Management, Program Management, and Portfolio Management. Two reasons were discovered for the unilateral trend. The first reason is historical while the second is operational. The first reason for the unilateral trend is that historically executives opted for

the unilateral approach to gain control of these PMOs as indicated by Participant 1.

> *"You know, years ago when we tried to do that, we had fights, and I mean, terrible fights by the executive level of management for who is going to get control of these PMOs. Because a lot of executives, sort of, went to this unilateral approach, whoever gets control of these PMOs will have more power from the other executives. So, there was lots of fighting going on at the executive level to control all of these PMOs." (Participant 1).*

The second reason for the unilateral trend is that PMOs are more focused on Project Management domain of practice at an operational level as indicated by Participant 6.

> *"So, that is why I believe that most of the time we see PMOs with unilateral approach because they are very focused on project management." (Participant 6).*

However, there are observations that PMOs are trying to provide Portfolio Management services but they lack organizational maturity. And, as a result, it is becoming a challenge for PMOs to adopt a multilateral approach.

> *"My experience is much more with unilateral structures. I could tell you that most of the time I work with unilateral structures and they work very well. I see is that many, many*

PMOs, they are oriented to project management that is why I supposed that they would be unilateral, right. But there are some PMOs that they try to start to provide some kind of services that are related to portfolio management. That is a trend that I can observe in companies that I have worked today. But it is to a challenge because when you want to move into this kind of approach you need a higher organizational maturity. So, it is not that all organizations have. So, that is the challenge." (Participant 6).

An interesting observation has been made, which is, some very large corporations that have multiple PMOs uses some common threads of technology tools for communications and reporting, and such common threads use a unilateral domain of practice as a platform. Hence, the focus remains on a single domain of practice, which is the Project Management domain.

"So, there has to be flexibility and the reason why, I believe, we have multiple PMOs. Now, they will all use some common threads in the way, perhaps, status reporting and things like that. But, as you have said, unilateral basis and that is the way that is going to continue to appear." (Participant 1).

The researcher wanted to investigate if the unilateral approach is effective or efficient. The response that the researcher received from Participant 11 was that PMO should not be unilateral. It is ineffective

as the role of a portfolio management practice is unique from the role of project management or a program management practice. Interchanging roles compromises the effectiveness of the specialization of the practice.

> *"When you talk about the OPM and its structure, it can't be unilateral. So, if you set up a project management office and if doesn't provide a service or a benefit then that structure would be very hard to justify. Similarly, you can't have a portfolio board without the PMO office, the delivery arm that helps to implement what's its doing. So, if a portfolio takes on a role of a project office then it will not be an efficient as in terms of, like, business planning, getting the other side of the various strategic and the business requirements that are supposed to be fulfilled." (Participant 11).*

(3) **Lack of Domain Knowledge and Expertise:** It has been observed that top management lacks domain knowledge and expertise in the Organizational Project Management (OPM) Continuum of practice consisting of Project Management, Program Management, and Portfolio Management domains. Participant 10 states that top management leaders are still struggling in understanding how the frameworks of interconnecting domains work together.

"And one more thing I would like to add is that, Murad, very minimal or basic understanding of project, program and portfolio management actually exist out there. Leadership are still struggling in understanding that what these frameworks bring to them." (Participant 10).

As a result, often, decisions are made that are detrimental to the existence of a PMO.The lack of domain knowledge and expertise impacts the overall structure of the PMO and the performance of the PMO. For example, Participant 4 states that top management leaders do not have hands-on experience at the grassroots level that project managers have, which unfortunately creates a vacuum of domain knowledge and expertise for top managers to understand the intricacy of the OPM Continuum of practices.

"I do find still when you get to the board level of the company it is quite rare to find anybody at that level to have expertise in projects at all. I worked in big engineering companies and would have experts in various technical domains but understanding projects and the way they fit together – that something that is quite rare – we don't have enough. There are people who are called project directors, not many that I've found, understand what it is really like to be a project manager. I think the big challenge is when you try to get something to work for the company but you have to get

through the board processes – lots of them don't understand what they are about." (Participant 4).

(4) **Prescriptive Approach:** From the findings, it appears that organizations are trending towards a prescriptive approach in structuring a PMO. Participant 13 mentions that PMOs are being developed using a recipe model and an implementation cookbook, and creating lots of governance, structures, and processes that may not be necessary or suitable for companies.

"You need to listen to the business to figure out why a company wants to establish a PMO. What is it that needs to be solved? What is it that doesn't work? And the recipe is not necessarily to create lots of governance, structures, and quality document because if you only do so and not provide guidance on how to do it then it will fail in probably one or two years, which it is a fair amount of PMOs are doing. They are getting in and saying, okay, here is a recipe for PMO, I will implement by cookbook and then it will work. Usually, this kind of PMO tends to fail whereas PMOs that go in and say, we have a solution we need to bring that is not there." (Participant 13).

This could result in over-implementing of practice, which can be detrimental to the success of PMO as mention in Section 4.5.8 (2), p.176. Participant 3 explains that PMOs are being replicated without

consideration of its current situation, its industrial base, its corporate strategy, its cultural awareness, and its geographical presence whether it is local or global. PMOs are replicated using a prescriptive approach with the assumption that one size fits all. Organizations are leaning towards a quick fix formulated solution that can be used in any given situation; irrespective of organizational size or structure.

> *"I believe that the structure of a PMO should be a result of a situation of a company. In which industry does the company emerge? Which kind of strategy the company fits in? What is the cultural awareness that they have? Is it a local company that operates in one country or a global company with branches everywhere? So, this is why I say, okay, what we have at Bridgestone or we have at Nokia, probably could not be replicated everywhere or we should not expect everyone to have the same. They should have work on their own project management office with their own structure that fits their needs. I feel that there is not a single recipe that you can commit to as an ideal structure that everybody should follow." (Participant 3).*

(5) **Easy Setup with Minimal Organizational Change:** It has been observed that organizations prefer to have an easy PMO setup with minimal organizational change. Participant 7 states that companies

that are unfamiliar with a PMO operation often view PMO setup as a significant organizational change, therefore, it is observed that companies prefer for easy setup in order to avoid enormous organizational change. A quick PMO set up with minimal organizational change makes it easier for organizational acceptance and adoption since it is not viewed as a threat.

> *"You know that I think the instances are; usually when a PMO was first established a structure is defined, it is a significant organizational change within a company and, so I think in some respects, company will establish the staff function PMO because it is easier for the organization to accept it and digest it. If they are establishing the top-down centralized PMO, that's an enormous organizational change. All the project managers are pull from the business unit reporting to the PMO directly – that is a major change in an organization. So, I think in some respect, organization prefers to go for more staff oriented one because it is easier to get started that way and the PMO doesn't represent as much of a threat to the organization." (Participant 7).*

Key Findings: There are several models and structures of PMOs that exist today. PMOs are structured unilaterally rather than multilaterally because they are more focused on the Project Management domain of practice at an operational level. PMOs should not be unilateral as it is ineffective. Top

management lacks domain knowledge and expertise in OPM Continuum of practice consisting of Project Management, Program Management, and Portfolio Management domains. Organizations are trending towards a prescriptive approach in structuring a PMO. PMOs are being replicated using a prescriptive approach with the assumption that one size fits all without consideration of its current situation, its industrial base, its corporate strategy, its cultural awareness, and its geographical presence whether it is local or global.

4.5.3 Thematic Analysis 3: Benefit Realization

This thematic analysis deals with the significance of a value system model within a Project Management Office (PMO) that evaluates its relationship with interconnecting practices within the Organizational Project Management (OPM) Continuum.

(1) **Benefits and Value System:** From the findings, it was discovered that the practice of project management is gearing towards creating benefits and value for the business. Participant 1 states that project management is evolving into becoming a delivery system for creating benefits and value. This model is changing the landscape of project management today. There is a sense of expectation from the business to see the value and to generate benefits, hence, project managers

are no longer paid to produce a deliverable. Project managers are paid to create benefits and value.

> *"The biggest change in project management is that project managers are no longer paid to produce a deliverable. Project managers are paid to create benefits and value. Project management is the delivery system for creating benefits and value." (Participant 1).*

Participant 6 states that this has put tremendous pressure on the PMO to constantly invest effort in proving the value of a PMO in a value system and it takes a lot of energy from the PMO itself.

> *"I believe that proving that part takes a lot of energy from the PMO itself. In order to prove that they are really bringing something in for the company." (Participant 6).*

Due to the emergence of benefits and value system, Participant 10 states that companies that are enhancing their PMOs are focusing on capabilities for change management, benefit realization and value realization.

> *"One other thing, which I have seen for the past few years happening in most of the Fortune 50 companies, you know, 10 years ago or 12 years ago when organizations were trying to build out their PMOs, there were no talk about change management or value realization resource or benefit realization resource within the PMO function. So, this is, I*

would not call it a challenge but sort like a new thing, which is going around in different industries and Fortune 100 companies that they are actually enhancing their existing PMOs with capabilities of change management and benefit realization/value realization aspect as well." (Participant 10).

The benefits and value system is an emerging new trend as Participant 1 reports that the words "benefit" and "value" have not appeared in any type of project management document until the 6th edition of the PMBOK guide published in 2017. Therefore, PMO is being positioned with the benefits and value system.

"The current position of the PMBOK guide is the first edition that includes the word "benefits realization" and "value manage". Project management has been around since the late 1950s and all of the past almost 50 years the words "benefit" and "value" have not appeared in any type of project management document until the 6th edition of the PMBOK guide. Because we are using project management as a delivery system of creating benefits and values so you can see the intent is to drive project management to more and more of a business environment than a pure project management environment." (Participant 1).

(2) **Resource Cost Management Expectation:** It was observed that businesses are setting expectations for PMOs to diligently perform resource cost management and PMOs are in constant pressure to prove that their resources contribute as a value to the organization. Participant 8 states that PMOs are constantly avoiding to be unfavorably positioned financially if their pool of project managers are unable to prove as a value to the overall profit and loss (P&L) of the company. This constant justification has severely influenced the structure of the PMOs today as the fear of cost-cutting looms over their head constantly. This factor also contributes as one of the reasons why PMOs are unilaterally structured as they are constantly focusing on a single Project Management domain of practice to ensure that each and every resource contributes to the end value.

> *"Cost management, especially staff cost management has been a constant topic in all of the levels. In such an environment, to basically end up in a situation where you need to prove that each and every employee who works in the company contributes of the end value. You know, it is very difficult, especially for the PMO, if the pool of project managers is not there to prove the value to the overall P&L of the company. That's hard to justify. So, normally, this kind of things are led, at least, in the last years by cost management when constant cost cutting, to be very blunt, this part severely influences the structure." (Participant 8).*

(3) **On-Time Delivery is Intangible Value:** Often money is associated with value as value is often perceived as monetary. From the findings, Participant 13 suggests that on-time delivery of services is also regarded as a value to the PMOs. Participant 13 further states that PMOs are justfying as strategic value by delivering faster and better, and by being more efficinent and cost inexpensive. As mentioned in 4.5.2 (1) (c), p.128, that traditional PMOs are geared towards a delivery model, also known as Delivery PMO, and for a delivery model PMO, on-time delivery of projects and programs are key drivers for PMO success as it provides economic value to the organization.

> *"The key driver for the business part of the portfolio where we perform, subdivided into different markets, is to be sure that we deliver the service as fast as possible, meaning we provide economic value to the organization by doing what we are doing. So, we are justifying ourselves, the PMO is justifying itself to provide strategic value in the way we are executing the business. We are doing faster, better, more efficient and cost inexpensive." (Participant 13).*

Key Findings: Businesses are expecting PMOs to exhibit the value of their presence and to diligently perform resource cost management. This has put

tremendous pressure on the PMO to constantly invest effort in proving the value of a PMO in a value system.

4.5.4 Thematic Analysis 4: Communications

This thematic analysis deals with the significance of a communication model that spans both vertically and horizontally within a Project Management Office (PMO) and across Organizational Project Management (OPM) Continuum of practices.

(1) **Communication Sharing System:** From the findings, it was discovered that there is a lack of transparent communication between leadership and grassroots project resources. PMOs are caught in this apparent communication gap and as a result, are not able to develop a communication sharing platform for communicating business strategic objectives and business processes with the PMO resources. Participant 1 explains that executives are hesitant to share information with PMOs in order to retain control of their leadership domains.

> *"It all thrives to communication. It's the ability of these people to share information, including strategic information from the top down. It's the information that is driving it. And, I saw executives that refuse to share information and they wanted control of all the PMOs in their own area." (Participant 1).*

Participant 14 states that further communication gaps exist between functional PMOs where PMOs are not communicating with one another. Functional PMOs are multiple PMO setups within an organization that are developed and owned by respective functional divisions, for example, Strategic PMO, Innovative PMO, Research and Development PMO; these are variations of PMOs with a high degree of complexities. This lack of communication and free flow of information is impacting PMO in their continuous struggle of being transparent.

> *"And the PMOs wouldn't talk to one another. If you want PMOs to work together to meet strategic goals and objectives, the PMOs have to be willing to communicate – there has to be a free flow of information. If the free flow of information isn't there, especially strategic goals and objectives, things like that, and the understanding of how project management is now a business process, you are going to struggle. It's going to be a continuous struggle. So, it's all going to be based upon communication." (Participant 14).*

(2) **Advocative Communication Support:** It was observed that without a strong advocate and support from the leadership, PMOs faced challenges maneuvering through corporate politics. With a strong advocate, advocative communication is critical for the success of a

PMO as many business functional owners prefer to continue managing their operations without interference from an external functional domain, for example, a PMO. Participant 9 shares the experiece where PMOs with a strong leadership advocate and communicative support find it easier to reinforce best practices and provide support and enablement for portfolio, program and project management practices across business functional domains. Unfortunately, there is an apparent lack of advocative communication support from business leadership and advocacy groups within the higher ranking of corporate management. An interesting observation was made. Out of 15 interviews consisting of 7 subject matter experts (SMEs) and 8 practitioners, only 1 confirmed receiving advocative communication support, which simply exhibits that most PMOs lack receiving advocative communication support, which often leads to the failure of the PMOs.

> *"Without our Chief Administrative Officer being advocate for it, you know, everybody wanted to do things their own way, they didn't want to have this discipline and she really provided the rigor cause all these people reported to her said, "No, we are going to do this". And she didn't get involved in the details and all of that. But she just knew it was the best practice and trusted that this was the best practice. And her continual pushing and really reinforcing this got everybody onboard moving in that direction." (Participant 4).*

(3) **Adaptive and Simplified Maturity Communication:** From the findings, it was discovered that PMOs struggle to communicate maturity results to the executives as several assessment models has complex data analysis which isn't easy and simple enough to provide a high-level simplified roadmap that can be quickly adapted. From the interview with Participant 9, it was identified that PMOs are required to develop an adaptive simplified roadmap from the assessment reports. Unfortunately, due to its complexity, PMOs find it very challenging to develop a simplified roadmap that could be easily related to the executive and businesses. As a result, PMOs are shying from performing maturity assessment.

> *"What I realized, though, very quickly is that it was a lot of detailed analysis, kind of asking the same thing over and over again, and I realized that it just had more complexity than we needed at that particular point in time that I needed a tool that I could use very easily, very simply that would tell the story for executives and for the business. And if we've got too much into data and the analysis, it wasn't going to be a value. We needed something that would give us a higher-level roadmap." (Participant 9).*

Most maturity models that PMOs use such as Organizational Project Management Maturity Model (OPM3), Capability Maturity Model

Integration (CMMI), Project Management Maturity Model (PMMM), Kerzner Project Management Maturity Model (KPMMM) only provide assessment result, however, they do not provide an improvement roadmap. For more details on maturity models, please refer to 4.5.6 (3) (a) p.162.

(4) **Lack of Interconnecting Communication:** It was observed that there is a lack of interconnecting communication between the business and the PMOs. Participant 11 explains that PMOs are not perceived with recognition by the peers of business functional departments. PMOs resources feel that they are not recognized as much as their peer professionals are such as Human Resources and Finance within the organization.

> *"Because you will have to perceive that we are not recognized as much as HR people are, as much as Finance people are. Ours is not a practice that is gaining recognition as it has still not reached the level of those of our peer professions." (Participant 11).*

Participant 11 further explains that while the business is working together with PMOs, however, but it appears that each departmental team has its own management agenda and are not connected through communication channels and as a result, the collective value is deemed lost. Due to the interconnecting communication gap, PMOs

are constantly placed into the position of needing to demonstrate their value to the business.

> *"You might be meeting the needs of a specific departmental business head but organizationally that value is lost because you don't have a single narrative. Each one would be explaining basically, do whatever it is doing on a local context but the organization leader needs evidence as you will always need to show by doing and setting up these offices you are producing value. You have to always continuously show the value of what you are trying to do, that is, articulating that value." (Participant 11).*

Key Findings: There is a need for a common communication sharing system due to a lack of transparent communication between leadership and grassroots project resources. There is a need for advocative communication support as PMOs continue to face with challenges maneuvering through corporate politics. There is a need for an adaptive and simplified maturity communication as PMOs are struggling to communicate maturity results to the executives. There is a lack of interconnecting communication between the business and the PMOs.

4.5.5 Thematic Analysis 5: Reporting

This thematic analysis deals with the significance of a reporting structure, its strengths and vulnerabilities, and the role it plays for a successful Project Management Office (PMO) within the Organizational Project Management (OPM) Continuum.

(1) **Major PMO Roles Identified:** PMOs can fill many types of functions and play many types of roles. A research conducted by Aubry and Hobbs investigated 27 functions or roles that a PMO generally fills (Aubry & Hobbs, 2010). However, from the findings, three major PMO functional roles were identified that play a key role in the management and operations of many PMOs. These functional roles are as follows:

(a) **Role Focused on Project Management Tools:** This role focuses on selecting the right tool for the Project Managers to use within a business unit, division or geography. Participant 7 explains that this role ensures to develop a technology platform such as Project Portfolio Management (PPM) technology for their Project Managers to use and their organization to utilize for reporting purposes.

"So, when anybody asks me, like a client, what role a PMO should play – well, I will tell you that as I have said earlier in my response to your structure of the PMO – they play 3 main roles. The ones that I have worked with are 3 main roles. They are all focused on the tools of project

management – selecting the right tools for their purview. When I think purview, Murad, I mean whether that's a business unit, division or a geography." (Participant 7).

(b) **Role Focused on Project Management Process:** Participant 7 explains further that this role focuses on developing a consistent project management process across the organization so that their Project Managers are following the same process (or often called methodology). The PMOs often put in place a reinforcement system to make sure that the Project Managers are actually using the process and PMOs often validate through a project management audit process.

"The next key area of the role they play – and all of them do this – they want to establish a consistent project management process so that all of their project managers are following the same process, think methodology. Some talk about methodology and others don't. So, they do that. And they identify and refine that process and they light it out somehow and they have a system for reinforcement to make sure that the project managers are actually using that process; typically, it comes to PM audits. So, that's number 2 being the process of project management." (Participant 7).

(c) **Role Focused on Project Management Training:** Participant 7 continues to explain that this role focuses on training such as development (coaching and mentoring), career paving and certification. Some PMOs are being pressured to train their Project Managers with the business process along with traditional project management process as businesses are expecting Project Managers to be business savvy.

> *"And the 3rd area, and this ranges quite a bit, I say it is in the development of the project managers. Development comes in a lot of different forms. You know, training is one area of development. Career paving is another area of development. Certification is the third area of development. Coaching, mentoring, shadowing people, you know, there is a wide variety of practices that fall under development but most of the PMOs that I've worked with – that is another one of their major roles. Those are the three that I have seen time and time and time again." (Participant 7).*

(2) **Lack of Domain Experience Resources:** From the findings, it has been discovered that PMOs lack domain experience resources that

have clear understanding and experience to handle project, program and portfolio management altogether.

> *"And one more thing I would like to add is that, Murad, very minimal or basic understanding of project, program and portfolio management actually exist out there." (Participant 10).*

This unfortunate lack of domain experience resources impacts PMOs overall performance as they only have a partial view of the operational OPM Continuum comprising of Project Management, Program Management, and Portfolio Management domains and it makes it very difficult to integrate all of the OPM Continuum processes together.

> *"PMO should be able to handle portfolio, program, and project altogether. So, it should not be an issue. But you need to have, you know, people with the clear understanding and experience with people who come from all areas of the corporation. Because one of the main problems that Project Management Office has, they only have a partial view and it makes it difficult to integrate all process together. So, this is why it is important when you deal with a PMO to have a representative, I call them ambassador of all the functional areas. So, this is the key, I guess." (Participant 3).*

(3) **Lack of Proactive Reporting:** Project monitoring is one of the most critical phases of project management and maintaining an accurate pulse on a project involves significant time and effort on the part of the project manager. (Yosua, White & Lavigne, 2006). In a traditional PMO setting, PMOs are actively occupied in performing status reporting and governance to support on-time delivery of projects (Julian, 2008). From the findings, as expressed by Participant 12, it was discovered that there is a lack of proactive reporting as PMOs are too focused on the functions of delivering periodic status reports, which is deemed reactive rather than proactive.

> *"I think where it falls over is if you just simply just reporting very much after the event has happened, which is not really adding value." (Participant 12).*

The researcher was curious to investigate what was missing that would deem reporting as proactive. It was an interesting discovery that providing on-time report without added value was deemed as reactive reporting approach. Paticipant 12 explains that proactive reporting would include information with added value such as options, directions, and recommendations for leadership to make proper decisions. Therefore, it appears that there is a significant gap or lack in proactive reporting.

> *"If we are the keepers of the data of all the projects, that data has to be available to senior management or people that are*

making decisions to allow them to make proper decision. So, that strength is providing inside to, say, a project is late or program is late is providing that information more than just reporting that it is late by actually providing value add to the senior leadership team, to say things, like, what to do and what are the shifts." (Participant 12).

(4) **Politically Driven Decisions -** From the findings, it has been discovered that PMOs are often victims to politically driven decisions rather than process-driven decisions. While there are governance process built and placed in motion by the PMOs to help executives in their decision-making, however, often decisions are already made before the whole process is complete. The researcher was curious to know where exactly in the OPM Continuum of practice was it politically driven. On further probing, it was also discovered from Participant 14 that it was in the Portfolio Management practice of the OPM Continuum. Often executives, senior managers and managers who held positions in the Portfolio Board would influence the decision-making process through politically driven motives where it was most significant. This is often the case of corporate bad politics that are beyond the control of the PMOs.

"When you go back to governance of projects and programs, well, it's quite difficult to see because it is not in line with the

hierarchy in a normal organizational way. It is about managers and senior managers, sometimes, executives who have roles in the portfolio board. Actually, in the organization that I am in, this is not structured. This is more politics. So, it's more you know the people who are in the portfolio. So, you are able to prepare the decision-making process. So, before the whole process, the decision is already taken. That's what I mean by politics." (Participant 14).

Key Findings: While there are several project management tools, processes, and training that are used, however, PMOs continue to face a lack in resources that have clear understanding and experience to handle project, program and portfolio management altogether. There is a lack of proactive reporting as PMOs are too focused on the functions of delivering periodic status reports without added value such as options, directions, and recommendations for leadership to make proper decisions, which is deemed reactive rather than proactive. PMOs are often victims of politically driven decisions rather than process-driven decisions.

4.5.6 Thematic Analysis 6: Assessment

This thematic analysis deals with the determination of an assessment and measurement practice within a Project Management Office (PMO) with the aim of developing an ongoing continuous improvement practice.

(1) **Lacked in a PMO Maturity Assessment Process:** From the findings, it was discovered that there is a lack of a robust PMO maturity assessment and continuous improvement process. It is evident that there isn't any proper PMO assessment model available for utilization in the USA, UK, and Europe. Therefore, companies in the USA, UK, and Europe are not diligently performing PMO maturity assessment as stated by Participants 4.

> *"I've never been in an organization where we've done regular measurements of PMO maturity. It's something that has really hasn't caught on terribly well in the UK." (Participant 4).*
>
> Although the quote is referenced directly to Participants 4, this view was similarly shared by other Participants in the USA and Europe.

It has been discovered, as stated by Participant 7, that PMOs are using various types of measurement tools like maturity models, satisfaction surveys and statistical data.

"So, there are really many numbers of different ways that they are being measured. They would use any one of a number of maturity models." (Participant 7).

"The other ways that organizations are measuring through customer satisfaction surveys." (Participant 7).

"The way a lot of PMO measure success is simply by bases of statistics." (Participant 7).

These three types of measurements tools are completely different from one another and cannot be used for comparative analysis as the methods, processes and the end results are completely different. For more details on maturity models, please refer to 4.5.6 (3) (a) p.162.

(2) **Irregular OPM Continuum Assessment Process:** Due to the lack of a robust PMO maturity assessment process, it has been discovered that there is an irregular OPM Continuum Assessment Process (OPM Continuum covers the domains of Project Management, Program Management, and Portfolio Management Practices). Participant 7 states that many PMOs are focused on measuring their project management process while only a handful is measuring their program management process. Unfortunately, most PMOs do not measure the portfolio management process at all.

"Many of them focus on measuring their project management process for approach. Only a handful are measuring their

program management approach. And I bet yet anyone measures their portfolio approach; I haven't seen it." (Participant 7).

I wanted to further investigate into this irregularity and an interesting discovery was made. Participant 10 states that the reason for this irregularity is that PMOs are not getting the support form their leadership. Leadership in most companies are found to be less serious as they find the process as a waste of time as their focuses are on delivering the projects on-time.

"Organizations spend millions of dollars in terms of building this capability but they don't do a good job in sustaining it in keeping these processes very strong. They do have processes to measure the maturity of the PMO and at the same time, the seriousness towards is not there. So, I think they need to - my answer to that question that I have seen measures in some organizations while some organizations don't even want to care about it as for them it is a waste of time. So, their focus is literally on delivering the projects and delivering the initiatives, and that's about it." (Participant 10).

Participant 10 continues to explain that there is a lack of a governance process to assist PMOs in empowering continuous improvement process. There is also a lack of priority from the leadership in improving the PMO process.

"There is no governance process around this overall thing, which can make them understand how they can refine their processes going forward. So, there are measuring processes, however, the seriousness is not there." (Participant 10).

On further probing, it was also discovered that the lack of seriousness is due to lack of commitment from the leadership. Participant 10 further states that while the leadership is committed to having PMO focused on the delivery of projects as a function, however, their level of commitment and sponsorship fades away beyond the function of the delivery. Unfortunately, there is no annual objective of the leadership who are managing these organizations in making sure that the PMO processes or the OPM processes in their organizations are continuously addressed and improved. Sadly, it is not on their agenda.

"I've seen in my experience people are very excited, very committed in terms of delivering the PMO, delivering the PMO processes but once delivered, their level of commitment and their level of sponsorship fades away. The only best answer that I can see is that it should be in the annual objective of the leadership who are managing these organizations in making sure that the PMO processes or the OPM processes in your organizations were continuously addressed and improved." (Participant 10).

(3) **Varying Degree of Assessment and Continuous Improvement Process:** It was identified that there is a varying degree of the assessment process that is being used by PMOs, most common measurement tools. These measurement tools differ greatly from one another and cannot be used as comparatives as it would be comparing apple to an orange. These measurement tools are as follows:

(a) **Maturity Models** such as Organizational Project Management Maturity Model (OPM3), Capability Maturity Model Integration (CMMI), Project Management Maturity Model (PMMM), Kerzner Project Management Maturity Model (KPMMM) and Portfolio, Programme and Project Management Maturity Model (P3M3), are being used by PMOs as measurement tools.

i. **OPM3** was developed by the Project Management Institute (PMI). It has William Deming's & KAIZEN's Quality Approach and has embedded continuous improvement process in its maturity model called "Stages". OPM3 involves viewing Best Practices in terms of their association with the progressive stages of process improvement (PMI, 2013). Participant 7 states that he has observed organizations use OPM3 to assess maturity.

"So, there are really many numbers of different ways that they are being measured. Again, it varies and it varies

based on a size of a company, their maturity within overall OPM. The way that I have seen it - certainly some organization have used OPM3, for example, to do that." (Participant 7).

ii. **CMMI** was developed by Carnegie Mellon University and Software Engineering Institute (SEI). It developed in 1986 to assist the Department of Defense (DOD). Due to the confusion of multiple improvement iterations, SEI retired CMM and replaced it with CMMI (Batten, 2008). Participant 7 continues to elaborate that CMMI is also used as a measurement tool besides OPM3.

"They have used CMMI, you are familiar with that, I would think. They are using that, those kinds of measurements, benchmarks, you know, quality tools." (Participant 7).

iii. **PMMM** is a tool developed by PM Solutions and used to measure an organization's project management maturity. PMMM follows the CMMI Model's five evolutionary maturity levels and examines maturity development across ten knowledge areas in the PMI's PMBOK (Kent, 2015). Participant

9 shares the experience in using PMMM as a measurement and benchmarking tool for assessing maturity.

> *"So, the benchmarking tool that we use by PM Solutions and it was actually recommended by a colleague of mine from Siemens and it was tool that they used and Kent Crawford is the author of that book, yeah sitting right there, Project Management Maturity Model. So, I just got the book, easy read, had a 5-level chart out there, like lots of maturity models have." (Participant 9).*

iv. **KPMMM** presents itself as an extension of the CMMI model, focused on the field of project management. KPMMM is made up of CMMI Model's five levels of maturity combined with the area structure of PMBOK (Karzner, 2005). Participant 7 states KPMMM as another maturity tool that is used for assessing maturity.

> *"They would use any one of a number of maturity models. Kerzner has his own. Dr. Kerzner was my colleague at IIL and has the Kerzner approach." (Participant 7).*

v. **P3M3** was developed by the Office of Government Commerce (OGC), a department within the UK Government with a remit to

help public sector organizations improve their efficiency, gain better value for money from procurements and deliver improved success from programs and projects. P3M3 incorporates cross-pollination model approach using CMMI model with its five-level maturity framework while integrating across portfolio, program and project management maturity models (Murray, 2006). Participant 13 shares the experience of using P3M3 as a measurement tool for assessing maturity.

> *"So, what I've tried in different company was the PRINCE2 family, something that's called P3M3. It's kind of an assessment model. For the 3 P's, it is project, portfolio, and program." (Participant 13).*

(b) **Satisfaction Surveys** such as Net Promoter Score (NPS) are also being used as another form of measurement. NPS measures customer experience and is widely used across the business world today. NPS is calculated based on the survey responses of a likelihood-to-recommend question on a 0–10 scale. This question is "How likely is it that you would recommend 'a company' to a friend or colleague?" The rank of 10 means the customer is very likely to recommend a company to someone, while zero means that the client is unlikely to recommend a company to someone, and five is neutral (Korneta, 2018).

Participant 7 states satisfaction survey, such as net promoter score, as another maturity tool that is used for assessing maturity.

> *"The other ways that organizations are measuring through customer satisfaction surveys. They'll use the net promoter score, for example, so, they'll use that." (Participant 7).*

(c) **Statistical Data** is also being used as another form of measurement. Participant 7 mentions that PMOs will collect various project info data such as scope, time, and cost data. They would compare that to prior years to see how well they are doing. While is purely a statistical measurement format, there are various processes around performing this measurement.

> *"The way a lot of PMO measure success is simply by bases of statistics. Others will collect various project info data such as scope, time, and cost data. They would compare that to prior years to see how well they are doing." (Participant 7).*

Participant 13 shares the experience of measuring PMO by using key performance indicator (KPI). Participant 13 continues to elaborate that the method used to demonstrate value using

monetary and time data as KPI is more business-related than OPM3.

> *"So, in this company, I've chosen differently. I've chosen to show business results. It is in terms to show that how faster a typical program is running. I show the penetration value basically using as much as monetary and time indicator KPI as possible that is more business related than OPM3 measurements by the books." (Participant 13).*

I was curious to investigate how KPI is used and discovered that there are various KPI measurement formats. In one of the interviews, KPI was jointly developed in collaboration with PMO and internal business parties, and it is used to measure how successful projects are executed, monitored and delivered.

> *"To measure the PMO, we use internal KPIs, which we appraised out together. So, those KPIs are not something established by some authority; it's something which is agreed between PMO and other parties involved. So, basically, we have different KPIs. Measure for KPI, for us, is how successful customer projects are around. That's how the PMO is measured." (Participant 15).*

(4) **Unrealistic OPM Maturity Comparatives:** It has been discovered, as stated by Participant 6, that companies are unrealistically comparing their performance with performances of model companies or maturity of the industry without realizing that OPM maturity of a company varies from one organization to another. The reason companies are engaging in such a comparative behavior is that they are determined to gain quick success by observing model companies and replicating their maturity behavior through comparatives without taking into consideration that they are not any closer to the model companies. OPM maturity is very specific for each company and such comparatives are considered unrealistic.

> *"I think it is a mistake that many companies do when they are working with OPM and trying to evolve their organizational maturity is how they are eager to compare their performance with the performance of other companies. And, the other point is that when you are eager to compare your maturity with the maturity of other company or the maturity of the industry, you are not considering that maturity is something that is specific for each company." (Participant 6).*

Key Findings: While there are several measurement tools that are being used by PMOs, there is a lack of a common and consistent PMO Maturity Assessment Process. As a result, PMOs are not religiously performing PMO maturity

assessment. Due to the lack of a robust PMO maturity assessment process, it has been observed that there is an irregular OPM Continuum Assessment Process covering the domains of Project Management, Program Management, and Portfolio Management Practices. It has been discovered that many PMOs are focused on measuring their project management process while only a handful is measuring their program management process. Unfortunately, most PMOs do not measure the portfolio management process at all. Companies that are enthusiasts to raise their maturity bar are practicing unrealistic OPM maturity comparatives.

4.5.7 Thematic Analysis 7: PMO Failure

This thematic analysis deals with the determination of interconnectivity gaps within the Organizational Project Management (OPM) Continuum of practices that lead to Project Management Office (PMO) failures.

(1) **Lack of Understanding by Executives:** It has been observed that there is a significant lack of understanding of the OPM Continuum of practice comprising of Project Management, Program Management, and Portfolio Management domains and their interconnectivity. Participant 13 states that while executives seem to understand project management and are able to relate to portfolio management as a

commonly known business word, it appears that program management is least understood.

> *"They are very familiar with the project management. They are not very familiar with the word "program" or "portfolio". Particularly the program is not well understood." (Participant 13).*

With reference to portfolio management, Participant 7 states that most executives believe that portfolio management is just a list of projects and programs but have challenges distinguishing between projects and programs. This is further elaborated in Section 4.5.1 (4) p.120.

> *"However, what I have noticed is that on the top management, they are not so clear. Like the definitions of the project, of the program, of the portfolio. So, normally they understand the portfolio is the sum of all of the projects that they have but having a more nuanced kind of way of distinguishing for example projects versus programs is somehow missing." (Participant 8).*

I was curious to investigate the root cause behind this apparent lack of understanding by executives and I discovered, based on the comments made by Participant 8, that leadership is less concern of the intricacies of how projects and programs are organized. In other words, executives try to avoid getting into the details. This apparent lack of participation by the executives in partnership with PMOs is a

contributing factor for the knowledge gap. Participant 2 adds that the lack of understanding by executives is considered a significant cause of project failures.

> *"And to be perfectly honest, I don't think that they care whether something is organized as a program or a project, as long as something is done. The top management normally doesn't care." (Participant 8).*

> *"Today, in spite of widespread knowledge of the state of the art of project management, powerful systems for project planning and control, and experienced project managers and support staffs, far too many project failures are reported in professional journals and the popular press. The lack of understanding by executives of the nature and power of project, program, and portfolio management is a significant cause of these project failures and this leads to many of the project failure symptoms widely reported and discussed in professional articles." (Participant 2).*

(2) **Lack of Delivery Expectation:** It has been discovered, as stated by Participant 6, that there is a lack of delivery expectations as PMO heads that are managing PMOs are busy delivering what they want and not what they need to deliver.

"There are many people that try to run PMOs that deliver what they want and not what they need to deliver. They deliver what they believe a PMO should deliver and instead of focusing on benefits that are expected by the PMO stakeholders." (Participant 6).

As a result, PMOs are unable to focus on delivering benefits that are expected by the PMO stakeholders. There are several causes for this gap, however, a major cause that has been identified, as stated by Participant 6, that it is due to the lack of strong sponsorship, which often leads to unclear expectation, deliverables, and PMO accountability.

"Some people say that lack of sponsorship is a cause for PMO failure. I believe that lack of sponsorship is sometimes a symptom. It is a consequence of the fact that you are not delivering the expectations." (Participant 6).

(3) **Lack of Business Ownership:** It was discovered that there is a lack of business ownership as PMOs were often caught in cross-functional business ownership responsibilities that should have been owned by the business. Participant 9 explains that often business would toss their project ownership and business decisions to the PMO as part of the information technology (IT) function as soon as it was discovered that the project had an IT component. Technical professionals are

expected to make business decisions along with supporting technology enablement, which often caused serious implication to the tenure of the business projects. Unfortunately, the lack of business ownership is a significant contributing factor for project failures and negatively reflects PMOs' ineffectiveness in preventing such failures.

> *"As my background is IT and Finance, and I've worked in those areas and I've seen wherein the organization projects were getting approved by leadership and they were throwing over to IT and were saying "you guys do it – it's a project and it has IT component" – and what I recognized since I have business and IT background that this wasn't really fair to IT, that you know, you are asking a technical professional to do a business project so I certainly got involved in the project management as I came into it as from a business perspective thinking, you know, the business really has to own and drive and make the business decisions as the IT technical component is trying to support and enable – not just throwing it to a group that may not be familiar with the business. So, by doing that we actually succeeded in some of the projects that I was working on and really rescue a few of them." (Participant 9).*

(4) **Lack of PMO Engagement with Leadership:** From the findings, it appears that PMOs are not as engaged or involved as they should have been with leadership in strategic conversation. It has been observed that PMOs are not involved with leadership during the formulation of strategies or building of roadmap capabilities. Such an unfortunate absence of partnership between PMO and Leadership puts PMOs in a rather disadvantaged position. The unfortunate lack of insight and visibility of upcoming strategic changes restricts PMO in preparing and enabling themselves to accommodate the change gracefully and communicate to the PMO team.

> *"So, the other challenge that I'm seeing is that PMO is not taken as strategic as they should be. So, what I'm trying to come at that whenever the large enterprises are talking about, are basically talking about their strategies, or formulating their strategies or building their capability roadmap, PMOs are not normally in those conversations. I think the effect would be to have PMOs to be involved during the strategy buildout or strategy formulation process, you know, gives PMO a view of things coming in the organization they can better structure themselves, they can better do communication and all that kind of stuff." (Participant 10).*

Key Findings: Several factors have been discovered that lead to PMO failures. First, there is a lack of understanding by executives. Second, there is a lack of delivery expectations as PMO heads that are managing PMOs are busy delivering what they want and not what they need to deliver. Third, there is a lack of business ownership as PMOs were often caught in cross-functional business ownership responsibilities that should have been owned by the business. Fourth, there is a lack of PMO engagement with leadership as it appears that PMOs are not as engaged or involved as they should have been with Leadership in strategic conversation. As a result, PMOs are not involved with leadership during the formulation of strategies or building of roadmap capabilities.

4.5.8 Thematic Analysis 8: Challenges & Risks

This thematic analysis deals with the determination of challenges and risks that coexist in a Project Management Office (PMO) setting leading to the interconnectivity gaps within the Organizational Project Management (OPM) Continuum of practices.

(1) **Too Many Variations of PMOs:** From the findings, it has been identified that there are too many variations of PMOs. These variations differ in the types of setups and the degree of complexity may differ. Participant 1 states that some organizations have PMO that is set up

to operate within a single domain of practice such as a Project Management Office focusing on Project Management domain of practice or Portfolio PMO focusing on Portfolio Management domain of practice.

> *"We have traditional PMOs that focus on project management. We have Portfolio PMOs that look at just strategic projects and the portfolio." (Participant 1).*

This model is known as **"Single PMO"** and this is a typical traditional PMO model. Participant 1 states further that the degree of complexity increases when there are multiple PMOs setups within an organization that are developed and owned by respective functional divisions, for example, there could be an Innovation PMO, Research and Development PMO; variations of PMOs with a high degree of complexities.

> *"We have Innovation PMOs that look at only those projects that are involved in innovation in the company. So, we are putting together different types of PMOs and we are hoping that the PMOs talk to one another." (Participant 1).*

This model is known as **"Multiple PMO"** and this type of PMO model is often established in very large organizations.

(2) **Over-Implementing of Practices:** It has been discovered that PMOs are over implementing practices. Organizations develop PMOs with

specific success models in mind and replicate processes that may not be required for specific delivery of benefits to the stakeholders. It has been identified that several built-in processes from a predefined PMO model includes practices that were specific to the needs of the model developer, and therefore, may not be suitable for its current situation. PMO models are agnostic in nature and do not take into consideration of the industrial base, corporate strategy, cultural awareness, and geographical presence of companies that are using the model. It is developed with the intention of one size fits all strategy model and this type of replication of unwarranted practices creates an over-implementation factor that often becomes high risk to the overall success of a PMO as explained by Participant 6.

> *"If you try just to follow a specific model, believing that PMOs should do this and do that, you are assuming a risk of delivering benefits that people don't want and they don't expect. You have to do what people really need, what your stakeholders really need. People will perceive it with something not really practical, you know, because you were over, you know, over-implementing practice that is not really needed by your organization." (Participant 6).*

(3) **Managing People and Knowledge Centric:** Managing people is one big effort but managing intellectuals with differing minds and opinions

is a beast of its own. It has been observed that it is often a challenge to manage people who have a part in an organizational change to come to a common understanding of a PMO and what it takes to be successful. There are two types of intellectual groups; one is the leadership intellectual group while the other is the grassroots intellectual groups. The leadership group comprises of executives who are politically well positioned within an organization. Participant 7 addresses this group as “Powerful People”. The grassroots group comprises of project managers, program managers, portfolio managers, and resources that work directly on a project or a program (these are the busy worker bees). Participant 7 addresses this group as “Less Powerful People”. From the findings, it has been noted that while it is a challenge to manage the grassroots group to a common knowledge domain for the continuum of project management, program management, and portfolio management practices, however, it becomes exceptionally difficult to manage powerful people who are politically well positioned within an organization.

> *“The challenge is trying to wrangle all of these people who have a part on all of this together to come to a common understanding as to how you are going to do it. So, the challenge is not technical, obviously, it is an organizational challenge and in organizations, there are power centers and there are powerful people and there are less powerful people and I think the key challenge to an organization is to have*

some type of a, I use John Carter's words, a guiding coalition of influential executives that realize that there are opportunities for gaining here if we get this right and having this guiding coalition spearhead an improvement effort." (Participant 7).

(4) **Lack of Change Management:** From the findings, it appears that PMOs are not effectively managing change management aspect, which is a large part of the PMO initiative as PMO itself is a change management or a change driven initiative. Participant 10 states that there is a strong change management aspect of having a PMO. This possesses a risk to the overall PMO operations as change management communications are not made effectively across the organization.

"PMO itself is a change management or a change driven initiative. There is a strong change management aspect of having a PMO. The other challenge that I was referring to, that, you know, when a company which is, when an organization is building a PMO from scratch, the change management aspect or the communication management aspect of the PMO is not being done effectively." (Participant 10).

(5) **Lack of Time Investment:** From the findings, it was discovered that there is a lack of time investment from leadership. Participant 12 explains that leadership is too impatient when building a PMO. PMOs are built without long term strategy but instead focus on achieving short-term quick goals. This unfortunate short-term agenda creates short-sightedness, which doesn't work well for PMOs. For PMOs to be effective, it requires a long term strategy, leadership buy-in, leadership engagement, leadership patience and time investment for PMOs to develop and foster maturity growth over time. PMOs are a long term proposition.

> *"Challenges, I think, is corporation do not invest enough time. They put in a PMO, okay we'll get a bunch of project managers together and boom, here's a PMO. Let's go, okay, we've got a PMO. Well, a problem is that it takes time and history for the PMO to be effective. It also needs leader buy-in to be able to get that time. And the leaders often have to understand that you are not going to get anything for free right away. Where it comes into strength is over time and it allows you to implement long term strategy and thinking as well. The trouble is the short-sightedness just does not work with the PMO. PMO is a long-term proposition and sometimes leaders are too impatient for that to happen." (Participant 12).*

Key Findings: There are too many variations of PMOs. These variations of PMOs add a high degree of complexities where the risks of communications, processes, competencies of interconnectivity are lost. Organizations develop PMOs with specific success models in mind and replicate processes that may not be required for specific delivery of benefits to the stakeholders. Such development of one size fits all strategy model and replication of unwarranted practices creates an over-implementation factor that often becomes a high risk to the overall success of a PMO. There is a lack of time investment from leadership as leadership is often too impatient. For PMOs to be effective, it requires a long-term strategy, leadership buy-in, leadership engagement, leadership patience and time investment for PMOs to develop and foster maturity growth over time.

4.6 Summary

In this chapter, the findings were presented in eight identified themes. **Theme One - "Strategy"** deals with the significance of a strategy model, its alignment in a PMO setting and its relationship with its interconnecting practices within the OPM Continuum. Theme one ended with findings that there is a lack of strategic linkage resulting in a significant strategy model gap in a PMO setting and within the OPM Continuum. It is proposed that this is due to the lack of maturity and lack of domain knowledge and understanding. OPM interconnectivity is

missing as leadership are not fully aware or engaged closely with OPM Continuum of practice consisting of Project Management, Program Management, and Portfolio Management.

Theme Two - "Structure" deals with the significance of a PMO structure and its relationship with the interconnecting practices within the OPM Continuum. Theme Two ended with findings that PMOs are structured unilaterally rather than multilaterally because they are more focused on the Project Management domain of practice at an operational level. Organizations are trending towards a prescriptive approach in structuring a PMO while PMOs are being replicated using a prescriptive approach with the assumption that one size fits all without consideration of its current situation, its industrial base, its corporate strategy, its cultural awareness, and its geographical presence whether it is local or global.

Theme Three - "Benefits Realization" deals with the significance of a value system model within a PMO that evaluates its relationship with interconnecting practices within the OPM Continuum. Theme three ended with findings that businesses are expecting PMOs to exhibit the value of their presence and to diligently perform resource cost management. This has put tremendous pressure on the PMO to constantly invest effort in proving the value of a PMO in a value system.

Theme Four - "Communications" deals with the significance of a communication model that spans both vertically and horizontally within a PMO and across OPM Continuum of practices. Theme four ended with findings that there is a lack of interconnecting communication between the business and the PMOs.

There is a need for a common communication sharing system due to a lack of transparent communication between leadership and grassroots project resources. There is a need for advocative communication support as PMOs continue to face with challenges maneuvering through corporate politics. There is a need for an adaptive and simplified maturity communication as PMOs are struggling to communicate maturity results to the executives.

Theme Five - "Reporting" deals with the significance of a reporting structure, its strengths and vulnerabilities, and the role it plays for a successful PMO within the OPM Continuum. Theme five ended with findings that there is a lack of proactive reporting as PMOs are too focused on the functions of delivering periodic status reports without added value such as options, directions, and recommendations for leadership to make proper decisions, which is deemed reactive rather than proactive. PMOs are often victims of politically driven decisions rather than process-driven decisions. While there are several project management tools, processes, and training that are used, however, PMOs continue to face a lack in resources that have clear understanding and experience to handle project, program and portfolio management altogether.

Theme Six - "Assessment" deals with the determination of an assessment and measurement practice within a PMO with the aim of developing an ongoing continuous improvement practice. Theme six ended with findings that there is a lack of a common and consistent PMO Maturity Assessment Process. As a result, PMOs are not religiously performing PMO maturity assessment. Due to the lack of a robust PMO maturity assessment process, it has been observed

that there is an irregular OPM Continuum Assessment Process covering the domains of Project Management, Program Management, and Portfolio Management Practices. It has been discovered that many PMOs are focused on measuring their project management process while only a handful is measuring their program management process. Unfortunately, most PMOs do not measure the portfolio management process at all. Companies that are enthusiasts to raise their maturity bar are practicing unrealistic OPM maturity comparatives.

Theme Seven - "PMO Failure" deals with the determination of interconnectivity gaps within the OPM Continuum of practices that lead to PMO failures. Theme seven ended with findings that several factors have been discovered that lead to PMO failures. First, there is a lack of understanding by executives on PMO and OPM Continuum of practices. Second, there is a lack of delivery expectations as PMO heads that are managing PMOs are busy delivering what they want and not what they need to deliver. Third, there is a lack of business ownership as PMOs were often caught in cross-functional business ownership responsibilities that should have been owned by the business. Fourth, there is a lack of PMO engagement with leadership as it appears that PMOs are not as engaged or involved as they should have been with Leadership in strategic conversation. As a result, PMOs are not involved with leadership during the formulation of strategies or building of roadmap capabilities.

Theme Eight - "Challenges and Risks" deals with the determination of challenges and risks that coexist in a PMO setting leading to the interconnectivity gaps within the OPM Continuum of practices. Theme eight ended with findings

that there is a lack of time investment from leadership as leadership is often too impatient. Organizations are developing PMOs with specific success models in mind and are replicating processes that may not be required for specific delivery of benefits to the stakeholders. Such development of one size fits all strategy model and replication of unwarranted practices creates an over-implementation factor that often becomes a high risk to the overall success of a PMO. There are too many variations of PMOs and these variations of PMOs add a high degree of complexities where the risks of communications, processes, competencies of interconnectivity are lost.

This chapter has detailed the findings with thorough coverage of the thematic analysis with key findings covering all eight identified themes aligned to address the three research questions. This chapter concludes with a view that there is a number of significant gaps within the interconnecting relationship of the OPM Continuum consisting of project management, program management, and portfolio management practices. Finally, this chapter fulfills objective 2 of this research paper as discussed in the Aims and Objectives in Section 1.3, p.5. Objective 2 explores wherein the PMO process the interconnecting relationship of the OPM Continuum is lost or broken and identifies the gaps. The key findings and fulfillment of objective 2 conclude this chapter.

5 DISCUSSION

5.1 Introduction

This chapter discusses the findings established in the last chapter. It provides a thread of interconnectivity that bridges between the findings chapter, the conclusions and recommendations. The chapter aims to accomplish two objectives as follows:

1. It aims to discuss the key findings covering all eight themes and present their contribution to the theory.
2. It aims to focus on themes and identify significant contributors to the practice as “outcomes”.

The chapter begins with outlining the purpose of the research. The chapter progresses with a review of the findings covering all eight themes understood from the analysis of the interviews. It then decontextualizes the findings back into the literature by comparing the outcomes of this study with those evident in the literature and presents their contribution to the theory.

The chapter proceeds to identify contribution to theory as well as identifying significant contributors to the practice as “outcomes”. It focuses on two outcomes that are key contributors to the practice. These two outcomes are (1) Organizational Project Management (OPM) Continuum Interconnectivity and (2) Project Management Office (PMO) Maturity and Continuous Improvement. In

these two outcomes, the researcher identifies key discoveries that are important to the PMO/OPM Continuum of practice and provides the reader with an explanation of a conceptual model as a significant contribution to the practice. The benefits reaped by this conceptual model will empower PMO practitioners with the knowledge to improvise OPM Continuum consisting of project management, program management, and portfolio management practices globally.

5.2 Purpose of the Research

The research was undertaken to understand why annual reports on OPM Continuum of practices continue to exhibit yearly poor performances despite surveys conducted by Price Waterhouse Coopers (PWC, 2014) and continues to paint a rosy picture that organizations with PMO capabilities should accelerate project competency for organizations in their overall drive towards project management excellence. This led to the research's three aims and objectives, as follows. (1) The need to understand OPM Continuum and its interconnected relationships, and to explore where in the process the interconnection is lost or the relationship is broken, if any. (2) If there are gaps, then the research findings should be able to pinpoint the gaps. (3) And to identify possible improvement and recommendation approaches if gaps are identified in Objective 2.

5.3 Discussion Approach

This discussion is arranged in two parts. In the first part, the discussion spans covering all eight themes understood from the analysis of the interviews. It then decontextualizes the findings back into the literature by comparing the outcomes of this study with those evident in the literature and presents their contribution to the theory. The entire discussion in the first part of the group is organized under “Contribution to Theory”. In the second part, the discussion takes a deeper dive and focuses on outcomes that are significant contributors to the practice. The objective is two-fold. In the second part, the discussion aims to provide arguments and consideration that would (1) improve practice and solve real and complex problems in the real world and (2) enable professional and organizational development and growth. The entire discussion in the second part of the group is organized under “Contribution to Practice”.

5.4 Contribution to Theory and Practice

In a research article on the quality of a research thesis, Zuber-Skerrit & Fletcher (2007) identify two quality characteristics of a researcher’s contribution to knowledge in theory and practice. Zuber-Skerrit & Fletcher further elaborate that quality research should (1) contribute something new to knowledge in theory and practice, and it needs to (2) advance knowledge, not only in theory but in practice towards professional and organizational development and growth. Zuber-Skerrit & Fletcher provide a confirmatory reference to a Doctor of Business Administrative

(DBA) program with Business School of Netherlands whereby these quality characteristics were supported. Therefore, it is imperative for this research to exhibit contributions that meet the two quality characteristics; i.e. that the knowledge contribution to theory and practice is new and it advances knowledge taking it to the next level of professional and organizational development and growth. For this reason, it is significant to clearly identify these contributions in a systematic manner.

Firstly, a review of the findings covering all eight themes will be made. It will examine through a detailed consideration of the findings comparing the outcomes of the study with those evident in the PMO/OPM literature if the findings support, doesn't support or is considered a new discovery. This process will identify and provide coverage of contributions made to the theory. Secondly, contribution to practice will need to be identified. This will be achieved from analyzing contributions made to the theory and by identifying themes that are deemed significant contributors to the practice as "outcomes". Two outcomes have been identified and they are (1) OPM Continuum Interconnectivity and (2) PMO Maturity and Continuous Improvement. Any theme which is deemed a significant contributor to the practice will be captured as part of Outcome 1 or 2 as depicted in the figure below.

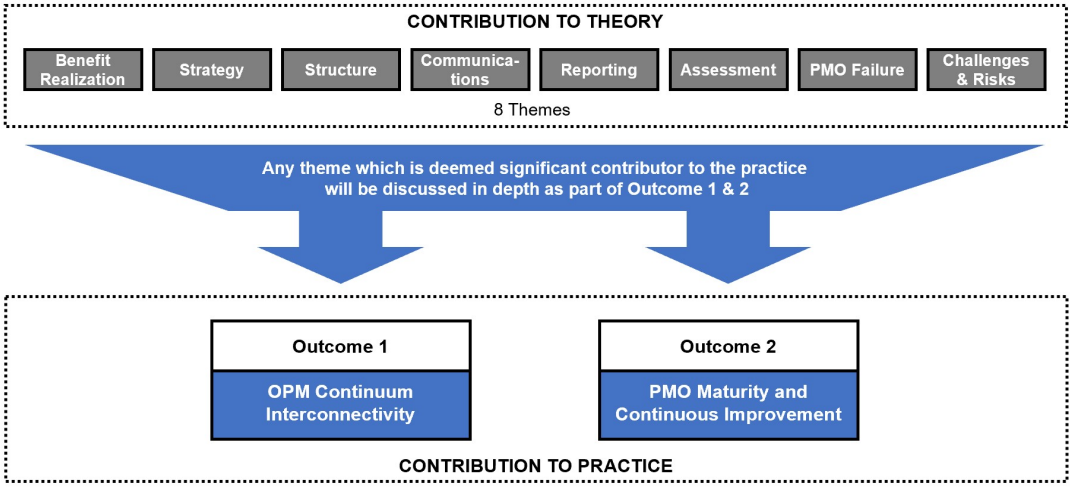

Figure 18 - Contribution to the Theory & Practice Model

Source: Author's Own Analysis

5.5 Contribution to Theory

Zuber-Skerrit & Fletcher (2007) further explain that knowledge contribution to theory is achieved by filling the gap in the literature. This is an important step as the information that fills the gap should advance knowledge to the next level and be able to contribute knowledge towards solving a real complex problem in the real world. This is achieved by examining all eight themes through a detailed consideration of the findings comparing the outcomes of the study with those evident in the PMO/OPM literature to establish whether the findings support, do not support or point to a new discovery. This process provides an added value to both the theory and practice as depicted in the diagram below.

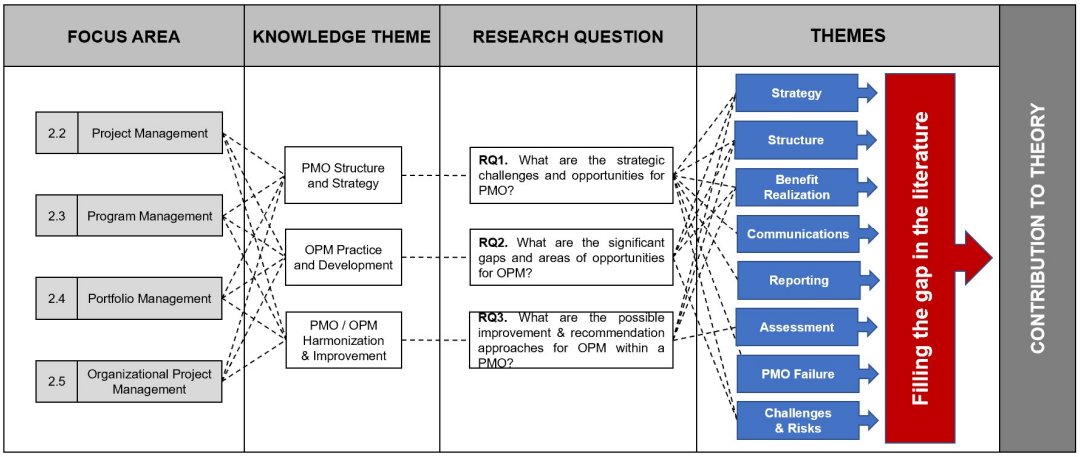

Figure 19 - Summary Map of Contribution to Theory

Source: Author's Own Analysis

5.5.1 Strategy

This theme deals with the significance of a strategy model, its alignment in a PMO setting and its relationship with its interconnecting practices within the OPM Continuum. The strategy model in PMO is evolving as businesses are expecting PMOs to include a delivery system for achieving strategic corporate objectives. Businesses are expecting PMOs to have strategic business alignment so that project managers can successfully make business decisions as well. However, it was evident that this was simply not the position. The findings revealed that there is a lack of strategic linkage resulting in a significant strategy model gap in a PMO setting and within the OPM Continuum. It is proposed that this is due to the lack of maturity and lack of domain knowledge and understanding. This finding supports a study undertaken by Rao (2005) which indicates that the lack of maturity and domain knowledge can lead to serious deficiencies such as a lack of

understanding of the difference between project and process management. This can result in model gaps and the lack of knowledge foundation that creates a barrier to understand the benefits of the OPM strategic model. My findings have also identified that PMOs do not have an active portfolio management practice or process embedded as they are focused on running projects and programs; hence, they are not maturing to the next level. This finding is deemed as a significant contributor to the practice and will be discussed in more depth in the **Outcome 1: OPM Continuum Interconnectivity** section.

It was also discovered through the findings that OPM interconnectivity is missing as leadership are not fully aware or engaged closely with OPM Continuum of practice consisting of project management, program management, and portfolio management. This finding supports a study by Carroll, Levy & Richmond (2008) which showed that there is a lack of know-how on the part of leadership practitioners in the area of leadership. This is because while they are able to articulate the abstract ideals (vision, inspiration, commitment and so on) of leadership readily, they are, however, at a loss when the hands-on work is required of them in practice. Therefore, they are often not fully engaged especially in the space of project management, program management, and portfolio management domain of practices.

5.5.2 Structure

This theme deals with the significance of a PMO structure and its relationship with the interconnecting practices within the OPM Continuum. The success of a PMO relies on its strong integrative network and partnership with business management. It cannot operate as an isolated island within an organization. Therefore, its structure and the network of a complex relationship with the interconnecting practices are paramount to the overall success of the PMO (Aubry et al., 2007). There are two types of structures that connect to interconnecting practices. These two structures are (1) Unilateral PMO and (2) Multilateral PMO. A unilateral PMO functions within a single domain of practice such as Project Management while multilateral PMO functions within the continuum of all three domains of practice such as Project Management, Program Management, and Portfolio Management. The findings revealed that PMOs are structured unilaterally rather than multilaterally because they are more focused on the Project Management domain of practice at an operational level. This is a new discovery which, it is submitted, has a significant contribution to PMO/OPM knowledge and also practice. This finding is deemed as a significant contributor to practice and will be discussed in more depth in the **Outcome 1: OPM Continuum Interconnectivity** section. It was discovered through the findings that organizations are trending towards a prescriptive approach in structuring a PMO while PMOs are being replicated using a prescriptive approach, with the assumption that one size fits all. This presumption at worst denies and at best overlooks consideration of the current situation, industrial base, corporate

strategy, cultural awareness, and geographical presence whether it is local or global. This finding is deemed as a significant contributor to the practice and will be discussed in more depth in the **Output 2: PMO Maturity and Continuous Improvement** section.

5.5.3 Benefit Realization

This theme deals with the significance of a value system model within a PMO that evaluates its relationship with interconnecting practices within the OPM Continuum. Project management is evolving into becoming a delivery system for creating benefits and value. This model is changing the landscape of project management today. The findings reveal that there is a sense of expectation from the business to see the value and to generate benefits. Project managers are no longer paid to produce a deliverable. Project managers are paid to create benefits and value. This finding supports a study by Hurt & Thomas (2009) on how PMOs are connected to value realization. The value project consisted of 65 organizations in a study on how PMOs are connected to value realization for organizations investing in project management. The study showed that organizations placed the highest value on the return on investment, followed by business outcomes as part of their PMO performance. Ward & Daniel (2013) discovered that senior management is less tolerant of poor PMO performance when a PMO is in place and Stanleigh (2006) has found that PMOs are shut down when they fail to demonstrate their value. This has put inevitable pressure on the PMO to constantly invest effort in proving the value of a PMO in a value system.

5.5.4 Communications

This theme deals with the significance of a communication model that spans both vertically and horizontally within a PMO and across OPM Continuum of practices. Companies are focusing on benefit realization and value realization. This has put tremendous pressure on the PMO to constantly invest effort in proving the value of a PMO in a value system. According to a KPMG survey, PMOs are often misunderstood or perceived to be ineffective due to their failure in demonstrating their value to the organization, or that their value is not recognized (KPMG, 2013). Therefore, interconnecting communication between business and PMO is critical in demonstrating its value. However, the findings revealed that there is a lack of interconnecting communication between the business and the PMOs. There are two types of interconnecting communication. These two types are (1) Formal Communication, which is hard skills in the form of a common communication sharing system and (2) Informal Communication, which is soft skills in the form of advocative interpersonal skills supported by leadership.

It appears that PMOs are not perceived with recognition by the peers of business functional departments. PMOs resources feel that they are not recognized as much as their peer professionals. It is evident that the communication gap is impacting its collective value as it is found to be lost through the communication channels. This finding supports a multi-case explorative study by Aubry, Müller & Glückler (2013) on a relational typology of PMO. The study examines communication pattern including formal and informal communication

structures between business and PMOs. The researchers discovered that the unwillingness to support communication structures within a PMO resulted in a gap of formal and informal communication between business and PMOs. It resembled a common pattern found in the findings that showed a similar lack of communication support between the business and PMOs.

My findings have also identified that there is a need for a common communication sharing system due to a lack of transparent communication between leadership and grassroots project resources. Aubry, Müller & Glückler (2013) observed a similar gap and noticed that a communication system through a shared intranet-based communication platform increased the speed of formal and informal communication between the PMOs, business leadership and project managers significantly. My findings have also identified that there is a need for advocative communication support as PMOs continue to face with challenges maneuvering through corporate politics. Aubry, Müller & Glückler (2013) found that the lack of communication support resulted in political “turf fights” which positioned PMOs in a rather disadvantaged position. This was resolved through a reciprocal communication environment and an acceptance of PMO communication hierarchy as part of advocative communication support.

5.5.5 Reporting

This theme deals with the significance of a reporting structure, its strengths and vulnerabilities, and the role it plays for a successful PMO within the OPM

Continuum. The findings revealed that there is a lack of proactive reporting as PMOs are too focused on the functions of delivering periodic status reports without added value such as options, directions, and recommendations for leadership to make proper decisions, which is deemed reactive rather than proactive. This finding supports PWC's Global Service Catalogue (2017) which exhibits that 63% of PMOs are spending most of their time in delivering periodic status reports. PWC proposes to raise the reporting bar to incorporate proactive reporting for leadership to make the right decisions, which is critically missing in today's PMOs.

My findings have also identified that PMOs are often victims of politically driven decisions rather than process-driven decisions. While there are several project management tools, processes, and training that are used, however, PMOs continue to face a lack in resources that have clear understanding and experience to handle project management, program management, and portfolio management altogether. Jedd (2006) found conflicts between consultative leadership and project management practitioners. This conflict was due to a lack of formal leadership training in project management, as leadership doesn't always see eye to eye with PMOs when it comes to managing project management, program management and portfolio management decisions that are often politically driven. This reinforces PWC's stance that the reports generated are so periodic driven instead of proactive driven that leadership fails to understand the dynamics of PMO setting and its relationship with its interconnecting practices within the OPM Continuum (PWC, 2017).

5.5.6 Assessment

This theme deals with the determination of an assessment and measurement practice within a PMO with the aim of developing an ongoing continuous improvement practice. Often, PMOs are stretched to demonstrate their value in a value system. In order to do so, PMOs have to demonstrate a measurement mechanism that can translate profitability to the executives in order to retain their continual buy-in and support. The question arises; how do PMOs measure success or improvements? This is achieved through PMO Maturity Assessment. However, it was discovered through the findings that there is a lack of a common and consistent PMO Maturity Assessment Process. This is due to various PMO assessment models that are active in the PMO industry today and each assessment model has its own patented assessment process. These models are:

- Organizational Project Management Maturity Model, also known as, OPM3 (PMI, 2013)
- Portfolio, Programme and Project Management Maturity Model, also known as, P3M3 (Murray, 2006)
- Capability Maturity Model Integration, also known as, CMMI (Batten, 2008)
- Project Management Maturity Model, also known as, PMMM (Kent, 2015)

- Kerzner Project Management Maturity Model, also known as, KPMMM (Karzner, 2005)

The findings revealed that PMOs are not diligently performing PMO maturity assessments due to the lack of a consistent PMO maturity assessment process. This is a new discovery which, it is submitted, has a significant contribution to PMO/OPM knowledge and also practice. This finding is deemed as a significant contributor to practice and will be discussed in more depth in the **Outcome 2: PMO Maturity and Continuous Improvement** section.

5.5.7 PMO Failure

This theme deals with the determination of interconnectivity gaps within the OPM Continuum of practices that lead to PMO failures. According to PMI's Pulse of the Profession report, 30% of PMO directors believe that one of the main reasons why the PMO's value isn't achieved is a lack of understanding by business executives as to the best use of the PMO (Greengard, 2013). This gap in the form of value realization has often led to a lack of continual executive buy-in and support. Unfortunately, the lack of continual executive buy-in and support has impacted the average life expectancy of PMOs, which is approximately two years prior to PMO failure (Aubry et al., 2010).

My findings have identified four factors that lead to PMO failures. First, there is a lack of understanding by executives of PMO and OPM Continuum of practices. Second, there is a lack of delivery expectations as PMO heads that are managing

PMOs are busy delivering what they want and not what they need to deliver. Third, there is a lack of business ownership as PMOs were often caught in cross-functional business ownership responsibilities that should have been owned by the business. Fourth, there is a lack of PMO engagement with leadership as it appears that PMOs are not as engaged or involved as they should have been in strategic conversation with leadership. As a result, PMOs are not involved with leadership during the formulation of strategies or building of roadmap capabilities.

These four factors support a survey undertaken by KPMG consisting of 1,450 leading public and private institutions in Canada to find the causes of IT project failure (Whittaker, 1999). Whittaker found that one of the most common reasons for project failure was attributed to the lack of top management involvement. Whittaker further explains that the lack of leadership commitment and understanding required by executives to set priorities for project success resulted in a gap for project delivery expectations. This lack persisted through middle management and caused severe problems that resulted in senior management's entrepreneur attitude characterized by the belief that projects were PMOs' concerns; thereby contributing to the development of a lack of business ownership culture.

5.5.8 Challenges and Risks

This theme deals with the determination of challenges and risks that coexist in a PMO setting leading to interconnectivity gaps within the OPM Continuum of

practices. The findings revealed that there is a lack of time investment from leadership as leadership is often overly impatient. Organizations are developing PMOs with specific success models in mind and are replicating processes that may not be required for specific delivery of benefits to stakeholders. Such development of a one-size-fits-all strategy model and replication of unwarranted practices creates an over-implementation factor that often becomes high risk to the overall success of a PMO. This is a new discovery which, it is submitted, makes a significant contribution to PMO/OPM knowledge and also practice. This finding is deemed as a significant contributor to practice and will be discussed in more depth in the **Outcome 2: PMO Maturity and Continuous Improvement** section.

My findings have also identified that there are too many variations of PMOs and these variations of PMOs add a high degree of complexity where the risks of communications, processes, and competencies of interconnectivity are lost. This finding supports several studies that have been made on PMOs. Firstly, there are common variations of PMO establishments where the word “PMO” is often interchangeably used as Project Management Office (Aubry & Hobbs, 2010), Program Management Office (Letavec, 2006) and Portfolio Management Office (Aubry et al., 2012). Secondly, there are less common variants of PMOs that have unique PMO identifiers such as Project Office (Hill, 2004), Business Office Project, Strategic Project Office, and Project Management and Strategic Integration Office (Aubry, Müller & Glückler, 2013). While the common and less common variants differ, the core objective remains the same, which is to act as a central office in the context of practice. However, the PMO roles in both common and less common

variants have differing degrees of serving, controlling and partnering attributes resulting in a high degree of complexity.

5.6 Contribution to Practice

As Zuber-Skerrit & Fletcher (2007) state that knowledge contribution to practice should enable professional and organizational development and growth. Furthermore, the advanced knowledge should be practice-oriented; i.e. it should be able to improve practice and solve actual and complex problems in the real world. It should provide practitioners with a way to improve and develop their current practice and their situations. It should be able to bring together action, reflection, theory, and practice (Reason & Bradbury, 2001). Therefore, it is imperative that knowledge contribution to practice has the traits of problem-solving and continuing professional development.

During the process of knowledge contribution to theory, significant contributors to practice were identified. This was achieved through the process of decontextualization of the findings back into the literature. From the eight themes, four themes were found to constitute a significant contributor to practice, namely (1) Strategy, (2) Structure, (3) Assessment and (4) Challenges and Risks. Out of these four themes, knowledge contributors from Strategy and Structure themes were identified for in-depth discussion as part of **Outcome 1: OPM Continuum Interconnectivity** section while knowledge contributors from Assessment and Challenges and Risks themes were identified for in-depth discussion as part of

Outcome 2: PMO Maturity and Continuous Improvement section as depicted in the diagram below. The aim is to present a logical understanding together with conceptual model which encapsulates the argument of the thesis and its contribution to knowledge in the field.

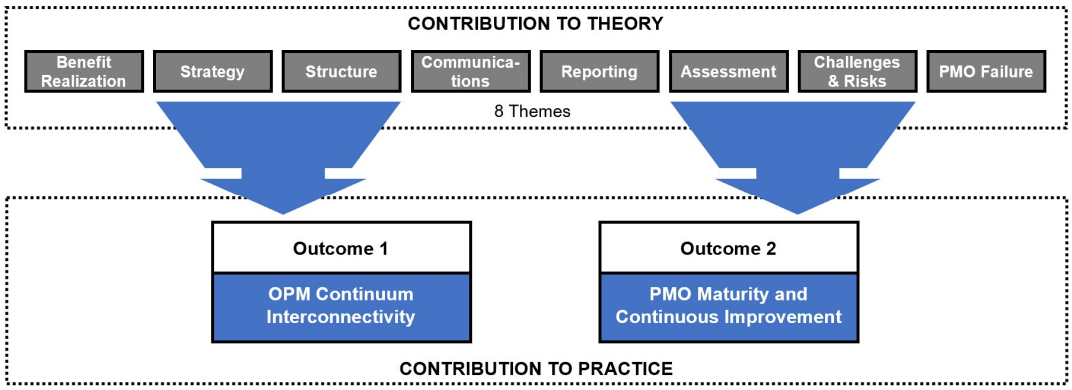

Figure 20 - Contribution to the Theory & Practice Result

Source: Author's Own Analysis

5.7 Outcome 1: OPM Continuum Interconnectivity

Project management, program management, and portfolio management domains, known as the OPM Continuum, possess respective capabilities that are required to manage and operate within their respective clusters of Project Management Office (PMO), Program Management Office (PgMO) and Portfolio Management Office (PfMO) entities. The research started with a need to understand the OPM Continuum and its interconnected relationships when annual reports on OPM Continuum of practices continue to exhibit yearly poor performances despite surveys conducted by Price Waterhouse Coopers (PWC, 2014). These continue to paint a rosy picture that organizations with PMO

capabilities should accelerate project competency (for organizations) in their overall drive towards project management excellence. What the findings are describing is that PMOs are structured unilaterally rather than multilaterally and they do not have an active portfolio management practice or process embedded. This is because they are more focused on the Project Management domain of practice at an operational level, running projects and programs. Hence, they are not maturing to the next level. This is an ongoing problem that PMO practitioners have been facing and it has also been acknowledged in a report published by PMI. The report states that while 88% of executives consider strategy important, yet 61% acknowledge that they are struggling to integrate portfolio management practice with day-to-day project management operations (PMI, 2014b).

From the literature review, it is evident that each PMO, PgMO and PfMO entity has its own set of vested capabilities within its respective domain of practice (Refer to PMO capabilities p.48, PgMO capabilities p.50 and PfMO capabilities p.52). It is also evident that PMO, PgMO and PfMO entities within the clusters of the OPM Continuum co-exist side-by-side (PMO Flashmob, 2016). It is necessary to understand that while the PMO, PgMO and PfMO entities co-exist side-by-side, however, their respective capabilities reside only within the cluster of their respective domains of practice. It is only within their respective cluster that each entity continues to foster and build upon its capabilities. A simple illustrative diagram below depicts the co-existence of PMO, PgMO and PfMO entities side-by-side in an organization with their focused capabilities residing within the respective cluster of its domain.

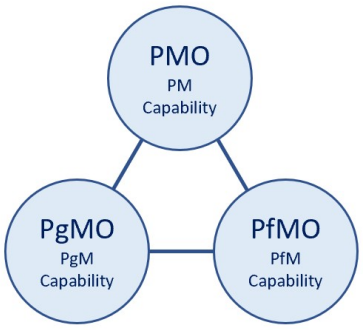

Figure 21 - Model of Co-Existence of PMO, PgMO & PfMO Entities

Source: Author's Own Analysis

Participant 1 mentions that PMOs are structured unilaterally rather than multilaterally. Before exploring, it would be beneficial to understand the difference between a unilateral and multilateral PMO setting. A unilateral PMO functions within a single domain of practice such as Project Management while multilateral PMO functions within the continuum of all three domains of practice covering Project Management, Program Management, and Portfolio Management domains of practice. In a single PMO entity typesetting, the PMO focuses on its single domain of capability concentration; i.e. a PMO that is focusing on project management capabilities only is considered a Unilateral PMO. Participant 6 explains that PMOs are structured unilaterally rather than multilaterally because they are very focused on a singular domain; i.e. they are oriented towards project management practice only. The problem with this set-up is that a single PMO entity is often unable to practice within all three domains of capabilities concurrently, thus resulting in capability blindside. A simple illustrative diagram below depicts how a singular entity exists in an organization.

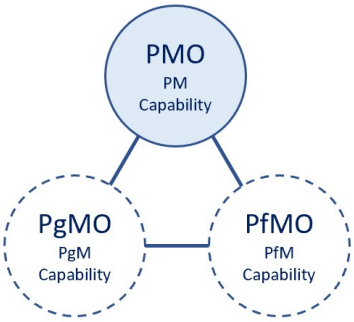

Figure 22 - Model of Singular Entity Existence

Source: Author's Own Analysis

In a singular disciplinary entity system, the capability resides within the cluster of its respective domain while cross-domain capability interrelationship is lost. There are two types of cross-domain capabilities; one is the dual capability between two domains and the other is integrated capability between three domains. A simple illustrative diagram below depicts the interrelationship of cross-domain capabilities covering both dual capability and integrated capability.

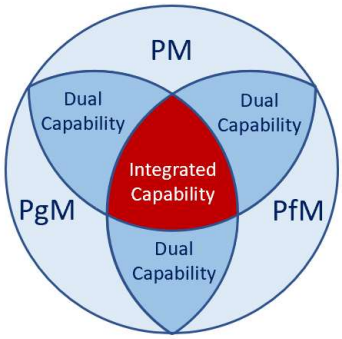

Figure 23 - Model of Multilateral Entity System

Source: Author's Own Analysis

PMOs that are blindsided may not realize that the cross-domain capability interrelationships are being lost. These PMOs might not even be aware of the cross-domain capabilities since they are not practicing it. The table below provides

a clear and logical conceptualization of the different types of PMO set-ups with capabilities, such as singular, dual and integrated capabilities. PMOs in a Unilateral model lose their interrelationship capabilities as depicted below.

Table 15 - Comparative Table Between Singular and Multidimensional Capabilities
Source: Author's Own Analysis

Model	Capability		Project Management (PM)	Program Management (PgM)	Portfolio Management (PfM)
Unilateral Model	Singular Capability		Develop Project Plan	Develop Program Plan	Develop Portfolio Plan
Multilateral Model	Multidimensional Capability	Dual Capability	Manage Projects within a Program	Manage Projects within a Program	
			Prioritize Projects within a Portfolio Pipeline		Prioritize Projects within a Portfolio Pipeline
				Prioritize Programs within a Portfolio Pipeline	Prioritize Programs within a Portfolio Pipeline
		Integrated Capability	Develop PM, PgM & PfM Best Practices	Develop PM, PgM & PfM Best Practices	Develop PM, PgM & PfM Best Practices

Participant 11 indicates that PMOs do not have an active portfolio management practice while participant 7 elaborates that this is because they are focused on running projects. From the findings, we come to an understanding that PMOs are found to be structured unilaterally and their point of concentration is more focused on a project management domain of practice. As a result, PMOs' OPM Continuum interconnectivity with other domains is lost. This is a real and growing problem of significant persistance. PMOs are also caught in the benefits and value system, whereby they are pressured constantly to invest effort in proving the value of a PMO in a value system. Hence, PMOs continue to invest their time and energy heavily in staying on the course set for a unilateral PMO.

The argument being made here is that now we know why it is an ongoing problem that the PMO practitioners have been facing. We have discovered from

this research that PMO capabilities are run unilaterally in isolation. Participant 12 understands this ongoing problem and challenges the common PMO practitioners' thinking that it is necessary to understand not only the OPM as part of an interconnected practice but also how the OPM part sits in the overall organization. The intertwined relationship should co-create capabilities as part of the OPM Continuum and not in isolation.

5.8 Outcome 2: PMO Maturity & Continuous Improvement

The landscape of project management is changing rapidly in today's world of benefits and value realization. Often, PMOs are stretched to demonstrate their value in a value system. In order to do so, PMOs have to offer a measurement mechanism that can translate profitability to the executives in order to retain their continual buy-in and support. This has become increasingly important because of the lack of continual executive buy-in and support has impacted the average life expectancy of a PMO, which is approximately 2 years (Aubry et al., 2010). The way PMOs measure success or improvements is through PMO maturity and continuous improvement.

What the findings are describing is that there is a lack of a common and consistent PMO maturity assessment process. As a result, PMOs are not diligently performing PMO maturity assessment. Instead, organizations are trending towards a prescriptive approach in structuring a PMO while PMOs are being replicated using a prescriptive approach, with the assumption that one size fits all.

Organizations are developing PMOs with specific success models in mind and are replicating processes that may not be required for specific delivery of benefits to the stakeholders. Such development of one size fits all strategy model and replication of unwarranted practices creates an over-implementation factor that often becomes a high risk to the overall success of a PMO. This is an ongoing problem that PMO practitioners have been facing.

From the literature review, it is evident that there are several PMO Maturity and Continuous Improvement models. These models are Organizational Project Management Maturity Model (PMI, 2013), Portfolio, Programme and Project Management Maturity Model (Murray, 2006), Capability Maturity Model Integration (Batten, 2008), Project Management Maturity Model (Kent, 2015) and Kerzner Project Management Maturity Model (Karzner, 2005). It is also evident from the literature review that the objective of the maturity assessment process is to validate the existence of capabilities within the OPM Continuum covering project management, program management, and portfolio management domain of practices (PMI, 2018). This is achieved through an interview process whereby all three levels of the management within each continuum of practice are interviewed. The three management tiers are (1) Low-Management consisting of domain practitioners (e.g. Project Managers, Program Managers, and Portfolio Managers), (2) Mid-Management consisting of Stakeholders and (3) Top-Management consisting of Leadership. The assessor interviews one level at a time starting from Low-Level Management to Mid-Level Management and finally to Top-Level Management. This process is depicted in the diagram below.

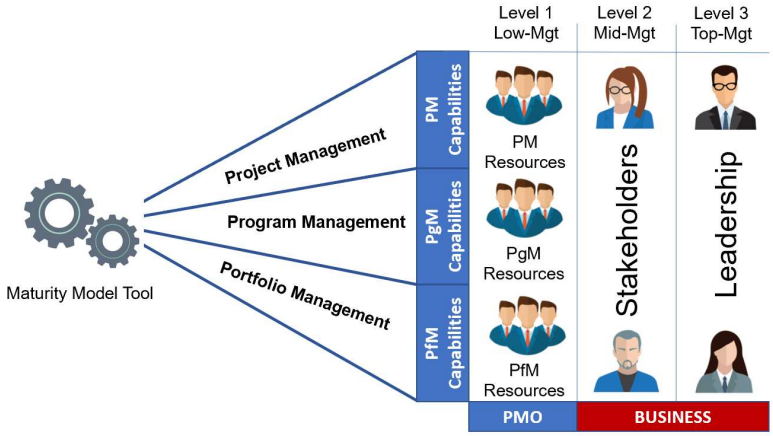

Figure 24 - PMO Maturity Assessment Process

Source: Author's Own Analysis

The findings reveal that the assessment process is a lengthy process as the assessor is required to complete assessing all capabilities. In OPM3 there are over 2,000 capabilities within OPM Continuum covering Project Management, Program Management and Portfolio Management domain of practices (PMI, 2013). The assessment is not only a lengthy process but it is also a complex one as the assessor is assessing both the technical dimension and human dimension through evidence of best practices, tangible or intangible process outcomes and key performance indicators. The technical dimension encompasses groups of practices or processes that are integral to the OPM Continuum while the human dimension includes people at each tier level of the management and their expertise (Cooke-Davies & Arzymanow, 2003). In any maturity model, the assessment begins with assessing the PMO area first at Level 1 Low-Management followed by the Business area covering Level 2 Mid-Management and Level 3 Top-Management.

Once the assessment is completed, two outputs are generated. The first output delivers a list of what is doing well and where are the areas of opportunity. The second output delivers a continuous improvement roadmap developed by the assessor to guide PMOs excel in the areas of opportunities. The continuous improvement roadmap plan could be a short-term one-year plan or a long-term five-year plan depending on the business need. Participant 10 states that organizations are not motivated to sustain the continuous improvement plan. The maturity process to measure and the continuous improvement plan itself are there; however the required seriousness towards these elements is not there. Unfortunately, part of the problem lies within the assessment process dealing with Level 2 Mid-Management and Level 3 Top-Management.

The assessment is very methodological as it tries to go over the methodology of project management, program management, and portfolio management capabilities. While the grassroots practitioners in Low-Management are familiar with day-to-day operations within their domain of practice, unfortunately, business at Mid-Management and Top-Management are not. Participant 10 further explains that they experience rapid disengagement and feel that the process is a waste of their time. It boils down to leadership engagement and Participant 12 adds that leadership is too impatient for PMO maturity growth and would prefer to have the least participation. Participant 13 adds that leadership tries to accelerate PMO maturity by replicating successful PMO models through a prescriptive approach, with the previously mentioned assumption that one size fits all. Participant 6, on the other hand, argues that it is risky for organizations to perform unrealistic comparatives with PMO model companies in the hope of

gaining rapid maturity success. The findings reveal that many organizations perceive Amazon as a PMO model company. Therefore, OPM maturity is very specific for each company and such comparatives are considered unrealistic. The lack of proper training for maturity assessment is leading to a domino effect for business to spend the least time in the continuous improvement process and find ways to artificially accelerate maturity growth by means of prescriptive approach.

The argument being made here is that now we know the root cause for why leadership does not take maturity assessment and continuous improvement processes seriously. This is an ongoing problem that PMO practitioners have been facing, quite simply because they do not understand the assessment process and are not being trained proactively for assessment readiness. The gap is the training element, which is a key component for a successful maturity assessment and continuous improvement process. The diagram below depicts how maturity assessment should proceed with a two-step process; i.e. Step 1 covering Training and Step 2 covering Assessment.

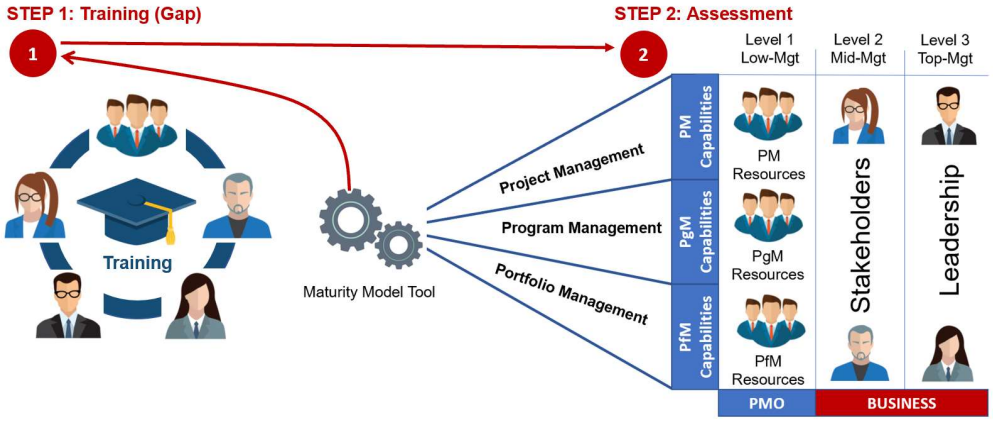

Figure 25 - 2-Step PMO Maturity Assessment Process

Source: Author's Own Analysis

This conceptual model should provide a logical solution for the PMO community of practitioners and it is proposed that this outcome should be considered for future PMO assessment processes.

5.9 OPM-PMO Conceptual Model

The OPM-PMO conceptual model provides process guidance to both OPM Continuum and PMO community of practitioners on how to apply this conceptual model to improve current organizational practice. This conceptual model is broken down into two interconnecting frameworks consisting of Outcome 1 and Outcome 2. While Outcome 1 and Outcome 2 are not mutually exclusive, however, they are interrelated.

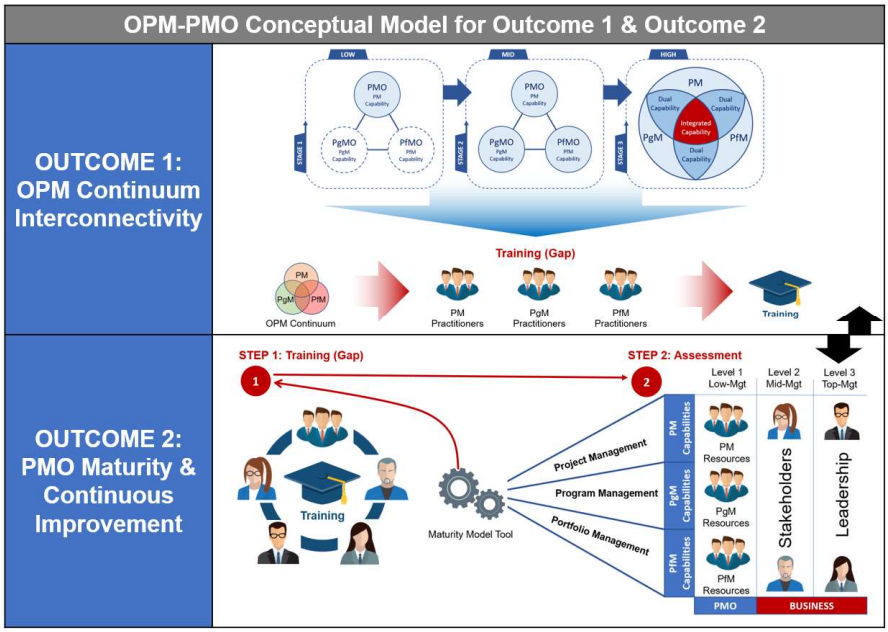

Figure 26 - OPM-PMO Conceptual Model for Outcome 1 & Outcome 2

Source: Author's Own Analysis

5.9.1 Outcome 1 Framework

The Outcome 1 framework comprises of 3 stages. Each stage represents a maturity level. Stage 1 represents a low maturity level, Stage 2 represents a mid-maturity level, and Stage 3 represents a high maturity level. The OPM Continuum and PMO community of practitioners have to identify within which stage or maturity level their current organizational practice resides. The objective of the OPM Continuum and PMO community of practitioners is to raise the bar of their current organizational practice to Stage 3. The below figure depicts the stages and maturity level of the Outcome 1 framework.

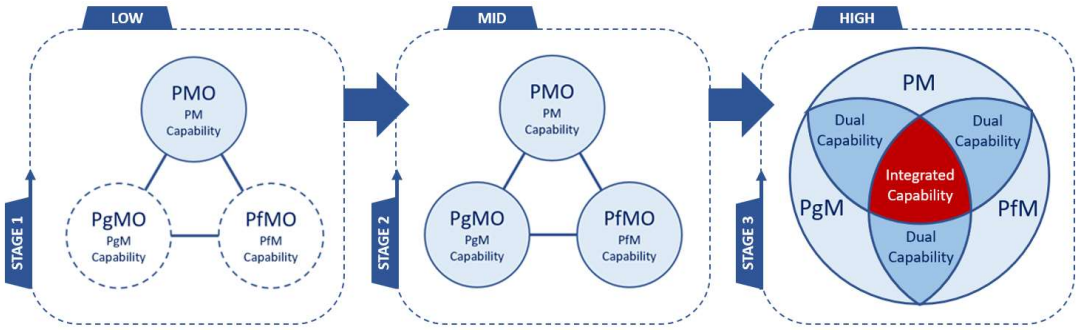

Figure 27 - The 3 Stages of Outcome 1 Framework

Source: Author's Own Analysis

Stage 1 consists of a PMO entity without the co-existence of PgMO and PfMO entities co-existing side-by-side. In this stage, the maturity level is low and the PMO entity is only practicing project management capabilities. However, in some cases, an organization may have a PMO entity that manages both program management and portfolio management capabilities. However, at Stage 1, there

is only a single PMO entity with a single capability. An example of a single capability would be project management capability.

Stage 2 consists of PMO, PgMO, and PfMO entities co-existing side-by-side. In this stage, the maturity level is mid and project management, program management, and portfolio management capabilities reside only within the cluster of their respective domains of practice. As a result, it lacks the dual capability or integrated capability, and the OPM interconnectivity is lost. The point to note here is that although in Stage 2 there are multiple entities, however, the entities are still within a singular capability; i.e. project management capability residing within a project management domain such as a PMO entity or program management capability residing within a program management domain such as a PgMO entity.

Stage 3 consists of PMO, PgMO, and PfMO entities with dual and integrated capabilities. In this stage, the maturity level is high as their capabilities are integrated. The OPM-PMO Conceptual Model Framework provides guidance for the OPM Continuum and PMO community of practitioners to identify at which maturity level is their current organizational practice resides and raise their organizational practice bar from Stage 1 (low maturity level) to Stage 2 (mid maturity level) and ultimately to Stage 3 (high maturity level). Maturity excellence for the Outcome 1 framework can be achieved through training developed for PM PgM, and PfM Practitioners as depicted in the figure below.

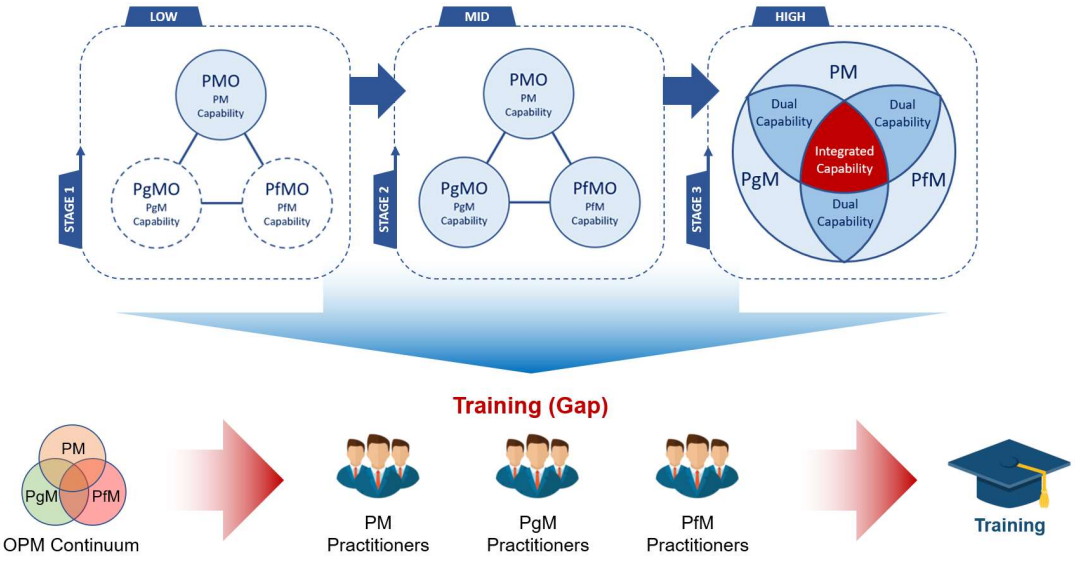

Figure 28 - Training for Outcome 1 Framework

Source: Author's Own Analysis

5.9.2 Outcome 2 Framework

The Outcome 2 framework is interrelated to the Outcome 1 framework and comprises of a two-step process. Step 1 consists of training the continuous improvement assessment process to all three business tiers comprising of Level 1 Low Management, Level 2 Mid-Management, and Level 3 Top Management business tiers. Step 2 consists of the assessment process itself. PMO maturity and continuous improvement will not yield the highest result unless the OPM continuum interconnectivity is active. Therefore, the training for the Outcome 1 framework and Outcome 2 framework are interdependent. The combined pieces of training shall eliminate the OPM interconnectivity gap if the training is developed with great precision.

This will provide the OPM continuum of practitioners consisting of project management practitioners, program management practitioners, and portfolio management practitioners to work in a collaborative effort with the understanding of the interrelated capabilities. With the understanding and active collaboration, the OPM continuum of practitioners will be able to participate effectively during the PMO maturity and continuous improvement process. This collaborativeness demonstrates Outcome 1 and Outcome 2 as interrelated and mutually not exclusive as they can occur at the same time. The below figure depicts the stages and maturity level of the Outcome 2 framework.

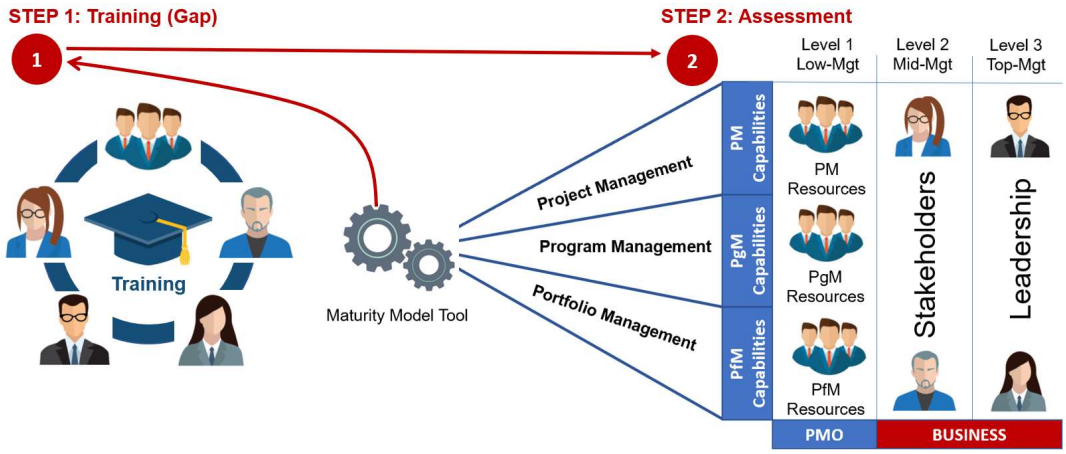

Figure 29 - The 2-Step Process of Outcome 2 Framework

Source: Author's Own Analysis

5.9.3 Contribution to Knowledge and Practice

Outcome 1: The findings describe that PMOs are structured unilaterally rather than multilaterally and they don't have an active portfolio mgt (PfM)

capability and program mgt (PgM) capability embedded. While the PMO, PgMO and PfMO entities co-exist side-by-side, however, their respective capabilities reside only within the cluster of their respective domains of practice. As a result, it lacks the integrated capability, and the OPM interconnectivity is lost. Outcome 1 addresses this as a gap and the solution is training. This training is provided to the OPM Continuum practitioners for portfolio management, program management, and project management. Through this training, OPM Continuum practitioners will be able to better understand the cross-domain capability interrelationship. The contribution to knowledge and practice is the training for the Outcome 1 framework.

Outcome 2: The findings describe that there is a lack of a common and consistent PMO maturity assessment process. As a result, PMOs are not diligently performing PMO maturity assessment. Instead, organizations are trending towards a prescriptive approach in structuring a PMO while PMOs are being replicated using a prescriptive approach, with the assumption that one size fits all. Outcome 2 addresses this as a gap the solution is to train three management tiers; i.e. (1) Top-Management consisting of Leadership, (2) Mid-Management consisting of Stakeholders, and (3) Low-Management consisting of domain practitioners (e.g. Project Managers, Program Managers, and Portfolio Managers). The contribution to knowledge and practice is the training for the Outcome 2 framework.

The OPM-PMO conceptual model can be used as a guiding framework for organizations to train their OPM Continuum and PMO community of practitioners

on Outcome 1 and also train their three management tiers consisting of Top-Management, Mid-Management, and Low-Management for Outcome 2.

5.10 Summary

The chapter has presented the pinnacle of the research undertaken for this DBA research and offers conceptual models for consideration in Outcome 1: OPM Continuum Interconnectivity and Outcome 2: PMO Maturity and Continuous Improvement. The first outcome focuses on the interconnectivity of relationship within the OPM Continuum consisting of the Project Management, Program Management and Portfolio Management domain of practices. The second outcome focuses on the PMO maturity and the continuous improvement process. In respect of both outcomes, the thesis takes a careful look at real-life PMO problems and offers a logical solution based upon knowledge and understanding underpinned by academic research from both a theoretical and practical perspective. In relation to each outcome, the research fills gaps, advances knowledge to the next level and contributes solving a real-life complex problem. The chapter concludes with the narrative outcomes of the key findings from the research and proposes that these outcomes should be considered for future knowledge enhancement and professional development.

6 CONCLUSION & RECOMMENDATIONS

6.1 Introduction

This chapter offers a conclusion together with recommendations in order to round off the thesis. It reviews the aims and objectives introduced in the first chapter and summarizes the general conclusions and recommendations drawn from the research. The thesis ends by addressing any limitations of the research.

The foundation of this research lies in the alignment with Blomquist et al. (2010) who proposed a practice-based philosophical bottom-up approach. A careful study was designed and undertaken to ensure that foundation alignment is not lost at any point of the philosophical paradigm journey.

- From an **ontological** position, a subjectivist stance was adopted.
- From an **epistemological** position, an interpretivist stance was adopted, which is in alignment with an inductive approach.
- From the **axiological** position, this research supports the interpretivist value setting with the adoption of a personalized approach to managing a small sample of subjects in a personalized interactive setting.
- For **data collection,** this study adopted an exploratory conversational semi-structured interview for its research data collection approach.

- For **sampling**, this study adopted expert sampling, a type of purposive sampling technique drawn from the family of non-probability sampling techniques since it requires participants with highly specialized project management office (PMO) experience and organizational project management (OPM) expertise.
- For **data analysis**, this study adopts thematic analysis with reflexive/organic coding style in a bottom-up approach.

This carefully constructed research methodology helped to loop findings back to the literature review closing the research circle loop as depicted in the figure below.

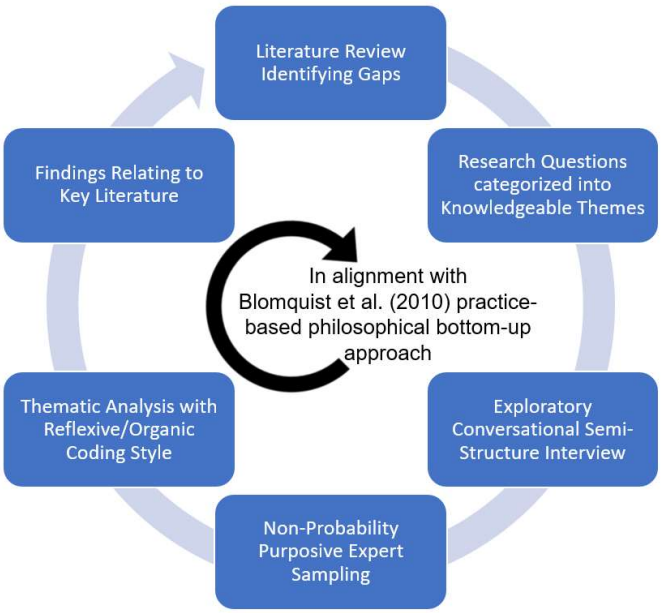

Figure 30 - Closing the Research Circle Loop from Literature Review to Findings

Source: Author's Own Analysis

6.2 Achieving Aims and Objectives

The research was undertaken to understand why yearly reports on OPM Continuum of practice continue to exhibit yearly poor performances despite surveys conducted by Price Waterhouse Coopers (PWC, 2014). It appears that there continues to exist paint a rosy picture suggesting that organizations with PMO capabilities should accelerate project competency (for organizations) in their overall drive towards project management excellence. This led to the establishment of the three aims and objectives of the research, which have been addressed through the following:

1. **Objective 1:** To critically review the literature on the OPM continuum comprising of Project Management, Program Management and Portfolio Management domains of practice.

This objective was met through the process of deconstruction of PMO/OPM literature into commercial and research knowledge and critically reviewing existing if limited literature. The literature review was an important and an iterative process and the researcher was able to shed light upon the complex world of the OPM Continuum and its interrelated processes.

2. **Objective 2:** To investigate the practice experience of OPM Continuum's interconnecting relationships from the perspective of organizational PMO practitioners.
3. **Objective 3:** To examine the key factors influencing the creation and operation of the relationships between OPM Continuum elements through a PMO lens.

These objectives were met through the revelations of extensive in-depth interviews. The findings from these interviews were presented using Braun & Clarke's (2006) Reflexive/Organic Thematic Analysis approach. This approach was best suited for this research because of its flexibility and its compatibility with the subjectivist or constructivist paradigm. Moreover, thematic analysis using a reflexive/organic coding style is highly appropriate given that this research adopts a practice-based philosophical approach (Blomquist et al., 2010). Interviews with the participants provided a series of rich data that was satisfactorily coded, collated, described and disaggregated into latent themes and subsequently analyzed to establish meaningful patterns of themes (thus emerging as a narrative story). This positioned the researcher as a storyteller who has been actively engaged in interpreting the data through the lens of his expertise, something that requires deep thinking, focus engagement and interpretative work. By adopting this process, it became possible to identify a number of significant gaps within the interconnecting relationship of the OPM Continuum, consisting of project management, program management, and portfolio management practices.

4. **Objective 4:** To provide recommendations for organizational PMO practitioners to guide future development of such relationships.

This objective was met through reviewing existing but limited literature and empirical research with extensive coverage in the discussion chapter. By means of this process, the researcher was able to identify both a knowledge contribution to theory and significant contributors to practice as “outcomes”. The outcomes played a pivotal role, enabling the researcher successfully to identify key discoveries important to the PMO/OPM Continuum of practice. They also facilitate arrival at a logical solution to fill the gaps through a conceptual model as a significant contribution to practice. The recommendations that are provided in Section 6.3 are derived from the iterative process developed throughout the thesis in the form of a “golden thread” beginning from the research questions, through thematic analysis, findings, discussion, and recommendations. This is depicted in the diagram below.

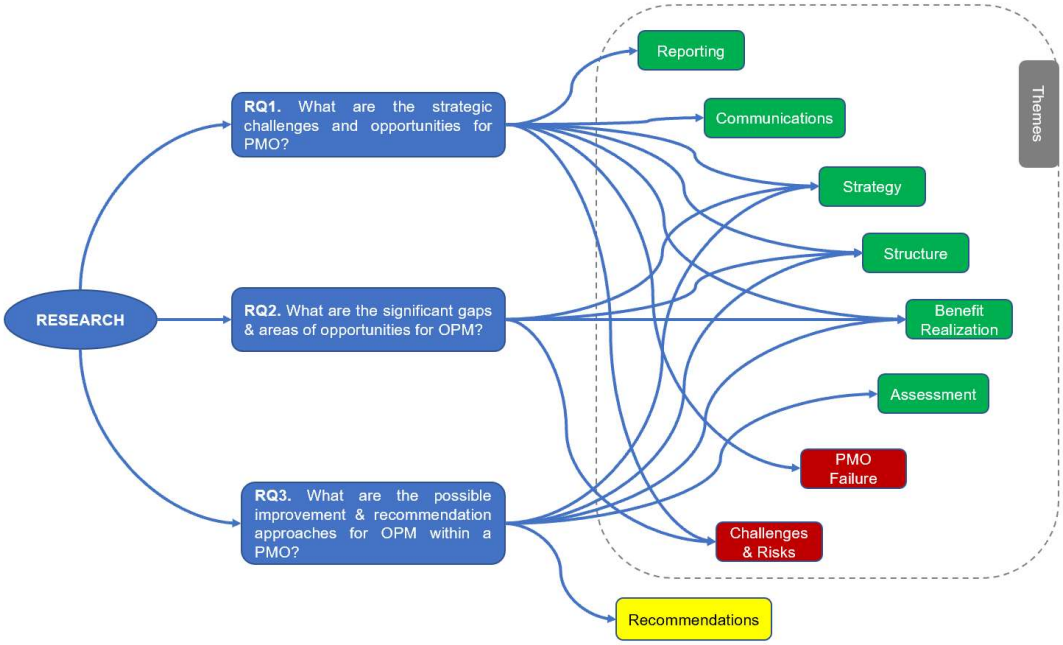

Figure 31 - Research Questions & Theme Categorization Diagram

Source: Author's Own Analysis

6.3 Recommendations

In light of the findings and the in-depth discussions covering the eight themes and identifying contributions to theory and practice, the following recommendations are proposed:

1. **OPM as Interconnected Practice:** The OPM Continuum consisting of project management, program management, and portfolio management practices is complex and intertwined and it is recommended that it should be viewed as interconnected practice. It is imperative that these should not be viewed in isolation. It is, therefore, necessary to understand the OPM not only as part of an interconnected practice, but

also the OPM as it sits within the overall organization. This intertwined relationship should tend to co-create capabilities as part of the OPM Continuum and not in discretely. Once this is achieved, the PMO can reap the benefit of consolidation and leverage interconnected information from the OPM Continuum to its advantage.

2. **PMO Maturity and Continuous Improvement:** Organizations should have robust PMO maturity assessment and continuous improvement process. PMOs should take time and effort to ensure that business leadership and stakeholders are fully engaged in the process from the outset. It is recommended to use the conceptual model identified as a logical solution to fill the training gap. It is imperative that organizations should not trend towards a prescriptive approach with a one-size-fits-all strategy model in the hope of artificially accelerating maturity grown. This approach uses unwarranted practices that creates an over-implementation factor which often becomes high risk to the overall success of a PMO. For PMOs to be effective, a long term strategy is required with leadership buy-in, leadership engagement, leadership patience and time investment for PMOs to develop and foster sustained maturity sustainable growth. PMOs are a long term proposition. Therefore, organizations need to be patient and highly supportive.

3. **Executive Support:** In every possible context and across all sectors, there is one thing which will always outweigh other factors and that is executive support. In order to gain strong executive support, it is recommended that the PMO makes the effort to educate leadership on the OPM Continuum of practices and their interconnected relationship. It is imperative that PMOs get more involved with leadership during the formulation of strategies and promote PMO engagement with top management. A PMO should foster relationships with all areas of business that are directly providing services; they should also designate a PMO representative as an ambassador.

4. **Sustainable Business Value and Benefits Realization:** Participant 1 states that project management is evolving into becoming a delivery system for creating benefits and value. This model is changing the landscape of project management today. It is recommended that a PMO should develop a continuous improvement roadmap with an agreed predefined business value; in other words measurable indicators that can be assessed at regular interval to demonstrate business realization. These measurable indicators can be in the form of key performance indicators (KPIs). It is imperative that PMOs engage with the leadership from the outset and sealing that relationship with a memorandum of understanding (MOU) on the method of measurement as well as points

of measurement. Upon agreement, PMOs can successfully measure the growth in a timely fashion.

5. **PMO/OPM Success Factors:** Knowledge and understanding of the OPM Continuum of practices are paramount to the overall success of a PMO. Therefore, it is recommended that PMOs should always look for opportunities for raising awareness. PMOs should always check the skillsets of their teams working within the PMOs; these team members represent significant resource prospects and potential key drivers to promote awareness.

6.4 Limitations of the Research

The quest underpinning this research reaches into the uncharted waters of the OPM Continuum and its interrelationship of interconnecting practices. The literature on the subject of PMOs and OPM Continuum interconnectivity is scarce. Furthermore, research knowledge publications on PMOs and OPM Continuum interconnectivity are particularly scarce since only a handful of combined research has been carried out in the field of PMOs and OPM Continuum collectively. (For more information please refer to Section 2.2, Specific Critique of PMO/OPM Literature, p.12). The researcher tried his best objectively to research this topic within the constraint of literature availability.

From a methodological standpoint, this research adopts the Blomquist et al. (2010) practice-based philosophical approach, which is best suited for this study. An exploratory conversational semi-structured interview method for data collection was selected. This method offered the participants with a personalized interview setting whereby they were provided an atmosphere of a conversational environment through a series of guided questions. While this method helped to progress the research, however, participants sometimes got carried away on topics that they were extremely passionate about within a conversational setting. The researcher tried his best to control the flow of the interview respectfully without offending the participants by gently but firmly bringing the focus of the conversation back to the question being asked.

6.5 Further Research

A number of areas have emerged as potential opportunities that may deem beneficial for further research. The OPM Continuum consisting of project management, program management, and portfolio management practices is complex and intertwined. The research exhibits interrelationship of capabilities in three layers; (1) singular capability, (2) dual capability and (3) integrated capability (for details please refer to PMO set-ups with three-layer capabilities on p.207). There are several opportunities to explore OPM interrelationship of capabilities with (1) integrated PMOs, (2) maturity growth and (3) continuous improvement.

For integrated PMOs, this research exhibits that there are establishments of project management office (PMO), program management office (PgMO) and portfolio management office (PfMO) entities within the clusters of OPM Continuum as evident from the PMO Benchmark Report 2016 (for details please refer to Section 2.8, PMO as Control Tower on p.45). These integrated PMOs consisting of PMO, PgMO, and PfMO entities have capabilities that are intertwined. While this research has explored the interconnected relationship of OPM capabilities, further research on OPM interrelationship of capabilities with integrated PMOs would highly be beneficial for the integrated PMO community of practitioners. Such research will provide the integrated PMO community of practitioners with an opportunity to understand the complex interconnections and improvise the management of these interconnected capabilities.

For maturity growth and continuous improvement, this research exhibits that there are several maturity models that are being utilized (for details please refer to 4.5.6 (3) (a) p.162). However, there is very little known research made on how this assessment and continuous improvement process are integrated. Therefore, there is an opportunity for further research on maturity growth and continuous improvement within the environment of the integrated PMOs and their interconnected capabilities. Such research will provide both the community of assessors and the integrated PMO community of practitioners with an opportunity to understand the complex assessment process that can be used towards improvisation and stabilization of the maturity growth of the integrated PMOs.

6.6 Summary

It has been demonstrated above that the aims and objectives of the thesis have been fulfilled. This thesis has been written and presented as partial fulfillment of the requirements of a Doctorate of Business Administration (DBA). The researcher believes strongly that the outcomes, recommendations, and knowledge contribution to theory and practice should be shared widely to provide the PMO community of practitioners with a way to improve and develop their current practice and their situations. It is also hoped that this thesis succeeds in pointing to the importance of fostering future research on the subject of the OPM Continuum, covering Project Management, Program Management, and Portfolio Management domains of practice.

7 REFERENCES

Abbasi A. & Jaafari A. (2018). Evolution of Project Management as a Scientific Discipline. *Data and Information Management, 2*(2), pp. 91–102.

Adami, V. S. & Verschoore, J. R. (2018). Implications of Network Relations for the Governance of Complex Projects. *Project Management Journal, 49*(2), 71–88.

Adams, J. R. & Barndt, S. E. (1988). Behavioral Implications of the Project Life Cycle. *Project Management Handbook*, (2nd ed.). Hoboken: John Wiley & Sons.

Adizes, I., Cudanov, M. & Rodic, D. (2017). Timing of Proactive Organizational Consulting: Difference between Organizational Perception and Behaviour. *Amfiteatru Economic, 19*(44), 232–248.

Ahmadi-Javid, A., Fateminia, S. & Gemünden, H. (2020). A Method for Risk Response Planning in Project Portfolio Management. *Project Management Journal, 51*(1), 77–95.

Allen, S. A. (2011). Ethics and Project Management: A Journal Publication Analysis. *The Journal of Management and Engineering Integration, 4*(1), 11–19.

APM (2006). *Association of Project Management: Body of Knowledge (BoK)* (5th ed.). Buckinghamshire: APM.

Aubry, M. & Hobbs, B. (2005). *A realistic portrait of PMOs: The results of an empirical investigation.* In Proceedings of PMI Global Congress North America, Toronto, Canada. Newtown Square: PMI Publishers.

Aubry, M. & Hobbs, B. (2007). A multi-phase research program investigating project management offices (PMOs): the results of phase 1. *Project Management Journal, 38*(1), 74–86.

Aubry, M. & Hobbs, B. (2010). *The Project Management Office (PMO): A Quest for Understanding*. Newtown Square: PMI Publishers.

Aubry, M., Hobbs, B. & Thuillier, D. (2007). A new framework for understanding organisational project management through the PMO. *International Journal of Project Management, 25,* 328–336.

Aubry, M., Gemünden, H. & Unger, B. (2012). The three roles of a project portfolio management office: Their impact on portfolio management execution and success. *International Journal of Project Management 30*, 608–620.

Aubry, M., & Lavoie-Tremblay, M. (2018). Rethinking organizational design for managing multiple projects. *International Journal of Project Management, 36*(1), 12–26.

Aubry, M., Müller, R. & Glückler, J. (2013). A relational typology of project management offices. *Project Management Journal, 44*(1), 59–76.

Aubry, M., Müller, R., Hobbs, B. & Blomquist, T. (2010). Identifying forces driving PMO changes. *International Journal of Project Management, 41*(4), 30–45.

Axelos (2011). *Managing Successful Programmes (2011 ed.).* Norfolk: TSO Publishers.

Axelos (2017). *Managing Successful Projects with PRINCE2 (2017 ed.).* Norfolk: TSO Publishers.

Batten, L. (2008). *CMMI 100 Success Secrets: Capability Maturity Model Integration 100 Success Secrets - 100 Most Asked Questions: The Missing CMMI-DEV, CMMI-ACQ Project Management and Process Guide.* London: Emereo Pty Ltd.

Belout, A. (1997). Effects of human resource management on project effectiveness and success: Toward a new conceptual framework. *International Journal of Project Management, 16*(1), 21–26.

Bernard, R. (2006). *Research Methods in Anthropology - Qualitative and Quantitative Approaches* (4th ed.). Oxford: AltaMira Press.

Blomquist, T., Hällgren, M., Nilsson, A., & Söderholm, A. (2010). Project-As-Practice: In Search of Project Management Research That Matters. *Project Management Journal, 41*(1), 5–16.

Boles, A. (2009). *The work delivery process: a pragmatic approach to project portfolio management.* Paper presented at PMI Global Congress 2009-North America, Orlando, FL. Newtown Square, PA: Project Management Institute.

Bose, J. (2018). Hiring Project Managers for the Digital Enterprise. *Gartner CEB IT Quarterly, 1*(4), 28–31.

Bourdieu, P. (1990). *The Logic of Practice.* Oxford, UK: Polity Press.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77–101.

Bredillet, C., Tywoniak, S. & Dwivedula, R. (2015). What is a good projectmanager? An Aristotelian perspective. *International Journal of Project Management, 33*(2), 254–266.

Brown, J. (2007). *The Handbook of Program Management: How to Facilitate Project Success with Optimal Program Management*. New York: McGraw-Hill.

Bryman, A. (2016). *Social Research Methods* (5th ed.). Oxford: Oxford University Press.

BS ISO 21500 (2012). *Guidance on Project Management* (1st ed.). British Standards Institution.

BS ISO 21503 (2017). *Guidance on Programme Management* (1st ed.). British Standards Institution.

BS ISO 21504 (2015). *Guidance on Portfolio Management* (1st ed.). British Standards Institution.

Buchan, L. & Simpson, B. (2020). *Projects-as-Practice: A Deweyan Perspective. Project Management Journal, 51*(1), 38–49.

Cabrey, T. S. & Haughey, A. (2014). *PMI's Pulse of the Profession In-depth Report: Enabling organizational change through strategic initiatives*. Newtown Square: PMI Publishers.

Carlton, D. (2017). Competence versus Confidence in IT Project Leadership and its Impact on Project Outcomes.*The Journal of Modern Project Management,5*(1).

Carroll, B., Levy, L. and Richmond, D. (2008). Leadership as practice: Challenging the competency paradigm. *Leadership 4*(4): 363–379.

Cicmil, S. (2006). Understanding project management practice through interpretative and critical research perspectives. *Project Management Journal, 37*(2), 27–37.

Cooper, G. R. (2017). We've Come a Long Way Baby, *Journal of Product Innovation Management, 34*(3), 387–391.

Cooke-Davies, T. (2015). *Delivering strategy: What matters most, capability or maturity?* Paper presented at PMI Global Congress 2015-EMEA, London, England. Newtown Square: PMI Publishers.

Cooke-Davies, T. & Arzymanow, A. (2003). The maturity of project management in different industries: An investigation into variations between project management models. *International Journal of Project Management 21*, 471–478.

Coghlan, D & Brydon-Miller, M. (2014). *The SAGE Encyclopedia of Action Research.* London: Sage Publications Ltd.

Crawford, L. (2006). Developing organizational project management capability: Theory and practice. *Project Management Journal, 37*(3), 74–86.

Danglemayer, T. (1990). *ESD Program Management: A Realistic Approach to Continuous Measurable Improvement in Static Control*. New York: AT&T Bell Laboratories.

Deacon, H. & Lingen, E. (2015). The use of the critical path and critical chain methods in the South African construction industry. *Journal for the Physical and Development Sciences, 22*(1), 73–97.

Didinsky, I. (2017). *The Practitioner's Guide to Program Management*. Newton Square: PMI Publishers.

Duda & Skalna (2019). *Functioning and Development of Enterprises - Contemporary Challenges.* Krakow: AGH University of Science and Technology Press.

Dudovskiy, J. (2018). The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance. Author.

Edinburgh Napier University (2013). *Code of Practice on Research Integrity.* Retrieved from https://staff.napier.ac.uk/services/research-innovation-office/policies/Documents/2016%2003%2016%20CoP%20version%203.pdf

Ekrot, B., Rank, J., Gemünden, H.G., (2016). Antecedents of project managers' voice behavior: the moderating effect of organization-based self-esteem and affective organizational commitment. *International Journal of Project Management*. 34:1028–1042.

Farmer, C. M., Thomas A. Mazzuchi, T. A. & Sarkani, S. (2014). Integrating Acquisition Strategy and PMO Capability: A Catalyst for Defense Systems Engineering Transformation. *Procedia Computer Science, 28*, 744–753.

Flick, U. (2009). *An Introduction to Qualitative Research* (4th ed.). London: Sage Publications Ltd.

Flinders, D. J. (1992). In search of ethical guidance: Constructing a basis for dialogue. *International Journal of Qualitative Studies in Education, 5*(2), 101–115.

Frith, H., & Gleeson, K. (2004). Clothing and embodiment: men managing body image and appearance. *Psychology of Men & Masculinity, 5*(1), 40–48.

Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). Boston: A & B Publications.

Gambrell, L. B., Palmer, B. M., Codling, R. M., & Mazzoni, S. A. (1996). Assessing motivation to read. *The Reading Teacher, 49*, 518–533.

Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.

Gibbons, M. L., Limoges, H., Nowotny, S., Schwartman, P., Scott, P. & Trow, M. (1994). *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies.* London: Sage Publications Ltd.

Gosenheimer, C. (2012). *Project Prioritization: A structured approach to working on what matters most.* Madison: University of Wisconsin.

Greener, S. (2008). *Business Research Methods*. Dr. Sue Greener & Ventus Publishing ApS.

Greengard, S. (2013). No PMO? Know when you need one. *PM Network, 27*(12), 44–49.

Gregory, R. W., M. Keil, M., Muntermann, J. & Mähring, M. (2015). Paradoxes and the Nature of Ambidexterity in IT Transformation Programs. *Information Systems Research, 26(*1), pp. 57–80.

Guba, E. (1981). ERIC/ECTJ Annual Review Paper: Criteria for Assessing the Trustworthiness of Naturalistic Inquiries. *Educational Communication and Technology, 29*(2), 75–91.

Hanford, M. F. (2004). *Program management: Different from project management.* Retrieve from www.ibm.com/developerworks/rational/library/4751.html

Hedeman, B., Vis van Heemst, G. & Fredriksz, H. (2009). *Project Management based on Prince2.* Amersfoort: Van Haren Publishing.

Hermes (2017). *The development of HERMES.* Retrieved from www.hermes.admin.ch

Hill, G. (2004). Evolving the Project Management Office: A Competency Continuum, *Information Systems Management Journal, 21*(4), 45–51.

Hill, G. (2014). *The Complete Project Management Office Handbook* (1st ed.). Boca Raton: CRC Press.

Hurt, M., Thomas, J.L., (2009). Building Value Through Sustainable Project Management Offices. *Project Management Journal* 40, 55–72.

Hyväri, I. (2016). Roles of Top Management and Organizational Project Management in the Effective Company Strategy Implementation. *Procedia - Social and Behavioral Sciences, 22614*, 108–115.

IPMA (2017). *IPMA History*. Retrieved from www.ipma.world/about/ipma-history/

IPMA (2017). *IPMA Standards*. Retrieved from www.ipma.world/projects/standard/

Jedd, M. (2006). Leader of the pack. *PM Network, 20*(5), 72–76.

Jiang, J., Klein, G. & Fernandez, W. (2018). From Project Management to Program Management: An Invitation to Investigate Programs Where IT Plays a Significant Role. *Journal of the Association for Information Systems, 19*(1), 40–57.

Julian, J. (2008). How project management office leaders facilitate cross-project learning and continuous improvement. *Project Management Journal, 39*(3), 43–58.

Kaiser, M., El Arbi, F., & Ahlemann, F. (2015). Successful project portfolio management beyond project selection techniques: Understanding the role of structural alignment. *International Journal of Project Management, 33,* 126–139.

Kendall, G & Rollins, S. (2003). *Advanced Project Portfolio Management and the PMO: Multiplying ROI at Warp Speed*. Boca Raton: Ross Publishing.

Kent, C. (2015). *Project Management Maturity Model* (3rd ed.). Boca Raton: Taylor & Francis Group.

Kerzner, H. (2005). *Using the Project Management Maturity Model: Strategic Planning for Project Management* (2nd ed.). Hoboken: John Wiley & Sons.

Kerzner, H. (2009). *Project Management; A Systems Approach to Planning, Scheduling, And Controlling* (10th ed.). Hoboken: John Wiley & Sons.

Kerzner, H. & Saladis, F. P. (2009). *What Executives Need to Know About Project Management*. New York: International Institute for Learning, Wiley.

Khalema, L., Van Waveren, C. & Chan, K. (2015). The relationship between project management office maturity and organisational project management maturity: An empirical study of the South African government infrastructure departments. *South African Journal of Industrial Engineering, 26*(3),12–26.

Khan, B. (2017). *Seeking Inspiration from the Taj Mahal for Project Management.* Retrieved from https://www.nqicorp.com/en/2017/11/21/seeking-inspiration-from-the-taj-mahal-for-project-management/

Kidder, L. H., & Fine, M. (1987). Qualitative and quantitative methods: When stories converge. *New directions in program evaluation*. San Francisco: Jossey-Bass.

Killen, C. P. & Hunt, R. A. (2013). Robust project portfolio management: capability evolution and maturity. *International Journal of Managing Projects in Business, 6*(1), 131–151.

Kock, A., Heising, W. & Gemünden, H. (2016). A contingency approach on the impact of front-end success on project portfolio success. *Project Management Journal, 47*(2), 115–129.

Kogekar, H. (2014). *Why IT Projects Really Fail*, CIO Online. Retrieved from http://www.cio.com.au/article/533532/why_it_projects_really_fail/

Kopmann, J., Kock, A., Killen, C. & Gemünden, H. (2017). The role of project portfolio management in fostering both deliberate and emergent strategy. *International Journal of Project Management, 35*(4), 557–570.

Korneta, P. (2018). Net promoter score, growth, and profitability of transportation companies. *International Journal of Management and Economics. 54*(2): 136–148.

Korstjens, I. & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice, 24*(1),120–124.

KPMG (1997). *Survey of Unsuccessful Information Technology Projects*. Toronto: KPMG.

KPMG (2013). *Project Management Survey Report 2013*. New Zealand: KPMG.

Kumar, R. (2011). *Research Methodology: A Step-by-Step Guide for Beginners* (3rd ed.). London: Sage Publications Ltd.

Kwak, Y. H. & Anbari, F. T. (2009). Analyzing project management research: Perspectives from top management journals. *International Journal of Project Management, 27*(5), 435–446.

Lazar, O. (2015). *Open your strategic horizon and gain organizational agility, or how to overcome organizational inertia.* Paper presented at PMI Global Congress 2015-North America, Orlando, FL. Newtown Square: PMI Publishers.

Letavec, C. (2006). *The Program Management Office*. Fort Lauderdale: J. Ross Publishing, Inc.

Levine, H. (2005). *Project Portfolio Management - A Practical Guide to Selecting Projects, Managing Portfolios, and Maximizing Benefits* (1st ed.). San Francisco: Jossey-Bass.

Levinson, M. (2006). When Failure Is Not an Option; Five years ago, almost half of A.G. Edwards IT projects were late and over budget. Now it boasts an 88 percent project success rate. How did it do that? By galvanizing IT, reinventing its PMO, and relying on a standard framework to track projects and create accountability. *CIO; Framingham, 19*(16), 54–65.

Lock, D. (1969). *Project Management* (1st ed.). Hampshire: Gower Publishing Company.

Midler, C., Maniak, R. & De Campigneulles, T. (2019). Ambidextrous Program Management: The Case of Autonomous Mobility. *Project Management Journal, 50*(5) 571–586.

Miles, M. B. & Huberman, A. M. (1994). *Qualitative Data Analysis* (2nd ed.). Thousand Oaks: Sage Publications Ltd.

Mossalam, A. & Arafa, M. (2017). Governance model for integrating organizational project management (OPM) with corporate practices. *HBRC Journal. 13*(3), 302–314.

Müller, R., Drouin, N. & Sankaran, S. (2019). Modeling Organizational Project Management. *Project Management Journal. 50*(4) 499–513

Murray, A. (2006). *Capability Maturity Model - Using P3M3 to Improve Performance.* Outperform UK Limited. Document Number: 0616-01-12. Version Number 1v2. Retrieved from https://web.archive.org/web/20061006205116/http://www.outperform.co.uk/Portals/0/P3M3 Performance Improvement 1v2-APP.pdf

Nowotny, H., Scott, P. & Gibbons, M. (2003). 'Mode 2 revisited: the new production of knowledge', *Minerva, 41*, 179–194.

OGC. (2008). *For Successful Portfolio, Programme and Project Offices: Think P3O*. Norwich, UK: Published by Crown Publishers.

OGC. (2010). *Management of Portfolios (MOP)*. Norwich, UK: Published by Crown Publishers.

Ogunde, A. O., Olaolu, O., Afolabi, A., Owolabi, J. & Ojelabi, J. R. (2017). Challenges confronting construction project management system for sustainable construction in developing countries: professionals perspectives (a case study of Nigeria). *Journal of Building Performance. 8*(1), 1–11.

Parviainen, P., Tihinen, M., Kääriäinen, J., & Teppola, S. (2017). Tackling the digitalization challenge: how to benefit from digitalization in practice. *International Journal of Information Systems and Project Management, 5*(1), 63–77.

Patel, S. (2015). *The research paradigm – methodology, epistemology and ontology – explained in simple language.* Retrieved from http://salmapatel.co.uk/academia/the-research-paradigm-methodology-epistemology-and-ontology-explained-in-simple-language

Petro, Y., Ojiako, U., Williams, T. & Marshall, A. (2019). Organizational ambidexterity: using project portfolio management to support project-level ambidexterity, *Production Planning & Control.*

Pinto, A. (2016). *How to Make Your PMO Succeed: Transforming Experience into Remarkable Value.* Paper presented at PMI Global Congress 2016—EMEA, Barcelona, Spain. Newtown Square: PMI Publishers.

Pinto, J. K., Prescott, J. E. (1988). Variations in Critical Success Factors Over the Stages in the Project Life Cycle. *Journal of Management, 14*(1), 5–18.

PMAJ (2016). *Overview of P2M* (3rd ed.). Minato-ku, Japan: PMAJ.

PMI (2013). *Organizational Project Management Maturity Model (OPM3)* (3rd ed.). Newton Square: PMI Publishers.

PMI (2014a). *PMI's Pulse of the Profession: The High Cost of Low Performance*. Newtown Square, PA: Project Management Institute.

PMI (2014b). *Talent management: Powering strategic initiatives in the PMO. 2014 Thought Leadership Series*. Newtown Square: PMI Publishers.

PMI (2016). *PMI's Pulse of the Profession: The High Cost of Low Performance*. Newton Square: PMI Publishers.

PMI (2017a). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* (6th ed.). Newton Square: PMI Publishers.

PMI (2017b). *The Standard for Program Management* (4th ed.). Newton Square: PMI Publishers.

PMI (2017c). *The Standard for Portfolio Management* (4th ed.). Newton Square: PMI Publishers.

PMI (2017d). *PMI's Pulse of the Profession: Success Rates Rise - Transforming the High Cost of Low Performance*. Newton Square: PMI Publishers.

PMI (2018). *PMI's Pulse of the Profession: Success in Disruptive Times - Expanding the Value Delivery Landscape to Address the High Cost*. Newton Square: PMI Publishers.

PMI (2018). *The Standard for Organizational Project Management (OPM)* (1st ed.). Newton Square: PMI Publishers.

PMI (2019). *PMI's Pulse of the Profession: The Future of Work - Leading the way with PMTQ*. Newton Square: PMI Publishers.

PMO FLASHMOB (2016). *PMO Benchmark Report 2016*. London: Arras People Project Management Benchmark Report.

Porter, M. E., & Heppelmann, J. E. (2019). Why every organization needs an augmented reality strategy. *Harvard Business Review, 95*(6), 46–57.

PWC (2014). *Delivering change, sustaining benefits Portfolio and Programme Management (PPM) Service Catalogue*. Papua New Guinea: PWC PNG.

PWC (2017). *Portfolio & Programme Management (PPM) Global Service Catalogue*. Ontario: PWC LLP.

Rad, P. & Levin, G. (2003). *Project Portfolio Management Tools & Techniques*. New York: IIL Publishing.

Rao, R. (2005). *Implementing OPM3—the challenges and next steps.* Paper presented at PMI® Global Congress 2005—North America, Toronto, Ontario, Canada. Newtown Square: PMI Publishers.

Reason, P. & Bradbury, H. (2001). *Handbook of Action Research: Participatory Inquiry and Practice*. London: Sage Publications.

Ritchie, J. & Lewis, J. (2014). *Qualitative Research Practice* (2nd ed.). London: Sage.

Romano, L., Grimaldi, R. & Colasuonno, F. S. (2016). *Demand management as a critical success factor in portfolio management.* Paper presented at PMI Global Congress 2016 - EMEA, Barcelona, Spain. Newtown Square: PMI Publishers.

Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). Essex: Pearson Education Limited.

Schatzki, T. R., Knorr Cetina, K., & von Savigny, E. (2001). *The Practice Turn in Contemporary Theory.* London: Routledge.

Sera, C. E. M. (2017). *Benefits Realization Management: Strategic Value from Portfolios, Programs, and Projects.* Boca Raton: CRC Press.

Simard, M., Aubry, M. & Laberge, D. (2018). The utopia of order versus chaos: A conceptual framework for governance, organizational design and governmentality in projects. *International Journal of Project Management, 36*(3), 460–473.

Smith, B. (2018). Generalizability in qualitative research: misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health, 10*(1), 137–149.

Söderlund, J. (2004). Building Theories of Project Management: Past Research, Questions for the Future. *International Journal of Project Management, 22*(3), 183–191.

Sopko, J. A. (2015). *Organizational Project Management (OPM) Improvement Program Management: From Why to How*. Paper presented at PMI Global Congress 2015-North America, Orlando, FL. Newtown Square: PMI Publishers.

Standish Group, The (2015). *Standish Group 2015 Chaos Report*. Yarmouth: The Standish Group.

Stanleigh, M. (2006). From Crisis to Control: New Standards for Project Management. *Ivey Business Journal. (70)*4, 1–4.

Teubner, R. A. (2018). IT program management challenges: insights from programs that ran into difficulties. *International Journal of Information Systems and Project Management. 6*(2), 71–92.

Thiry, M. (2015). *Program Management: Fundamentals of Project Management.* New York: Gower Publishing.

Tinnirello, P. (2000). *Project Management*. Boca Raton: CRC Press LLC.

Tracy, S. J. (2020). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact* (2nd ed.). Hoboken, NJ: Wiley-Blackwell.

ul Musawir, A., Abd-Karim, S. B. & Mohd-Danuri, M. S. (2020). Project governance and its role in enabling organizational strategy implementation: a systematic literature review. *International Journal of Project Management, 38*(1), 1–16.

Wang, Y. & Hazen, B. T. (2016). Consumer product knowledge and intention to purchase remanufactured products. *International Journal of Production Economics, 181*, 460–469.

Ward, J., & Daniel, E. (2013). The Role of Project Management Offices (PMOs) in IS Project Success and Management Satisfaction. *Journal of Enterprise Information Management. 26*(3), 316–36.

Weber, M. (1947). *Max Weber, the theory of social and economic organization*. New York : Collier Macmillan.

Wellington Project Management (2016). *The State of Project Management Annual Survey 2016*. Berkshire: Wellingtone Limited.

Wen, T. J., Siong, H.C. & Noor, Z. (2015). Assessment of embodied energy and global warming potential 18 of building construction using life cycle analysis approach: Case studies of residential buildings in 19 Iskandar Malaysia. *Energy and Buildings 93*, 295–302.

Westland, J. (2006). *The Project Management Life Cycle: A Complete Step-by-Step Methodology for Initiating, Planning, Executing and Closing the Project Successfully.* London: Kogan Page Limited.

Whittaker, B. (1999). What went wrong? Unsuccessful information technology projects. *Information Management & Computer Security Journal, 7*(1), 23–29.

V-Modell (2004). *The V-Modell XT*. Germany: Bundesrepublik Deutschland.

Van Bon, J. & Verheijen, T. (2006). *Frameworks for IT Management: An Introduction*. Amersfoort: ITSM Library.

Van Nguyen, T., Zhou, L., Chong, A.Y.L., Li, B. & Pu, X. (2020). Predicting customer demand for remanufactured products: A data-mining approach. *European Journal of Operational Research, 281*(3), 543–558.

Verzuh, É. (2016). *The Fast Forward MBA in Project Management* (5th ed.). Hoboken: John Wiley & Sons.

Yosua, D., White, K. R. J., & Lavigne, L. (2006). *Project controls: how to keep a healthy pulse on your projects.* Paper presented at PMI® Global Congress 2006—North America, Seattle, WA. Newton Square: PMI Publishers.

Zuber-Skerritt, O. & Fletcher, M. (2007). The quality of an action research thesis in the social sciences. *Quality Assurance in Education 15*(4), 413–436.

8 APPENDICES

8.1 Appendix I: Edinburgh Napier University Research Consent Form

EXPLORATION OF INTERCONNECTING PRACTICES IN ORGANIZATIONAL PROJECT MANAGEMENT (OPM) CONTINUUM

Edinburgh Napier University requires that all persons who participate in research studies give their written consent to do so. Please read the following and sign it if you agree with what it says.

1. I freely and voluntarily consent to be a participant in the research project on the topic of an Exploration of Interconnecting Practices in Organizational Project Management (OPM) Continuum, to be conducted by Murad Karimi, who is a postgraduate DBA student at Edinburgh Napier University. I understand that I will not be paid for my participation.

2. I have been asked to participate in a semi-structured interview, which should take no longer than 60 minutes to complete. I understand that the interview will be audio recorded and I also understand that the copy of the audio data file will not be shared with me.

3. I have been informed that my responses will be anonymized. My name will not be linked with the research materials, and I will not be identified or identifiable in any report subsequently produced by the researcher.

4. I also understand that if at any time during the interview I feel unable or unwilling to continue, I am free to leave. That is, my participation in this study is completely voluntary, and I may withdraw from it without negative consequences. However, after data has been anonymized or after publication of results it will not be possible for my data to be removed as it would be untraceable at this point.

5. In addition, should I not wish to answer any particular question or questions, I am free to decline.

6. I have been given the opportunity to ask questions regarding the interview and my questions have been answered to my satisfaction.

7. I have read and understand the above and consent to participate in this study. My signature is not a waiver of any legal rights. I have been informed that I will not be provided with a copy nor will I have access to the final research publication. Furthermore, I understand that I will be able to keep a copy of the informed consent form for my records.

_____ _____

Participant's Signature Date

I have explained and defined in detail the research procedure in which the respondent has consented to participate. Furthermore, I will retain one copy of the informed consent form for my records.

_____ _____

Researcher's Signature Date

8.2 Appendix II: Semi-Structured Interview Questions

RQ1. What are the strategic challenges and opportunities for PMO?

- Knowledge theme: PMO Structure and Strategy
  - Interview Questions:
    1. What structure does your PMO take and why?
       - Unilateral or Multilateral
       - Influences on the structure
    2. What role does your PMO play?
    3. What are the key drivers for your PMO success?

RQ2. What are the significant gaps and areas of opportunities for OPM?

- Knowledge theme: OPM Practice and Development
  - Interview Questions:
    1. What is your organization's definition of/understanding of the OPM Continuum?
    2. What do you consider are the key features of the Continuum?
       - Interconnecting relationships
       - Intertwined capabilities
    3. What are the key opportunities for and challenges to OPM interconnectivity development in your organization?

RQ3. What are the possible improvement and recommendation approaches for OPM within a PMO?

- Knowledge theme: PMO/OPM Harmonization and Improvement
  - Interview Questions:
    1. How do you see your PMO operating harmoniously with OPM Continuum?
    2. How does your organization measure OPM practice?
       - Is there a continuous improvement roadmap and if not why?
    3. What are your recommendations for PMO to adopt an OPM practice?

Thank you very much.