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Strategies to Improve Project Management Maturity Processes

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Walden University

College of Management and Technology

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Walter Sargent

has been found to be complete and satisfactory in all respects,
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Walden University
2016

Abstract

Strategies to Improve Project Management Maturity Processes

by

Walter H. Sargent

MA, Webster University, 2012

MA, American Military University, 2005

BS, Maryland University, 1984

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

December 2016

Abstract

Information technology organizations lose significant competitive value when business leaders fail to use project management maturity (PMM) processes that enhance market delivery, reduce costs, and increase profitability. Using a multiple-case study, the researcher explored strategies that project leaders have used to improve PMM processes and expanded upon Kerzner's PMM model, which comprises 5 PMM levels essential for achieving repeatable project success. The researcher selected 20 project leader participants in the Southeastern region of the United States using a purposeful snowball sampling technique. In depth interviews were combined with archival and document exploration using a multiple-case study design where different types of project offices were cross compared as the unit of analysis including governmental, corporate, nonprofit, and not-for-profit organizations. Thematic analysis and cross-case analysis revealed 6 major strategies to improve PMM processes: project leader development, customer focus, standard methodology development, interactive communication, establishing a project office organizational structure, and practicing continuous process improvement. The implications for positive social change include the potential to provide small businesses and marginally-resourced organizations, such as churches and charitable organizations, with a beneficial value that contributes to positive economic activity in the local communities they support. The results are important because they extend constrained resources and organizational buying power for deliverables required by the recipient of the altruistic act.

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Dedication

I would like to first dedicate this dissertation to my wife, Sandra M. Sargent. She has stood by me throughout our army days, our post-army days, and now our doctorate days. I would never have been able to do this without her loving support, devotion, and sacrifice. This should be it! I further want to dedicate this dissertation to our children and grandchildren, Brandon, Vincent, Justin, Ashley, Annabella, Alaina, and Alexandra. I am forever indebted for your loving support, devotion, and the sacrifices you have made. You didn't have to do it, but you did! God bless!

Next, I dedicate this dissertation to my dad, Walter Heman Sargent Jr. I never needed storybook heroes because I always had my dad to inspire me and guide me—he will always be my hero and a soldier. Rest in peace, Dad! I love you.

I further dedicate this dissertation to my mom, Doris Bette Sargent. My mom loved me unconditionally, supported me with loving sacrifice, and allowed me the creative freedom to look inside and excel. Rest in peace, Mom! I love you.

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A very special thank you goes to my good friend and mentor, Warren R. O'Brien. Ron and I sometimes see things through the same lens. Ron served in the U.S. Army as a paratrooper, a jumpmaster, a Special Forces (“Green Beret”) operator, and an army officer; he is an accounting professor, and my Brother Sir Knight with the Knights of Columbus.

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Section 1: Foundation of the Study

Challenges associated with the complex nature of organizational sustainability present extraordinary demands for project leaders (Metcalf & Benn, 2013). Metcalf and Benn (2013) posited that leadership in sustainable organizations requires leaders of extraordinary ability to achieve project success. Leaders should incorporate cost efficiencies and project effectiveness to shape the environment through effective project leadership versus effective project management (PM) (Laufer, 2012). The leadership competencies of PM contribute significantly to the successful innovative PM practices in the organization (Dumay, Rooney, & Marini, 2013). Metcalf and Benn suggested that these leaders are able to think through complex problems and engage groups in adaptive organizational change and that they have the emotional intelligence (EI) to adaptively leverage their own emotions for complex problem solving.

Spalek (2013) suggested that operating a successful project management office (PMO) is one way for companies that operate in multiproject environments to mitigate the complexities associated with organizational performance. The operation of a successful PMO, by linking project complexities within complex adaptive systems, benefits the project management maturity (PMM) level of the organization (Albrecht & Spang, 2014b). Project success has not significantly improved even though the practice of PM has evolved into a highly valued profession (Mir & Pinnington, 2014). Leadership can no longer focus on a single project. The factors that contribute to project complexity link the interactions of the project participants; this requires an ideal level of

organizational maturity, which may or may not be present in the PMO (Albrecht & Spang, 2014b).

Achieving successful realization of beneficial value derived from PM practices continues to disappoint project leadership (Doherty, Ashurst, & Peppard, 2012). This disappointment has been particularly noteworthy in information system/information technology (IS/IT) projects that absorb a considerable amount of time, money, effort, and lost opportunities (Doherty et al., 2012). The project managers subsequently failed to deliver the expected benefits.

Albrecht and Spang (2014a) noted there is an ideal PMM level for an organization; this ideal level complements the cost and benefit of the investment in the development of the PMO and its PMM level. Project managers who also practice benefits realization management (BRM) represent an important aspect of PM by gaining the projected return on investment (ROI). When project leaders understand and implement a benefits realization approach to PM, the organization may gain a significantly increased rate of project success (Coombs, 2015).

Background of the Problem

Companies that undertake activities and processes in a multiproject environment through continuous planning and execution of projects are able to maintain a competitive advantage (Spalek, 2014). Spalek (2014) suggested that companies that increase the number of projects executing simultaneously were more likely to retain a competitive advantage by realizing a greater ROI, especially in a tight market economy. Reducing costs should be a management goal, but it is particularly important during severe

economic downturns (Spalek, 2014). Mustafa (2012) suggested that the reason most PMOs experience failure is due to improper implementation of the PMO within the organization. Companies that operate in turbulent environments have to make quick changes to control and manage their current and future operations. A PMO that is poised to react within a fast decision-making cycle—because of operating at the ideal PMM level—is in a better competitive position to survive the turbulent times (Albrecht & Spang, 2014b; Spalek, 2014).

The PMO is a key organizational element in a company's overall performance because the PMO can influence specific project outcomes; this success often improves the efficacy of company operations (Beringer, Jonas, & Gemunden, 2012; Pemsel & Wiewiora, 2013; Spalek, 2013). Operations in multiproject environments are common in business today. The successes of organizational PM, characterized by improvements in the PMM processes, depend on corporate investment in the PMO (Spalek, 2014).

Problem Statement

IT companies lose considerable competitive value when business leaders fail to use PMM processes to enhance market delivery, reduce cost, and increase quality to optimal levels (Lappe & Spang, 2014; Spalek, 2014). The failure rate of IT projects in the public sector is 84%, a figure that represents approximately \$150 billion lost in the United States each year (Altuwaijri & Khorsheed, 2012). The general business problem is that IT project leaders are often unable to manage processes in the PMM model, which results in a lower ROI. The specific business problem is that some IT project leaders lack strategies to improve PMM processes.

Purpose Statement

The purpose of this qualitative multiple-case study was to explore strategies to improve PMM processes used by IT project leaders. The target population consisted of 20 IT project leaders working in the southeast region of the United States who had strategies to improve PMM processes. In addition, I conducted document and archival analysis to help corroborate the meaning of the participant interviews and to instill triangulation into the data collection process. Participant project leaders came from various types of PMOs: (a) governmental, (b) corporate, (c) nonprofit (NPO), and (d) not-for-profit (NFPO) organizations. The exchange of project leader experiences from multiple types of PMOs contributes to social change by improving the economic conditions in local communities supported by benevolent groups and expanding charitable and socially responsible projects.

Nature of the Study

In this qualitative study, I explored the in-depth experiences of project leaders to understand which PMM processes affect successful project performance. Albrecht and Spang (2014a) used a qualitative approach to conduct an exploratory, multiple-case study that revealed the complexities involved in identifying the “ideal” PMM level in various types of organizations. Chih and Zwikael (2015) conducted qualitative exploratory interviews and determined that successful realization of project benefits can positively influence organizational performance. A qualitative method that is exploratory in nature was appropriate for this study because it can potentially bridge the gap between PM theories and PM practice (Breese, 2012). A quantitative approach would not have been

appropriate because it would require a numerical model that would not support the exploration of the experiences of the participant project leaders within the various PMOs (Vankatesh, Brown, & Bela, 2013). A quantitative analysis could not have provided a value-added contribution to the exploration of experiential observations (Vankatesh et al., 2013).

I determined that a multiple-case study was the appropriate research design tool needed to address the research question. Each case study served as an empirical investigation of a contemporary phenomenon within a real-world setting (Yin, 2014). Best practice themes identified and summarized from the multiple-case study emerged from four organizational situations: (a) public, (b) private, (c) NPO, and (d) NFPOs. Yin (2014) identified the use of a qualitative multiple-case study design as an appropriate methodology to explore the experiences of project leaders in various situations.

Research Question

An overarching research question guiding this study focused on the efforts driving successful project achievement. The research question was: What strategies do IT project leaders use to improve PMM processes?

Interview Questions

An interview protocol instrument provided background elements to help define the PMM level of each PMO. These elements provided the basic linkages of the PMM level within that particular PMO. The interview protocol also facilitated the collection of information regarding (a) PM methodologies within the organization, (b) the demographics of the IT project leaders for preliminary background information, and (c)

the organizational structure and level of executive involvement in PM. The unit of analysis of the cases was that of the PMO, which was analyzed against other PMO cases through *cross-case analysis*. The cross-case analysis of the PMM level across the cases helped to illustrate the PMM processes within the IT industry that were integrated in the interview protocol. The qualitative elements of the instrument offered a common baseline to introduce the IT project leaders and to support a foundation of knowledge before the interviews. The face-to-face interviews helped to generate robust in-depth data about the PMOs, the IT project leaders, and the PMM processes of the organization. The following are the face-to-face semistructured interview questions:

1. Which PMM processes most contribute to project success?
2. What is the best way to determine project success?
3. How do you determine ROI or realized beneficial value?
4. How does organizational structure contribute to project success?
5. What is your organization's PMM level? How did you determine the PMM level?
6. What strategies have you used to apply PMM processes?
7. What project leader professionalization strategies have you used that contributed to project success?
8. How does your organization implement PMM processes optimally?
9. How does being in a particular type of project office facilitate project success?
10. What PMM processes does your PMO use to help predetermine success?

11. What challenges do you encounter in implementing PMM processes to achieve project success?

Conceptual Framework

PMM is a measure of the development and evolution of the company's methods, tools, and techniques related to PM; the PMM level indicates improvements in areas such as on-time project delivery, cost reductions, organizational efficiency, and profitability (Spalek, 2014). The application of the PMM model as a tool has continuously evolved and has been applied in more than 30 separate research approaches (Brookes, Butler, Dey, & Clark, 2014). The PMM model, developed between 1983 and 1993, evolved from the capability maturity model (Paulk, Weber, Curtis, & Chrissis, 1993) and later developed into the capability maturity model integration introduced by the Software Engineering Institute (SEI). The concept of PMM levels emerged in the 1990s (Kerzner, 2013). As the level of maturity in the PMO increases, the level of investment also rises (Spalek, 2014); ROI is also a factor in achieving equilibrium and establishing an ideal PMM level.

According to Spalek (2014), the most significant tool leading to improvement in the efficiency of PMO activities is the assessment of maturity levels in PM. The basis for achieving excellence in PM is the PMM model (Wysocki, 2014), which comprises five levels: Level 1, initial; Level 2, repeatable; Level 3, defined; Level 4, managed; and Level 5, optimized. In this framework, organizations must complete the levels in order, and many of the activities can overlap. The model provides a tool to measure capabilities, structure, processes, and competencies against specific technological or professional

benchmarks (Stevens, 2013). New research could fill the knowledge gap by providing assessments of the PMO's PMM levels and PMM process-improvement strategies.

Operational Definitions

The following terms established the basis and context of this research study.

Benefits realization: Benefits realization, realized benefits, or realized beneficial value are the effect of the deliverables on the organization. Benefits realization management (BRM) is a set of processes designed to narrow the gap between strategic planning and implementation of the most critical or valuable initiatives (Serra & Kunc, 2015). The benefit to the organization is the expected measurable output defined by the stakeholders' requirements. The measure of the effect on the organization is the realized benefit, rather than the deliverable itself (Lappe & Spang, 2014).

Project leaders: Project leaders own the ultimate overall responsibility for full delivery of a completed project and are responsible for achieving its expected outcomes (Redick, Reyna, Schaffer, & Toomey, 2014).

Project leadership: Project leadership provides clear communications about goals, responsibilities, performance, expectations, and feedback (Barry, 2012).

Project management: PM applies knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI, 2013a).

Project management maturity: PMM represents implementation of standardized processes and methodologies that can increase the probability of repeated project successes (Kerzner, 2013).

Project management office: A PMO is an organizational structure that standardizes project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (PMI, 2013a).

Project manager: The project manager is the person assigned by the performing organization to lead the team and is responsible for achieving the project objectives (PMI, 2013a).

Project office: The project office is a temporary management structure created to coordinate and support multiple independent project teams, as opposed to a PMO or project support office (Wysocki, 2014).

Project support office: The project support office can be either a temporary or permanent organizational structure that provides a variety of services; the project support office is responsible for supporting project teams within a particular array of projects (Wysocki, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are facts that are considered true but beyond a researcher's control; if they disappear, the study would become irrelevant (Simon & Goes, 2013). I made three assumptions in this study. The first was that cost efficiencies and controls as related to value are positive attributes, and that organizational leadership would strive to reduce financial waste and ensure compliance with standards and procedures to improve performance and project development (Spalek, 2014). The second assumption was that the body of data obtained from this study would serve as a legitimate representation of

the population under study. The concept of PMM process was not tied to one particular PMM model (Mullaly, 2014). In this study, the specific PMM model was not important because I did not presume that there was only one correct model for all types of organizations. The final assumption was that increasing the PMM levels in the PMO would lead to an equal or greater corresponding increase in the project success rate in performance (Spalek, 2014).

Limitations

Limitations are potential technical and social weaknesses of the study that would limit the research area under consideration (Madsen, 2013). I explored the experiences of the PMO's project leaders through the administration of face-to-face interviews, an approach that could invoke protective measures to defend the organization from a perceived threat. For the study, I used a qualitative multiple-case study approach to support an in-depth exploration of the points of view of the members of PMOs; I recognize that the perspectives of the project leaders may not always be free of bias (Marshall & Rossman, 2016). Participants may have misrepresented concepts and made misleading comments, intentionally or unintentionally. In addition, because the interviews occurred in different PMOs with unique operational perspectives, procedures, and policies, the comments may have presented conflicting content and might not have applied to all types of organizational PMOs. As I collected data from only a limited number of participants within four PMOs located in the southeastern United States, the results may not be relevant to all U.S. project offices and PMOs. The results are not necessarily generalizable to all PMOs in the United States (Marshall & Rossman, 2016).

Delimitations

Delimitations describe study boundaries set within the research project and involve narrowing the scope of study that best contributes to the research question (Bartoska & Subrt, 2012). Delimiting concepts included (a) governance, (b) themes of success and failure, and (c) the challenges facing management within the various PMOs. The scope and geographic location of interviews included project leaders from PMOs in the southeastern United States, between Washington, DC, and Tampa, Florida. The following factors ensured triangulation from multiple sources: (a) face-to-face semistructured interviews, (b) a structured PMM interview protocol, (c) on-site visits to the PMO locations, (d) archival documents from the PMO, and (e) multiple cases from different business environments (Yin, 2014).

To expand the application of the results, the research included a review of scholarly, peer-reviewed data. These resources were related to the following themes: (a) realizing beneficial value, (b) ROI, (c) PMO, (d) PMM, (e) project success and failure, and (f) case and cross-case analysis.

The level of work experience of the interview participants was naturally varied. However, all participating members had at least 3 years of work experience before participating in the study. For this research, I established a goal to include project leaders with different backgrounds and from several different types of offices that support PM, especially in organizations with no designated PMO. This study incorporated face-to-face interviews with 20 participants from four separate PMOs, using semistructured, open-

ended questions to explore the respective organizations' levels of PMM processes and best PM practices to realize project successes.

Significance of the Study

The significance of this study is the benefit of sharing PMM processes with the stakeholders of NFPO—such as churches and underfunded educational organizations—and small businesses, by increasing understanding of the value of the PMO's PMM level (Spalek, 2014). PMM is significant as organizational leadership emerges to realize an increase in PM performance (Lappe & Spang, 2014). I did not presume a PMM model to be universal, control oriented, or consistent (Mullaly, 2014). But the members of organizational leadership, project managers, PM team members—as well as academics—may benefit from the findings of this research through creation of strategic value for the organization and through a demonstrated understanding of the potential increase in profitability and realized beneficial value (Coombs, 2015; Serra & Kunc, 2015). True PM successes lead to operational effectiveness and cost efficiencies that result in higher profitability and secure a competitive advantage in the industry for a company, a small business, or an NFPO (Lappe & Spang, 2014).

Contribution to Business Practice

Increasing the PMM level of the PMO affects future project costs and positively affects employee training, new tool development, and improved staff skills (Spalek, 2014). Improving the work environment in the PMO leads to greater job satisfaction and job security, both of which have a lasting impact on the triple constraint of PM (performance, time, and cost) in the IT industry (Hamid, Ghafoor, & Shah, 2012).

Applying the PMM model to improve business practices throughout the organization is a proven method of generating performance changes through the factors of (a) cultural intelligence, (b) EI, (c) knowledge management, and (d) CPI (Brookes et al., 2014).

Implications for Social Change

Investing in the PMO to improve the PMM processes of that organization may positively contribute to social change (Spalek, 2014). This process occurs through the professional development of the people in the PMO assessed at PMM Level 1, which could improve the overall performance of the company (Kerzner, 2013). There was no specific PMM model used in this study that could be used in subsequent studies. Mullaly (2014) found that PMM models are not universal and projects are not always linear.

Other business organizations, government organizations, or nongovernmental organizations that do not have adequate resources to specifically invest in PMM development are stakeholders as much as academic institutions and big business are (Mullaly, 2014). For example, an NFPO that does not have a formal PMO can identify and use best practices, and it should adopt professional PM tools and techniques to raise its PMM from Level 1 to Level 2 (Kerzner, 2013). This was possible without having to invest internal resources in a formal PMO to realize the benefits of an improved PM performance (Coombs, 2015).

This simple aspect of the study can generate cost efficiencies and performance effectiveness due to improved PMM levels and sustainable development in PM, even if the increase is minimal (Silvius & Schipper, 2013; Sundqvist, Backlund, & Chroneer, 2014). This can (a) result in positive structural changes to the organization, (b) produce

positive changes in project performance, and (c) increase the probability of project success across the PM enterprise and within the portfolio itself (Sundqvist et al., 2014). Silvius and Schipper (2013) suggested that PM sustainability will be a significant challenge for future generations. This can be especially effective due to the nature of temporary organizations established for PM (Silvius & Schipper, 2013). Temporary projects rarely address sustainability issues, such as balancing social, environmental, and economic interests for the life of the project (Eskerod & Huemann, 2013; Silvius & Schipper, 2013).

Overall, small businesses and marginally resourced organizations such as some churches or some educational foundations have realized economic benefits and have contributed to positive economic transference in the communities in which they provide support (Lappe & Spang, 2014). For example, an NFPO that works on a tight budget to provide clean water to impoverished communities in Africa may benefit by applying the concepts discussed in this research study. The result could be that the NFPO will provide a greater amount of resources or services to the beneficiary of the benevolent act.

Review of the Professional and Academic Literature

The purpose of this qualitative multiple-case study was to explore the experiences of different project managers in various PMOs, as defined by their experiences with PMM. The central research question was: What strategies do IT project leaders use to improve PMM processes? The question is appropriate because the ideal PMM level can lead to increased profitability and economic value (Albrecht & Spang, 2014a). The identification of the best practices to maximize economic value through BRM may come

from qualitative research methods using exploratory multiple-case study design (Albrecht & Spang, 2014a). An in-depth exploration of PMOs that use PMM levels as a means of BRM could lead to an increased knowledge and understanding for other PMOs and small businesses to implement (Lappe & Spang, 2014; Spalek, 2014).

The information in the literature review contains a detailed review of current and seminal peer-reviewed literature. The literature topics related to the overall research include strengths, weaknesses, limitations, and potential for future research. In the literature review, I focus on the following key areas: (a) PMOs, (b) PMM, (c) leadership in PM, (d) project success and failure, and (e) BRM. The foundation of the literature review was based on searches of numerous databases, including (a) ABI/INFORM Complete, (b) Academic Search Complete, (c) Business Source Complete, (d) Dissertations & Theses at Walden University Library, (e) Emerald Management Journals, (f) Google Scholar, (g) ProQuest Central, (h) Sage Premier, and (i) Sage Stats. The keywords and phrases that I used in the database searches included (a) *project management maturity in the project management office*, (b) *BRM and project management maturity*, (c) *BRM in the project management office*, (d) *beneficial value of project management maturity*, (e) *project leadership in the project management office*, (f) *project success and project failure in the project management office*, and (g) *best practices of the project management office*. There are 132 total sources cited within the study. I cited 120 sources (90%) that are less than 5 years old from the projected graduation date of December 2016. I cited 128 peer-reviewed sources (97%), including one dissertation that is not peer-reviewed but does count as a peer-reviewed source for up

to 10% of the peer-reviewed total count. In the literature review, I cite 83 peer-reviewed sources out of a total of 85 sources; thus, 97% of the sources that I cited in the literature review were peer-reviewed.

Project Management and Organization

The definition of PM is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI, 2013a). Sundqvist et al. (2014) suggested that PM could be described as different kinds of processes that can provide clarity to project and process efficiency and effectiveness, and improve time, cost and quality. Process efficiencies and effectiveness can also improve and enhance customer service (Sundqvist et al., 2014).

PM generally refers to project, program, or portfolio management as part of a practice management system and within a PMO (Singh & Lano, 2014). Singh and Lano (2014) described a practice management system as a set of (a) processes, (b) procedures, (c) frameworks, (d) methods, (e) tools, (f) methodologies, (g) techniques, and (h) resources used to manage the project life cycle from beginning to end. Singh and Lano also identify two main standards for PM: Project Management Body of Knowledge (PMBOK) by PMI, USA; and PRINCE2 by APMG, UK. The PMBOK defined a *project* as “a temporary endeavor undertaken to create a unique product, service or result” (PMI 2013a, p.553). PRINCE2 defined a *project* as “a management environment that is created for the purpose of delivering one or more business products according to specified business need” (Singh & Lano, 2014, p.108). Tahri and Drissi-Kaitouni (2013)

characterized the *project* “by a set of coordinated actions involving diverse skills and resources to achieve a specific outcome in a defined time interval” (p. 319).

The project manager is the person assigned by the organization to lead the team responsible for achieving the project objectives, and a project is a temporary endeavor to create a product, service, or result (PMI, 2013a). According to Wysocki (2014), a project is a sequence of activities and events that has a singular purpose, goal, or objective, bound by time, budget, and specifications. According to Morris (2014), defining *characteristics* of a profession are ownership of a (a) distinct body of knowledge, (b) code of ethics, and (c) standard by which to operate within the profession. Morris posited that the PM profession is most valuable to the PM practitioner and further contended that if academia alone maintains a critical role in processing and framing the professional knowledge, the practical application of the profession could be lost. Morris suggested that to go beyond academic knowledge requires experiential knowledge that transects a broad range of topics that are technical and that require a judgmental approach in execution. The key factor in successful PM is the combination of knowledge, skills, and abilities of practicing project managers that enables them to efficiently implement and execute projects in an increasingly complex project-based environment (Morris, 2014).

Investing in the organizations established to provide PM support or to actually execute the PM processes is becoming more important as projects become more complex (Spalek, 2014). According to PMI (2013b), between 2010 and 2020, 15.7 million new PM roles will be created globally. Presently, approximately 25% of global economic activity takes place as project work (World Bank, 2012, as reported by Bredillet,

Tywoniak, & Dwivedula, 2015). Flyvbjerg (2013) proposed that using PM processes reduces internal biases by (a) focusing on the front-end estimates of cost and benefits, (b) mitigating planning errors through quality control of decisions, (c) defining *quality control* and *due diligence*, and (d) testing the procedures. Flyvbjerg demonstrated the need to position the PM function in a prominent part of the organization. Projects are taking a central role as a delivery model for products and services in most organizations today. PM has become a core business activity and is vital to the organization as a whole (Flyvbjerg, 2013). The need for business and government to keep up with the increasing complexities of current and future projects requires the development of competent project managers (Bredillet et al., 2015; Ramazani & Jergeas, 2015).

Too and Weaver (2014) suggested that to realize an optimal return on the investment in the project, there must be a clear link between project output and the requirements of the organization's business or operational strategy. Wells (2012) contended that the benefits at the strategic level of PM might be misaligned with the goals of PM at the project level due to the varying levels of experience, authority, accountability, and overall responsibility of individual project managers. Too and Weaver also suggested that there are four key elements needed to improve project performance and capitalize on the project output as an investment: (a) portfolio management, (b) project sponsorship, (c) PMO, and (d) projects and program support, elements created through effective organizational structure to provide project governance. An organizational structure that can facilitate or actualize an organizational list of services to support the project teams responsible for individual projects can contribute to effective

project governance and optimization of PM (Wysocki, 2014). PM methodologies cannot be captured very effectively because the PM processes are highly people-oriented and context-sensitive (Wells, 2012). Providing centralized support assigned to a larger PMO is essential to fulfill the project and portfolio needs of management.

Research concerning PM has evolved in the course of many years. A division of labor among the different professions led to institutionalizing the practice of PM (Garel, 2013). However, according to Garel (2013), there is not a single unifying theory of PM based on its historical perspectives and evolved theories. PM's fundamental purpose is to maximize productivity, primarily through effective management of the triple constraint of scope, time, and cost that are present throughout any project's life cycle (Hamid et al., 2012). The discipline of PM as a theory is grounded in the practice as a legitimate field of research (Hamid et al., 2012). Therefore, PM is more than an evolution of tools, techniques, and practices (Garel, 2013). The profession itself is a history in the making, evolving through a division of labor in the organization's structure into what is today commonly known as the PMO (Salameh, 2014).

Project Management Office

A PMO can provide historical views of projects as a baseline to compare with actual project performance (Salameh, 2014). A PMO can be a functioning force for business to critically evaluate limited resources based on the triple constraint that forces the business to prioritize projects (Hamid et al., 2012; Wysocki, 2014). The PMO requires the project manager to employ better planning, portfolio selection, coordination, and execution to complete more projects on time and within budget. Furthermore,

projects within portfolios are often globally dispersed, which creates challenges to communication and coordination efforts (Daim et al., 2012). The onsite PMO can support virtual PMOs via (a) e-mail, (b) video, (c) telephone conferencing, (d) chat, and (e) video conferencing. Daim et al. (2012) listed five distinct topic areas that contribute to communication breakdown in global virtual teams: (a) trust, (b) interpersonal relations, (c) cultural differences, (d) leadership, and (e) technology. In addition, Verberg, Bosch-Sijtsema, and Vartiainen (2013) presented four conditions that facilitate success in the virtual PMO: (a) established rules of communication and clarity, (b) PM style and goal-setting, (c) managers' competencies, and (d) trust in the team. A virtual PMO can enable full collaboration, vital for task accomplishment of fully dispersed projects, without the need for colocation.

Consider the PMO as a key organizational element in company performance. The PMO can influence project outcomes, which improves the efficacy of company operations (Beringer et al., 2012; Pemsel & Wiewiora, 2013; Spalek, 2013). Multiproject environment operations are the norm in business today. The success of these projects is critically important and centers on an investment in the PMO that can be determined by the PMM assessment (Spalek, 2014).

The PMO is an organizational structure that standardizes project-related governance processes and facilitates the sharing of (a) resources, (b) methodologies, (c) tools, and (d) techniques (PMI, 2013b). Khan, Beg, and Ahmad (2013) defined the *PMO* as an organizational entity responsible for centralized and coordinated management of the

projects within its domain. The role of the PMO can range from providing support functions for PM to being directly responsible for the PM (PMI, 2013b).

A PMO can be classified in several ways, based on the level of importance the PMO plays in developing PMM within the organization, for example, or as a broad functional group (Salamah, 2014). According to the PMI *Pulse of the Profession* (2013b), the type of function and scope of integration in the organization determine the PMO classification framework. PMI has identified five PMO type frameworks:

- *Organizational Unit PMO/Divisional PMO/Departmental PMO*: Considered the most dominant type of PMO, this PMO provides project-related services to support the business unit, and is found mostly in the fields of IT, consulting, and telecommunications (PMI, 2013b).
- *Project Support/Control Office PMO*: Found in IT, government, and manufacturing fields, this PMO provides enabling processes to continuously support the units throughout the organization (PMI, 2013b).
- *Enterprise PMO*: Considered the highest level of PMO because it is responsible for aligning projects and programs to the business strategy, ensuring enterprise governance and functioning as the portfolio manager, this PMO ensures that benefits are delivered to realize value from strategic investments. This type of framework is found in government, manufacturing, and energy (PMI, 2013b).
- *Center of Excellence PMO*: Functioning as the central point of contact for all PM in the organization, this PMO provides the organization with the

methodologies, standards, and tools that empower project managers within the organization to be successful (PMI, 2013b).

- *Project-Specific PMO*: This PMO may be better defined as the project support office, in that it provides project-related service to a temporary organization established for a specific project (PMI, 2013b).

The organization's strategic objectives, needs, and mission determine the specific classification of the PMO (Salamah, 2014). Every organization establishes the type of PMO that fits within the framework of the business, which in turn drives the functional ability of the PMO.

According to the PMI *Pulse of the Profession* (2013), a PMO can perform a large array of functions and services depending on the size and type of the organization. The services the PMO provides depend on the type and scope of the PMO itself (Salamah, 2014). Salameh (2014) provided the following list of functions a PMO may provide:

- standards, methodologies, and processes;
- project/program delivery management;
- portfolio management;
- talent management;
- governance and performance management;
- organizational change management;
- administration and support;
- knowledge management; and
- strategic planning.

Khan et al. (2013) identified a greater business value proposition for the PMO during a period of global recession. They found that the businesses have a greater expectation from their PMO during periods of economic recession, asking that they not only provide the standardized functions listed above, but also offer more business value to the organizational sponsor. These functions were:

- benefits tracking or ROI;
- expert work planning, estimating, and scheduling;
- coordinating resource management;
- structured progress tracking and forecasting;
- robust scope management and integrated change control;
- budget and cost efficiency;
- stakeholder/communication oversight;
- industrialized quality management;
- risk management;
- comprehensive knowledge/records management; and
- fully integrated project delivery framework and processes.

Much of the current research on PMO focuses defining the value of the PMO and how to measure the PMO value for ROI justification (Khan et al., 2013). Many organizations are establishing and successfully operating PMOs (Esquierro, Valle, Soares, & Vivas, 2014; Khan et al., 2013; Mariusz, 2014; Pemsel & Wiewiora, 2013; Salameh, 2014; Spalek, 2013). Other researchers have found that after several years the PMOs are in decline (Khan et al., 2013; Mariusz, 2014; Salameh, 2014; Salameh &

Alnaji, 2014). Evidence suggests that the PMO can positively affect project success (Esquierro et al., 2014; Spalek, 2013; Too & Weaver, 2014). Achieving and maintaining the success of the PMO requires BRM for ROI justification (Albrecht & Spang, 2014a; Chih & Zwikael, 2015; Lappe & Spang, 2014).

The functions of the PMO ensure alignment of the business strategies that prepare the organization to realize the value of the successful project delivery, on time and within budget (the triple constraint) (Hamid et al., 2012; Pemsel & Wiewiora, 2013). The functions of the PMO provide emphasis on best practices that support the greater good of the organization (Mariusz, 2014; Salameh, 2014). As the PMO evolves and matures, the organization becomes more capable of implementing a comprehensive approach to PM structure through a higher degree of PMM (Albrecht & Spang, 2014a). PMM is one of the most important tools developed to complement the type and functions of the PMO. Khan et al. (2013) posited that the key driver in organizational performance improvement is not the implementation of a PMO, but the maturity level of the PMO.

Project Management Maturity

The PMM model is a process-oriented view of PM. It has emerged as an efficient tool to define quality-based benchmarks established on (a) strategic alignment, (b) effectiveness, (c) integration, and (d) optimization (Pasian, Sankaran, & Boydell, 2012). Stevens (2013) remarked that an organization can assess maturity and growth and define organizational evolution based on industry, technology, or professional standards. Table 1 depicts PMM levels as the integration of multiple disciplines within the model. The PMM model provides a baseline to measure progress toward excellence, and increases

the likelihood of achieving project success (Spalek, 2014). The concept of PMM modeling presents a series of five progressive and developmental stages to increasingly higher levels of maturity: Level 1, initial; Level 2, repeatable; Level 3, defined; Level 4, managed; and Level 5, optimized (Backlund, Chroner, & Sundqvist, 2014). Backlund et al. (2014) posited that the five levels of PMM function as a baseline to measure the maturity of the organization's process and to evaluate its process capability, and can be used to prioritize the organization's self-development efforts.

Using modern PM to achieve strategic goals, in many cases, leads to business success (Neverauskas & Raitaite, 2013). Organizations are achieving their operational strategic goals through extending the influence of PM, which is achieved more often by expanding efforts to improve professional knowledge and skills in PM (Neverauskas & Raitaite, 2013). Neverauskas and Raitaite (2013) suggested that it is the effort in trying to increase the organizational PMM levels that is the significant reason for achieving the strategic goals. According to Tahri and Drissi-Kaitouni (2015), there are an increasing number of maturity models available to an organization. The maturity model allows an organization to assess and compare their practices against other best practices or the PM practices of their competitors (Tahri & Drissi-Kaitouni, 2015). The goal of the PMM assessment would be to map out a structured plan to improve or mature organizational PM processes. Tahri and Drissi-Kaitouni suggested that a maturity model can apply to a business unit, functional group, or department. Neverauskas and Raitaite posited that the literature lacks detailed empirical research; this is attributable to the broad variances that exist among maturity models in scope, structure, and organizational PM.

The PMM model integrates various disciplines into the progressive levels of growth and maturity. The PMM model integrates the concepts of (a) process improvement, (b) EI, (c) cultural intelligence, (d) innovation, (e) knowledge management, and (f) training competencies, and suggests that project managers integrate technical (hard skills) and people-based (soft skills) competencies to plan and implement successful projects (Jugdev & Mathur, 2012). The availability of knowledge and the ability to access and share knowledge suggests that the organization is a learning organization with the capacity for increased productivity to support and sustain competitiveness (Bartsch, Ebers, & Maurer, 2013). Backlund et al. (2014) indicated that knowledge of applied PMM in organizations is limited and suggested that the contribution of PMM to organizational development is therefore unclear.

Table 1

Project Management Maturity Levels

Level 1: Initial	Level 2: Repeatable	Level 3: Defined	Level 4: Managed	Level 5: Optimized
Ad hoc process	Defined PM processes	Integrated PM processes with PMO oversight	Project portfolio managed as part of PMO business process	CPI of all the PMO services and processes
	Reactive support from PMO	Proactive support from PMO		
No training from the PMO	Some training	Robust training	Extensive training	
Common language	Common tasks	Single methodology	Benchmarking	
Knowledge chaos	Knowledge awareness	Knowledge focus	Knowledge management	Knowledge sharing
EI: self-awareness	EI: self-regulation	EI: self-motivation	EI: empathy/ cross-cultural sensitivity	EI: social relationships/ networks

Note. PM = project management; PMO = project management office; CPI = continuous process improvement; EI = emotional intelligence. Integrated project management maturity levels (Hooper, 2013; Lin, Wu, & Yen, 2012; Wysocki, 2014).

Process improvement and knowledge management. CPI is the scientific approach to identifying a gap and systematically monitoring, and controlling the process to improve business practice and PM processes (Wysocki, 2014). The business processes describe how organizations operate and perform; the business practices reflect how the business applies the process (Looy, De Backer, Poels, & Snoeck, 2013). CPI practices and techniques are the tools project managers use to systematically assess and improve capabilities (i.e. skills or competences) to achieve business process excellence (Looy et al., 2013). In the PMM model, process improvement trains the focus on achieving business and economic value (Shao, Muller, & Turner, 2012).

In one study, at Level 1, existing PMM knowledge was not managed or acknowledged in any formal capacity (Lin, Wu, & Yen, 2012). Knowledge management and process improvement begins at Level 2 with a need to execute a repeatable process and methodology due to an increase in the number of complex projects. Pasian et al. (2012) noted that immature project manager capabilities result in non-predictable practices. As the PMO staff performs the work of process documentation, awareness of the need for knowledge management begins (Lin et al., 2012). At Level 3, the PMM model more specifically defines processes and senior leader acknowledgement (Wysocki, 2014). Holzmann (2013) suggested that it is an awareness of institutional knowledge that provides a focus on the standardized use of knowledge. This realization leads to PM practices of integrating PMM into the business processes and requirements of Level 4 (Wysocki, 2014). Formal knowledge management practices (Lin et al., 2012) and the

revelation of organizational learning (Neverauskas & Raitaile, 2013) also begin to emerge at Level 4.

At Level 5, PMM is poised to become a critical component of strategic planning and value integration (Wysocki, 2014). Integrating knowledge management and BRM is a Level 5 function (Gomes & Romao, 2015). However, Gomes and Romao (2015) suggested BRM might be recognized as early as a Level 1 organizational function and a Level 2 senior-management-acknowledgement function. Heising (2012) suggested that the repeatable processes of successful practices are useful for improvement, balancing, and strategic organizational integration. The shared knowledge that now begins to filter through the organization fosters innovation, creativity, and sustained competitive-advantage opportunities (Lin et al., 2012).

Emotional and cultural intelligence. Defined as one's own ability to recognize, regulate, and use emotional information to achieve effective performance results, *EI* is one of the most impactful areas of a PMM model (Emmerling & Boyatzis, 2012). Maini, Singh, and Kaur (2012) reported that EI as a social competency had a positive effect on strategic and economic outcomes because of one's ability to perceive, effectively manage, and impact the emotions of others. As the PMO elevates through the levels of the PMM model, the project manager's EI competency begins to expand within the maturing organizational environment (Pasian et al., 2012). Emery (2012) suggests that the regulation and control of one's EI begins at Level 2 of the PMM.

Nixon, Harrington, and Parker (2012) suggested that at Level 3 a person uses emotions to drive self-motivation, and at Level 4 the development of one's work abilities

begins to facilitate cross-cultural relationships through an enhanced ability to manage emotions. Pasian et al. (2012) observed that at Level 5, human factors not confined by processes may contribute to the organization's PMM through the value-added effects of (a) leadership, (b) cultural awareness, (c) resource management responsibility, and (d) enhanced teamwork. The evolution of the team into a highly functional, emotionally integrated group can result in a high-performing organization and can lead to full PM integration (Creasy & Anantatmula, 2013). Emotionally competent project managers are better able to provide persuasive leadership to integrate effective practices, processes, and PM techniques (Nixon et al., 2012). Pemsel and Wiewiora (2013) further elaborated that an emotionally intelligent practitioner may be more successful at integrating business practices and sharing knowledge, success factors at Level 5 of the PMM model.

The impact of cultural differences on business and society in general is tremendous. One need only look as far as the front page of a newspaper to see how cultural diversity plays out in regard to the war on terror in various countries or in the streets of many cities in the United States. Koo Moon, Kwon Choi, and Shik Jung (2012) posited that *cultural intelligence* is an attribute that compels people to behave in a positive manner in diverse cultural contexts. Naeiji and Safikhani (2014) suggested two perspectives in the development of emotional and cultural intelligence: (a) the selection, training, and evaluation of managers, and (b) the acquisition of cultural and EI skills, capabilities that can be developed in the personnel of the organization. Cultural intelligence and EI are leading factors in successful organizational leadership (Emmerling & Boyatzis, 2012).

Culture may be seen as the means by which a group of people solves problems; it can be defined by national boundaries, or by corporate or professional societies (Trompenaars & Hampden-Turner, 2012). Cultural intelligence in general is the ability to behave appropriately in cross-cultural environments (Crowne, 2013). Crowne (2013) described national culture as that which collectively distinguishes the members of one country from that of another people, and establishes a social context that allows behaviors to be understood. People in certain professional societies behave in ways that conform to the ethical code of that organization, another way culture can affect the successful outcome of a project (Trompenaars & Hampden-Turner, 2012). Understanding how culture affects the outcome of projects is an aspect of cultural intelligence; such awareness helps one to overcome cultural barriers (Crowne, 2013).

Trompenaars and Hampden-Turner (2012) suggested that employees share the same perceptions of the organization. These common beliefs have significant consequences for an organizational culture that has developed over time. Leaders and non-managing employees choose cultural preferences to shape the development of their organizational culture, regardless of the personnel system of the organization—whether military, government civilian, private company, etc. (Blasco, Feldt, & Jakobsen, 2012). Another important aspect of cultural intelligence is that it permits leaders and employees to share an understanding of the process of change (Blasco et al., 2012), especially among personnel trained to understand and apply the concepts of cultural intelligence.

Innovation. This section explores innovation and the necessary culture of innovation in contemporary organizations. Not all organizations innovate. Innovation can

be risky if there is no guarantee of a positive outcome; this is especially true since innovation is often an expensive proposition (Blanchard, Huiban, Musolesi, & Sevestre, 2012). Openness to innovation begins with leadership creating favorable conditions in the organization and inculcating an innovative consciousness in individuals and in the collective (Dumay et al., 2013).

Innovative leaders must be creators (Srinivasan, 2012). Our attitudes determine our innovative and creative ability, and our behavior determines our attitudes. This is true even if we "fake it till we make it." If we mimic being happy and positive, then we become happy and positive by triggering emotions we need to strengthen creativity (Srinivasan, 2012). Maintaining a positive attitude is important, if not critical, to the innovative process.

The leaders of the future will be among the creative geniuses capable of cultivating the innovative consciousness of individuals from within their organizations (Srinivasan, 2012). Srinivasan posited that management should focus on (a) attitudes, (b) thinking processes, (c) development of intuition and imagination, and (d) motivation. Some vital factors that enable free expression in an organizational environment are creative liberty, creative balance, and creative time (Srinivasan, 2012). *Creative liberty* describes an environment or atmosphere of freedom. The *creative balance* lies between ideas involving mission focus and alignment, on the one hand, and on the other the innovation that is not related to immediate customer satisfaction. *Creative time* requires sufficient time for free and relaxed thinking; leadership must work to reduce speed and fast changes, which are counterproductive to creative thinking (*slow it down!*).

There are three types of innovation: (a) incremental, (b) evolutionary, and (c) breakthrough or radical (Dumay et al., 2013; Srinivasan, 2012). Every company has its own terms and definition of innovation. Proctor & Gamble, for example, uses the word *sustain* to describe the focus of its incremental productive innovation team; words like *better, easier, faster* when describing new product development; and *commercial* for innovations in marketing, packaging, and promotion. *Transformation-sustaining* terms represent order-of-magnitude shifts that can lead to breakthrough changes. *Disruptive* innovations bring new-to-the-world changes (Srinivasan, 2012).

As stated earlier, the nature of innovation confers an uncertain output. Firms face a number of factors that prevent innovation. Most notable are the financial obstacles that limit the capability of the firm to innovate (Blanchard et al., 2012); however, even when an organization is not financially constrained, other nonfinancial obstacles may limit innovation. Blanchard et al. (2012) suggested that the nonfinancial obstacles encountered are

- inability to devote staff on an ongoing basis due to production requirements;
- high cost of development;
- lack of skilled personnel;
- lack of financing; and
- organizational rigidities in the firm.

There are three organizational systems that are universal in innovative processes:

- (a) continuous training to inspire a mindset, thinking process, and behavior of innovation;
- (b) sustained mentoring through role models who become nurturing project guides and

teach their teams through innovative PM practices; and (c) written manuals to provide detailed guidance and instruction on principles and methodologies for ushering innovative projects through the PM process (Srinivasan, 2012). Leadership can manage the organization in innovation teams that are focused on incremental, evolutionary, or radical new product development in order to manage innovation projects.

Leaders can also cultivate the behavior of team members to align with task-oriented behavior. According to Aronson, Dominick, and Wong (2014), task-oriented behaviors include

- clarifying roles and responsibilities for new product development (NPD) team members;
- reviewing progress during work sessions;
- anticipating problems and developing contingency plans;
- defining NPD task priorities;
- ensuring that everyone understands goals;
- recognizing interrelationships among problems and issues;
- suggesting new approaches to solving problems;
- organizing information in categories;
- helping others draw conclusions from facts; and
- summarizing the team's position on issues.

Innovation can be risky, and there is no guarantee that the outcome will be of value to the organization (Dumay et al., 2013). Organizations are increasingly turning to the practice of assessing the organization's PMM level (Souza, Salomon, Silva, &

Aguiar, 2012). Souza et al. (2012) suggested PMM is an organizational condition that contributes to project success. Souza et al. further contend that PMM is a measure of the competence level of the project leaders or leadership in PM. Yao (2015) suggested that traditional PM poses less of a risk to the organization for oversight of small-scale projects, less-technology-oriented projects, and services. Yao described traditional PM as the process moving from project concept and approval to implementation, acceptance, assessment, and completion. More specifically, the lack of collaboration in the traditional PM process exacerbates the risks to large projects, which creates project isolation and leads to lack of enterprise innovation (Yao, 2015). PMM processes at the higher levels of PMM models instill collaborative innovation and the development of some integrated management systems. Yao posited that the innovative collaboration level maximizes effectiveness, technology development, and the principle source of organizational vitality and momentum.

Leadership in Project Management

Leadership is a phenomenon that requires nurturing and has significant importance in the organization (Laufer, 2012). Organizations use teams extensively to organize and prioritize work projects (Tost, Gino, & Larrick, 2013), and the influence of power on leadership dynamics and team performance can result in reduced team communication and diminished performance (Tost et al., 2013). Aime, Humphrey, DeRue, and Paul (2014) conceptualized the leadership process as a socially complex and adaptive process in the context of dynamic group environments following a pattern of leading–following interactions. Aime et al. demonstrated that organizational structures in

which individualized power can shift among the team members, allowing them to align their capabilities with current situational demands, can enhance team creativity.

This represents a positive effect of the concept of power on leadership dynamics and project performance (Aime et al., 2014).

Uhl-Bien, Riggio, Lowe, and Carsten (2013) described the leader–member exchange theory as a phenomenon highly regarded in an organization, whereby the leaders and the followers engage together to generate high-quality work. Their personal relationships allow them to produce effective leadership outcomes (Uhl-Bien et al., 2013). The relationship is one of leader and trusted assistant, or advisor to the leaders, who work together to achieve task-oriented successes. Aronson, Shenhar, and Patanakul (2013) contended that the leader-building activities affect employee’s emotions, attitudes, and behavioral norms to impact expected project outcomes. This was termed the *project spirit* (Aronson et al., 2013). The project spirit highlights the value of the project intangibles (Aronson et al., 2013). More importantly, Aronson et al. suggested that project spirit can be coached and mentored in project leaders in order to achieve project success.

Other nontechnical leadership practices are linked to successful project outcomes (Kaminsky, 2012). Kaminsky (2012) posited that PM requires two cultural factors to be successful. These two practices are (a) persuading the stakeholders to embrace change, and (b) persuading them to support the direction of the project. Obtaining stakeholder buy-in is a critical success factor for PM (Hwang & Lim, 2013).

Leading and managing in project-management practices are interchangeable functions (Austin, Browne, Haas, Kenyatta, & Zuluetta, 2013). Leaders focus on the long-term strategic nature of the organization, and managers focus on day-to-day activities (Austin et al., 2013). In PM, the two roles merge (Austin et al., 2013). Morris (2014) considered the debate regarding project managers to be one of practitioners versus academics. He contended that PM is a hands-on activity, and that the PM profession lacks the academic rigor that other professions consider normal.

Complexity leadership theory identifies three types of leadership: (a) administrative, (b) enabling, and (c) adaptive (Uhl-Bien et al., 2013). Forms of *administrative* leadership include the traditional notions of leadership found within bureaucratic hierarchical systems of alignment and control. *Enabling* leadership structures allow environmental conditions to enhance creativity, problem solving, adaptability, and learning. *Adaptive* leadership emphasizes conditions associated with fast-changing and emergent change activities. In the organization, each of the three types of leadership appears at various times and locations within the context of the evolving mission sets and that of general housekeeping (Uhl-Bien et al., 2013). Overall, complexity leadership theory supports the organization through strategic alignment of PM and organizational goals.

Project leadership has an important role in developing and achieving the strategic goals of the organization (Redick et al., 2014). Redick et al. (2014) suggested that for companies to remain competitive and profitable in the global environment, they must be able to respond quickly to changing market conditions. Daim et al. (2012) suggested

using a global virtual team (GVT), which is another form of a PM team, to remain responsive. The GVT, a culturally diverse, geographically dispersed, technologically advanced and communicating workgroup, can form quickly, adjust to changing conditions, and then disappear (Daim et al., 2012). Redick et al. determined that the methods and skills needed to succeed in a rapidly changing environment are a direct reflection of project leadership. There are four factors supporting leadership competencies in the global environment: (a) self-leadership, (b) managing others, (c) psychological factors, and (d) environmental factors (Redick et al., 2014). Redick et al. termed this the Four-Factor Model for Effective Project Leadership Competency.

Awan, Ahmed, and Zulgarnain (2015) suggested that to successfully execute a project, the project manager must emphasize soft leadership skills, such as (a) communications; (b) interpersonal skills; (c) coordination; (d) delegation and team building; and (e) problem-finding, problem-analyzing, and problem-solving skills. Project leadership must continuously assess the impact of the team's work on the project successes; this correlates positively with the project manager's coordination and problem-management skills (Awan et al., 2015). Finally, Aarseth, Rolstâdas, and Andersen (2014) suggested that the main organizational challenge in global project teams is external stakeholder management in the global environment, a significant soft skill required by project leadership.

Project Success and Failure

Success and failure in any project is relative to some quality that is described in a requirements statement. The principle focus of success and failure is on the company's

PMO, with emphasis on a successful project (Spalek, 2014). The PMO is responsible for establishing a project plan to meet the customer requirement within the time and scope of the contract (Wysocki, 2014). The project manager within the PMO establishes a project team comprising internal company specialists. Project success, however, relies on corporate leadership support and customer concurrence with the project plan (Toader, Adamov, Marin, & Moisa, 2010). Toader et al. (2010) suggested the foundation of project success is customer involvement and leadership support.

There are many reasons why a project may fail. Perhaps it is easier to achieve project failure than success. A project could fail at any moment simply by losing leadership sponsorship from the corporate executives, or by losing support from the beneficiary or customer (Toader et al., 2010). Zahra, Nazir, Khalid, Raana, and Majeed (2014) suggested that, in addition to the requisite education, training, and experience, accountability for project success or failure is the responsibility of the project manager. The project manager must have both soft and hard skills to lead (Zahra et al., 2014). Common elements of both a failed project and a successful project are people and how people are led (Awan et al., 2015). Awan et al. (2015) considered the project manager's soft skills positively related to project success. The soft skills are critically important to successfully executing the project (Awan et al., 2015).

According to Serrador and Turner (2015), project efficiency—meeting the constraints of time, scope, and budget—is not the most appropriate measure of project success (Serrador & Turner, 2015). Serrador and Turner demonstrated a positive correlation between project efficiency and project success; efficiency, however, while not

to be ignored, was not the only factor of project success (Serrador & Turner, 2015).

Turner and Zolin (2012) determined success to be time-dependent. That is, as time goes by, it matters less that the project meets its resource constraints, because after the project is completed, impact on the customer and customer satisfaction are the only important considerations (Turner & Zolin, 2012).

The success of the project process is a measure of project efficiency (Turner & Zolin, 2012). However, the success of the investment is a measure of the beneficial value of the project upon delivery to the customer (Gareis, Huemann, & Martinuzzi, 2013; Turner & Zolin, 2012). Gareis et al. (2013) stated that the project as a process becomes a part of the overall investment.

Serrador and Turner (2015) adapted the term *project management success* to *project efficiency*, and the meaning to be “meeting cost, time, and scope goals.” They defined *project success* as “meeting the wider business and enterprise goals, as defined by the key stakeholders.” This is also known as *realized beneficial value* (Lappe & Spang, 2014).

The components of project efficiency are neither necessary nor sufficient conditions of project success (Turner & Zolin, 2012; Xue, Turner, Lecoeuvre, & Anbari, 2013). Many projects finish on time and on budget, but fail because the projects do not meet the actual needs of the customers. Further, there are many projects that finish late and over budget that are considered successful (Serrador & Turner, 2015).

Realized Beneficial Value

The investment in the PMM processes of an organization requires planning and review to ensure that the BRM capability is robust enough to capture the desired benefits of the investment (Spalek, 2014). Organizations use *BRM* to manage investments in procurement, projects, programs, and portfolios (Lappe & Spang, 2014). Serra and Kunc (2015) defined BRM as a set of processes structured to reduce the gap between strategic planning and execution by focusing specifically on ensuring implementation of the most valuable project initiatives. The beneficial value from an investment in a PMO refers to the organizational level results versus measures associated with project deliverables. Realized benefits reflect the impact of the deliverables on the organization (Lappe & Spang, 2014). “The benefits are the translations of stakeholders’ needs and/or expectations into measurable outputs; the sum of these outputs constitutes the ‘value’ of the program to the organization” (Thiry, 2007, p.124). It is not the deliverable itself that constitutes the benefit to the organization (Lappe & Spang, 2014).

BRM is an important practice of PM, as it is closely associated with value and value management. The focus on benefits is fundamental to management practice. Serra and Kunc (2015) showed that BRM practices are positive predictors to project success on the creation of strategic beneficial value. Breese (2012) defined a *benefit* as “an outcome of change which is perceived as positive by a stakeholder,” and he further defines BRM as “the process of organizing and managing, so that potential benefits, arising from investment in change, are actually achieved” (p. 342). This is important because it clearly identifies as the realized benefit the impact of what the organization achieves.

Lappe and Spang (2014) validated a positive correlation between the costs and benefits of PM. Their research indicated there is a strong relationship between the costs of maintaining a PMO and the benefits resulting from the application of PM practices and techniques. They further posited that there is strong correlation between investment in the development and the professionalization of PM and project managers. This research supports a recommendation for future investment in the PMO.

PMM assessment can determine project complexity and the optimal PMM level for a particular PMO. Albrecht and Spang (2014a) suggested that the project complexity determines the organization's ideal PMM level. This information may be important in assessing the relationship between PMM and project success.

Successful business leaders realize value from investments in projects through structured alignment of the organizational business strategy to the project deliverables of the organizational goals (Too & Weaver, 2014). The PMO helps leaders realize value in projects by achieving the defined value of their business strategies. Too and Weaver (2014) suggested that business leaders can realize the value of their investment through implementation of four elements: (a) portfolio management, through selection of the right projects and programs to support the business strategy and termination of those that do not successfully support that strategy; (b) project sponsorship, a direct link between executive leadership and the project manager that is specifically focused on project lifecycle; (c) the PMO, providing oversight and strategic reporting capabilities; and (d) project and program support, as a direct reflection of an effective governance system.

Implementing these four elements provides the necessary project oversight to optimize the cost benefit of the project.

PM is the proven method of mastering the complex tasks needed to complete projects on time, on budget, and within the specifications of key stakeholders. It is an effective method of managing other complex tasks, such as change management, talent management, and knowledge management (Kerzner, 2013). Lappe and Spang (2014) demonstrated a clear relationship between an investment in PM, the realized beneficial value from an improvement in PMM processes, and the application of PM practices. However, once a certain PMM level is achieved, the related investment will no longer generate additional benefits and the ROI will become zero (Lappe & Spang, 2014).

Transition

Section 1 has presented an introduction to the study, the problem statement, and the potential knowledge gap in understanding the impact that the PMM of the PMO has on project success. Some of the key elements covered were the Problem Statement, Purpose Statement, Nature of the Study, Central Research Question, Conceptual Framework, Significance of the Study, and Literature Review. The literature review provided an understanding of PM processes and PM competencies that are unique to the PMO.

Investing in the PMO could reduce the costs of forthcoming projects, especially important during turbulent economic downturns (Spalek, 2014). Mustafa (2012) suggested that the reason most organizations experience project failure is due to improper implementation of the PMO within the organization, while Spalek (2014) considered the

most significant tool leading to improvement in the efficiency of the PMO activities to be the assessment of the PMM levels. The findings from this study could influence positive structural changes to an organization, produce positive changes in project performance, and increase the probability of success across the enterprise or within the project portfolio itself. The knowledge gained could help small business owners and project managers in resource-constrained organizations to enhance profitability in their organizations.

Section 2 expands the description of a qualitative research method and design, and clarifies (a) populations and sampling, (b) data collection, (c) data analysis, (d) reliability, and (e) validity. The information in Section 3 shows the doctoral study findings, including applications to professional PM practice, implications for social change, and recommendations for future study.

Section 2: The Project

In this study, I explored PM leadership across multiple organizational models to identify the common experiences of project leaders and how they contributed to a project's success. Through cross-case analysis, I explored the significant relationships that existed between PMM processes in the PMO and benefits realization (Yin, 2014). According to the Standish Group (2013), only 39% of all projects are delivered on time, on budget, and in compliance with the specified requirements. A successful PMO links the project complexities within the organizational environment to the benefits associated with the PMM processes of the organization (Albrecht & Spang, 2014b). Actual experiences of project participants contribute to a better understanding of project complexities. In Section 2, I present (a) the role of the research practitioner; (b) the participants, population and sampling from the cases; (c) the data collection plan, data organization technique, and data analysis; (d) reliability and validity; and (e) ethical considerations. Finally, in this multiple-case study, by using open-ended questions, member checking, and document and archival analysis, I explored the actual experiences of PM leadership to better understand and describe the complexities of project success through PMM processes.

Purpose Statement

The purpose of this qualitative multiple-case study was to explore strategies to improve PMM processes that IT project leaders used. The target population comprised IT project leaders who have strategies to improve PMM processes in the southeast region of the United States. I interviewed 20 leaders. Document and archival analysis helped to

corroborate the meaning of the participant interviews and to instill triangulation into the data collection process. I selected project leaders from within various types of PMOs: (a) a governmental acquisition office, (b) a corporate for-profit PMO, (c) an NPO PMO, and (d) an NFPO PMO. The exchange of project leader experiences from multiple types of PMOs may contribute to social change by improving cost efficiencies and PM effectiveness through sharing of strategic implementations plans gleaned from the experiences that resulted in improved ROI. This effect could improve the economic conditions in local communities supported by benevolent groups by expanding charitable and socially responsible projects.

Role of the Researcher

The responsibilities of my role as the researcher for this study were to (a) produce and review preliminary questionnaires, (b) collect documentary evidence from participants, (c) ask interview questions, (d) observe, (e) collect data, and (f) conduct data analysis. As a social scientist, I conducted this research study from a holistic perspective based on human activities within a business context (Melé, Argonduña, & Sanchez-Runde, 2011). I asked open-ended, semistructured interview questions that allowed for non-standard answers during these interviews and conducted follow-up questioning through member checking (Marshall & Rossman, 2016). I served as the only interviewer to ensure my data collection process did not intrude on, disrupt, or harm participants in any way (Yin, 2014). Qualitative research involves direct contact with the research participants, and potential personal and ethical issues may develop that affect certain aspects of the study (Barusch, Gringeri, & George, 2011). I explained the study to each

participant before the interview and answered all questions regarding the study. Rubin and Rubin (2012) suggested that the researcher try to focus more concisely on the planned items that pertain directly to the research question. During the interview, I did not express any professional opinions or personal thoughts regarding the experiences the participant was describing. I ensured that the data management was confidential and secured with electronic encryption to prevent inadvertent dissemination to unauthorized personnel. My personal and professional experience allowed me to serve as the primary data collection instrument.

This topic was familiar to me because I am a government program manager who manages more than half a billion dollars in contract value. I have a great deal of understanding of the executive decision-making process as it applies to developing and briefing acquisition strategies to solicit requirements validation, funding approval, and methodology for multimillion dollar contracts. My work consists of adherence to government regulations. I have worked with both corporate and U.S. government PMOs. I have also performed volunteer work with the Council of the Knights of Columbus, a not-for-profit Catholic men's group, as the financial secretary, an as-needed project leader, and a member of the executive steering committee. The spectrum of my experience ranges from managing robust funding streams associated with special operations that perform rapid acquisitions, to working with the charitable NFPO that requires special fundraising projects to execute charitable activities.

I asked participants to refer new candidates who fall within the selection criteria and boundaries of the case to obtain introductions to potential additional participants for

the study. I invited interested parties to nominate themselves as participants. Because some of the participants and I share the same profession and operate within the same environment, self-nomination was a viable means of eliciting data from particular PMOs of interest. I was neither supervised by nor in a supervisory role over any of the participants. As the researcher, I did not offer any incentive to participate in the study, and I did not ask leading questions. I provided full disclosure that there was no conflict of interest among the participants and their organizations or myself. Finally, I adhered strictly to the protocols set forth in the Belmont Report and did not begin data collection until the Walden University Institutional Review Board (IRB) approved the proposal (Belmont Report, 1979; Bird, 2010).

Participants

The participants for this qualitative multiple-case study were project leaders who have managed at least two technology-related projects within the last five years. The project leaders were assigned to a project-, program-, or portfolio-management level of responsibility. The participants worked within one of the four business models (government defense acquisition PMO, corporate PMO, NPO PMO, or NFPO PMO) for at least the previous three years. At least one of the participants from each organization had supervisory responsibilities, and the other four were aspiring professional project leaders, as determined by their PMO leadership. C-Suite officers, such as chief information officers and chief technology officers; vice presidents; senior vice presidents; directors; assistant directors; and other stakeholders that meet these requirements were also eligible to participate in the study.

I selected participants through a purposeful snowball sampling technique (Yin, 2014). Dworkin (2012) suggested that an adequate sample size for a qualitative research study was smaller than that for a quantitative research study. According to Dworkin, five to 50 participants in a qualitative research study are an adequate sample size.

To ensure there was sufficient data in this research study, I interviewed 20 participants, five participants from each unit of analysis (Yin, 2014). This also supported the academic rigor that I needed to develop the range of relevant conceptual categories (Dworkin, 2012).

I first gained access to participants through the PMI referral system of associated members, and then through my professional network. After receiving permission from PMI, I called or sent an email to the potential participants to evaluate their initial qualifications. PMI has many communities-of-practice groups, which helped me to target my initial inquiry to select participants. Once I identified potential interview participants, I broadened my network within the business-model cases to obtain contact information and personal introductions. I sent prospective participants an email inviting them to participate in a case study that explored the experiences of project leaders. Once I determined that the potential participants met, or exceeded, the eligibility criteria, they signed an informed consent form indicating their agreement to participate.

The consent form clearly described the data protection plan, protective measures, and data coding I ultimately used to establish and maintain participant anonymity. I stored data on a password-protected computer hard drive during the initial data collection period. I avoided using cloud-computing storage as backup. I backed up the data using a

high-capacity thumb drive, which I then stored in a locked strongbox. Additionally, I stored all hard copy documentation and printed copies of transcripts and questionnaire data in the locked strongbox. I am securing all research data for five years before destroying it.

Establishing a working relationship with participants is essential to successful qualitative research (Swauger, 2011). I was clear with the participants as to my intentions, principles, and position as I established the working relationship. I did not use any persuasive techniques to attempt to control or influence the participants, and I worked to ensure they felt comfortable answering my interview questions. If they decided to withdraw as a participant, I made certain they felt comfortable doing so. I confirmed that the participants understood my intentions through a basic introduction of me and an explanation of the purpose of this research study. I communicated continuously to ensure that the participants were not constrained in any of their responses in this study. It was critical that I did not violate the integrity of the real-world activities by intruding into the world of the case (Yin, 2014). I did not ask the participants to make special arrangements in order to take part in this study. I made all special arrangements and accepted any constraint associated with interviewing the participants.

Research Method and Design

In this study, using the qualitative multiple-case study method, I explored the experiences of seasoned project leaders who function effectively in various PMOs, to help understand strategies used to improve PMM processes of the organization. The evidence developed from a multiple-case study should be compelling, assuming the study

is academically rigorous and robust (Yin, 2014). Cross-case analysis that follows a literal replication approach supports theory development, generalizable results, and data saturation (Bazeley & Jackson, 2013).

Research Method

The intent of this qualitative multiple-case study was to explore in-depth the experiences of project leaders, as well as those of senior leadership, to determine strategic implementation of PMM processes employed among various public and private organizations, including NFPOs and NPOs within the U.S. defense industry. A qualitative research approach was appropriate because it (a) took place in natural settings, (b) drew on multiple methods that respect the humanity of the participants, (c) focused on context, (d) was emerging and evolving, and (e) was fundamentally interpretive (Marshall & Rossman, 2016).

The organizational structure of the PMO and my perception of the description of their level in the PMM model provided the bounds of the qualitative cases as a unit of measure. I selected the four PMOs (cases) using a PMM model that links project success with realized beneficial value and an investment to enhance or maintain the PMM level. This was a literal-replication multiple-case study because I attempted to predict similar results in other cases (Yin, 2014). I used cross-case synthesis to draw general conclusions from four cases as they applied to government, corporate, NPO, and NFPO PMOs. The case study research approach was appropriate because it applies to exploring areas where there is a limited amount of current knowledge (Yin, 2014).

A quantitative approach would not have been appropriate because it requires a numerical model, which would not support the exploration of the participating project managers' perceptions and experiences (Vankatesh et al., 2013). Although the quantitative methodology could have provided elaborate data for a numerical model of PM success and failures, it would not have provided a value-added contribution to the exploration of experiential observations. A mixed-method methodology would not have been appropriate because of the time constraints necessary to conduct multiple iterations of both quantitative and qualitative approaches (Vankatesh et al., 2013).

Research Design

The multiple-case study was the appropriate research design needed to answer the research question (Yin, 2014). A case study is an empirical investigation of a contemporary phenomenon within a real-world setting (Yin, 2014). Case study research is best used (a) for exploring how-and-why questions, (b) when the researcher explores events that have contextual factors, and (c) when the focus is on contemporary phenomena that occur in a natural setting (Yin, 2014). I used a multiple-case study design to explore PMO organizations in public, private, NPO, and NFPO business situations to identify the best-practice themes regarding PMM processes that lead to project success and realized beneficial value. Studying multiple cases operating in similar circumstances strengthens the reliability and validity of the findings, which enhances a deeper understanding of the context of the cases (Yin, 2014).

I applied the replication approach to multiple-case studies to this research design. Each case's conclusions replicated the other cases. I continued the procedure by

combining case selection and design and then employing the data collection protocol, which included (a) member checking, (b) conducting multiple case studies, and finally (c) writing the individual case reports. I conducted document and archival analysis of organization documents from (a) the archive files, (b) reports, (c) documented policies and procedures, and (d) training plans, all of which provided corroborative support to the participant interviews (Marshall & Rossman, 2016). Yin (2014) suggested that cross-case analysis could indicate the extent of replication logic used to predict results of certain cases.

The qualitative case study research method answered the *why* and *how* questions (Yin, 2014). In contrast, quantitative research examines hypotheses using measurements to (a) test theories, (b) establish relationships, and (c) yield statistical significance between variables (Vankatesh et al., 2013). Barusch et al. (2011) posited that the qualitative research design adds (a) academic rigor, (b) ethics, (c) subjectivity, and (d) reflexivity to convince readers, faculty, and peers of the credibility of the research. Marshall and Rossman (2016) observed that a thoroughly documented case study comprises several diverse concepts:

- The direct relationship between the implementation of the study and the research findings strengthens integrity.
- Attention to detail during data collection and disciplined research protocol establish academic rigor.
- The case study presentation is a useful delivery format.

- Delineation between the context and the boundaries of the case demonstrates validity.
- The researcher demonstrates a strong sense of ethical responsibility.

The design of this study was consistent with the case study research methodology defined by Yin (2014). Some regard the case study methodology as lacking scientific rigor. However, terms such as (a) objectivity, (b) reliability, (c) replication, (d) validity, (e) measurability, and (f) standardization are common with this methodology (Barusch et al., 2011). Yin also argued that evidence from case study research is more credible and convincing, stating that the intent of case study research is to achieve analytic generalization or literal replication versus the statistical relevance normally associated with quantitative research.

A multiple-case study was more appropriate than a single-case study research design because it provided a more in-depth and robust exploration of the research question. Each organization studied has adopted some type of PMM process within the PMO that supports the application of PM. Each organization was the subject of an individual case study (Yin, 2014). The study as a whole explored four PMOs, which established a multiple-case study. Following the replication logic of the literal replication of cases, the findings from a multiple-case study presented results that are analytical generalizations consisting of theoretical statements or theoretical propositions at a higher conceptual level than those of a single-case study (Elechi, Piper, Morris, & Sherill, 2014; Yin, 2014). Yin (2014) offered that the analytical conclusions of a multiple-case study

are more powerful than those of a single case, and that they generate an increase in analytical benefits.

I achieved data saturation through member checking early in the cases, and it was not necessary to interview additional participants. If needed, additional participants would have had to meet the same selection criteria as the original participants. Dworkin (2012) suggested that the sample size for qualitative research methods is smaller because the goal is to garner a more in-depth understanding of the situation, focused more on meaning than on quantitative methods. The in-depth interviews of a single case study seek to establish generalizations and are inductive and emergent in their process. The application of a multiple-case design allows for the analytic generalization obtained from cross-case synthesis (Yin, 2014). Data saturation occurs in the data collection process when no new relevant data emerges (Dworkin, 2012).

I deliberately did not use an ethnographic design because it provides a written representation of the culture, which I was not investigating. Ethnography represents the deep and diverse roots of social life in the PMO (Skipton, Hughes, & Tutt, 2014). Similarly, a phenomenological design seeks to understand the lived experiences of several participants involved in a particular phenomenon (Marshall & Rossman, 2016). Both ethnography and phenomenology are constrained by time in regard to making the participants feel comfortable enough to share their lived experiences.

Using a multiple-case study design to explore the experiences of project leaders in various situations in the PMO could benefit project managers across the profession. It could contribute to the professional development of project leaders that do not have the

resources to create best-practice environments on their own. This may be particularly useful for young entrepreneurs who are just starting a business or leading a project and who could benefit from following established processes for a given situation.

Case definitions. The parameters and boundaries of each case study represented different organizational environments and structures associated with the organization's PMO. The case explored the parameters and boundaries of a PMO as the project leaders within the organization defined them. The unit of analysis was the PMO's situation within the organizational business model. The deeper, more robust exploration of the PMO data emerged from the project leaders within the organizations, individuals organized to perform PM functions who have adopted PMM processes and principles. The multiple-case study comprised four cases, PMOs from the federal government, corporate defense industry, NPO, and NFPO.

Case 1: Program Management Office (PMO) in the federal government. The first case represented a PMO within the federal government. Every program in the defense acquisition system has a PMO, even if there is only one program manager (U.S. Department of Defense, 2015). These PMOs are generally established through the defense acquisition guidelines, and are directed and funded efforts that provide new, improved, or continuing materiel, weaponry, or information systems or service capabilities in response to an approved need. A program or PMO may have multiple projects over which it has oversight, and a project may have several product releases. Cost efficiency and effective realization of the beneficial value are the driving force for the defense acquisition PMO (Pickars & Jones, 2015). I interviewed five project leaders.

Case 2: PMO in corporate defense contracting. This case represented a privately or publicly owned corporation that depends on project successes to realize an ROI in order to stay in business. The PMO is an organizational structure that standardizes the project-related operating procedures and facilitates the sharing of resources, methodologies, tools, and techniques (PMI, 2013a). Profitability is the driving force behind this type of PMO (Spalek, 2014). I interviewed five project leaders.

Case 3: PMO in the nonprofit organization (NPO). This case represented the NPO, characterized as having the perception of trustworthiness (Van Puyvelde, Caers, Du Bois, & Jegers, 2015). The objective function of the NPO is the maximization of quantity and quality of service. This same function resembled the government organization because neither the NPO nor the government agency is intrinsically motivated to make a profit. The NPO project leaders are less likely to behave opportunistically and more likely to guarantee higher quality (Van Puyvelde et al., 2015). I interviewed five PM leaders.

Case 4: PMO in the not-for-profit organization (NFPO). This case represented the NFPO, characterized as a small, fiscally constrained organization. It did not have any resident PM expertise per se. Kummer, Singh, and Best (2015) noted that the NFPOs rely on trust and volunteer support. I interviewed five project leaders performing the work.

I analyzed and compared the four cases in a cross-case analysis (Yin, 2014). The conceptual framework used to develop the interview questions explored the gaps, patterns, and themes in the areas of (a) project success and failure, (b) PMM processes, and (c) realization of beneficial value or ROI. The method of selecting cases was similar

to performing multiple experiments, which Yin (2014) identified as replication logic typically used in multiple-case studies. As part of a multiple-case study investigating how leadership styles affect team learning, Bucic, Robinson, and Ramburuth (2010) applied replication logic to select three management teams from different disciplines to reveal variances. Yin also identified multiple cases with overlapping context, which allowed for comparisons and contrasts to add credibility and increased reliability in the overall study.

Population and Sampling

In this qualitative multiple-case study, I used open-ended but semistructured interviews to collect data about four cases. The population of this multiple-case study comprised project leaders working in PMOs, and the unit of analysis was the PMO. Selection of the participant population was through purposeful snowball sampling (Yin, 2014). *Purposeful sampling* is a nonprobability sampling technique that has been useful in understanding participants' experiences (Walker, 2012). The technique allows the researcher to determine which participants in a group of people are best suited for the particular investigation.

Data saturation is a tool used in qualitative research to ensure quality data collection (Hyett, Kenny, & Dickson-Swift, 2014; Walker, 2012). Saturation determines the purposeful sample size, and occurs when data collection produces no new themes and there is enough data to replicate the case (Dworkin, 2012; Yin, 2014). Dworkin (2012) suggested that the number of participants in a study could range from five to 50. In this multiple-case study, I interviewed 20 participant project leaders who worked in one of four PMOs (Yin, 2014), five project leaders from each case. Each case resided within

target organizations supporting the U.S. defense industry: PMOs in (a) defense acquisitions, (b) private or publicly traded corporations, (c) NPOs, and (d) NFPOs. I achieved data saturation through semistructured interviews, member checking, and replication logic of the multiple-case study (Yin, 2014).

Participant selection criteria identified PM practitioners who had performed PM functions for at least 5 years. Project leaders assigned to a project-, program- or portfolio-management level of responsibility met the research criteria. The participants had worked in one of the four business models (cases) for at least three years, and are current members of their organizations.

I established an interview setting that was comfortable and nonthreatening. To create this environment, I invited the participant to meet in a location that was not disruptive, and where the participant felt most comfortable. The interview setting was most important in order to facilitate the participants' open and honest revelations about their personal experiences of their work environment. I interviewed the participants at their convenience, and offered face-to-face or teleconference interview environments as much as possible (Javalgi, Granot, & Alejandro, 2011). A suitable location could have been a conference meeting room at a public library, a business room in a hotel, or any other location where the participant and I agreed to meet. I scheduled 1-hour interview sessions, and if more time was needed I honored the participants' time by requesting second sessions at their convenience.

To achieve maximum benefit for reliability and validity, I used member-checking methodology following the initial interview (Marshall & Rossman, 2016). In this method,

I provided the participant with a summary of the interview to validate my interpretation of the interview. I asked the participant for corrections, their reactions, and further insight at that second interview. Marshall and Rossman (2016) suggested that member checking is a useful way to share one's interpretation with the participant to ensure validation.

Ethical Research

The first ethical obligation I had to the participants of this study was to do no harm, and to keep all promises made (Rubin & Rubin, 2012). Doing no harm means that I would not exploit them; I would not publish materials that would cause them to (a) get arrested, (b) lose their jobs, (c) face fines or penalties, or (d) lose a promotion or any part of an income. I did not reveal any information that may cause embarrassment to them (Rubin & Rubin, 2012).

For the ethical protection of the research participants, I first gained permission from the IRB before I began to collect data from the interviewees. Once I received IRB approval and obtained the Walden IRB number, I presented an informed consent form to the individuals that agreed to participate; this included a confidentiality statement that emphasizes the assurance of confidentiality and details the intent of the study. I asked the participants to sign the informed consent form indicating their willingness to participate voluntarily in the study (Fein & Kulik, 2011).

I informed the participants of their right to withdraw from the study for any reason and at any time, without prejudice or penalty. The participants needed only to state that they no longer wished to participate in the study to end the data collection process immediately. I would have immediately suspended data collection with the participant,

and retained their confidential information in the same manner as that of other participants in the study. If a participant had withdrawn from the project altogether, I would have disengaged with the candidate and removed all the collected materials and data from the project. The participants could have conveyed their desire to leave the study at any time before, during, or after the interview, using any of several means of communication (e.g., voice, telephone, email, text message, handwritten note) for this purpose. I did not provide any incentives or disincentives; consequently, I avoided the appearance of any coercive influence towards or against a particular view or response. After 5 years, I will destroy confidential evidence and materials associated with the research study, and I will shred all consent forms, interview transcripts, and recordings.

Data Collection Instruments

As the researcher, I functioned as the primary data collection instrument (Marshall & Rossman, 2016; Yin, 2014). I conducted open-ended but semistructured interviews from the interview protocol and introduced follow-up questions through member checking to ensure robust and in-depth data collection. The interview protocol comprised 11 semistructured questions followed by unstructured probing questions, to elicit information from the project leaders and PM practitioners in order to answer the overarching research question or to develop emerging categories and themes. The questions in the interview protocol instrument covered the areas of (a) project success and failure, (b) PMM processes, and (c) realization of beneficial value or ROI.

The first case functioned as the initial pilot case study and provided initial feedback to refine the clarity of each of the interview questions. Using the pilot case and

peer debriefing, I was able to refine the research instrument, manage the interview schedule, and find ways to eliminate barriers such as mistrust of my (the researcher's) agenda (Marshall & Rossman, 2016). Performing member checking before beginning the next case enhanced reliability and validity (Yin, 2014). The data collection interview protocol for participant interviews is in Appendix A.

I used a codebook of research variables to provide the conceptual foundation needed to conduct data analysis, and to organize and reorganize the codes into major categories and subcategories (Saldana, 2013). Saldana (2013) noted that having a codebook helps to manage the large numbers of codes that can accumulate and change as the analysis progresses. The codebook serves as a record of emerging codes and (a) provides a compilation of codes, (b) maintains the current description of codes, and (c) offers a brief data example for reference.

Marshall and Rossman (2016) suggested there are two kinds of codes: theory-generated codes and in-vivo codes. *Theory-generated codes* derive from the literature review, and constitute a list of themes, patterns, and categories as they pertain to three areas from the interview protocol: (a) project success and failure, (b) PMM processes, and (c) realization of beneficial value or ROI. I used theory-generated code during and after the interview to help interpret the data collected in eliciting participants' real-life experiences (Marshall & Rossman, 2016). The *in-vivo codes* emerged directly from the actual data as it was collected (Saldana, 2013).

Data Collection Technique

The primary tools of data collection are (a) in-depth semistructured interviewing, (b) archival document analysis, and (c) email correspondence to ensure triangulation. Rubin and Rubin (2012) described three important characteristics of the qualitative interview:

- The researcher is looking for rich and detailed information in the form of narratives and stories, examples, and personal experiences;
- the interviewer does not give specific answer categories, but rather offers open-ended questions where the interviewee can respond any way he or she chooses; and
- the questions asked are not fixed or scripted, allowing the interviewer to change, skip, reword, or create new questions.

I used an open-ended, semistructured interview technique. I had a specific topic in mind for the interview, and I prepared some scripted questions in advance of the interviews (see the interview protocol in Appendix A). I remained focused on planned items or codes that are specific to the research question; however, I was also prepared to ask probing follow-up questions to encourage the interviewee to answer at length and in detail (Rubin & Rubin, 2012).

I followed the responsive interviewing style, which, according to Rubin and Rubin (2012), emphasized the importance of building relationships of trust with the interviewee. This interview style led to greater give-and-take in the conversation, allowing the questions to evolve in response to what the interviewee just said. I had the

flexibility to ask new questions to elicit the experiences and knowledge of each interviewee. In meeting with important key individuals in policy research, Owen (2014) used responsive interviewing techniques in order to seek out how the interviewee understood what he or she had seen, heard, or experienced.

I used the following interview guidelines to collect interview data from the participants:

1. Upon receiving IRB approval from Walden University, I began to make initial contact with potential study participants for my pilot case study.
2. Prior to interviewing a study participant, I made an entry in the field journal regarding (a) participant data, (b) date and time, (c) location, (d) how I arranged the interview or who made the referral, and (e) the environmental conditions of the setting (Marshall & Rossman, 2016).
3. In the first step of the interview, I made introductions and established rapport with the study participant.
4. Next, we discussed the participant's consent form and signature and participant safety and security, and I ensured that the participant understood the purpose of the interview.
5. Before each respective interview, I asked the study participant for approval to record the interview session.
6. Using the Olympus DS-40™ digital voice recorder and an iPhone™ as backup, I recorded audio files (WMA format) for use on a Mac computer.

7. After my introduction, the interview proceeded according to the interview protocol, which comprised open-ended questions, follow-up questions, and probes. I asked demographic questions first, and then followed up with the main questions.
8. If at any time the study participant elected to discontinue the interview, I sought to make the participant comfortable with his or her decision by immediately ending the interview without prejudice, and disposed of the collected materials.
9. Throughout the interview, the audio recording captured the interview session. I simultaneously entered notes in the field journal to capture as much detail as possible.
10. Immediately following the interview, I made entries into the field journal to record my reflections on the details of the interview, paying close attention to anything that may have interfered with quality of the data or other factors that might impact later interpretation (Marshall & Rossman, 2016).
11. Immediately after the interview session, I uploaded the audio files to an online transcription service called rev.com™ (www.rev.com) from the MacBook Pro or directly from the iPhone App Rev Voice Recorder™. It was particularly important to identify the interviewer's questions and comments, in order to focus all data analysis capacity on the data that each study participant provided (Saldana, 2013). I performed playback of audio files on QuickTime™ software using a MacBook Pro computer.

12. I prepared transcript summaries for member check procedures, and coordinated with the participant to conduct member-checking discussions.
13. I loaded all the transcription documents, audio files, and documentation collected on-site into the NVivo 11 database for data storage and analysis.

The benefits of conducting an interview outweighed the potential limitations of a trusting relationship established from the beginning of an encounter. The primary benefit of conducting data collection interviews was that the interview quickly yielded high-quality data in large quantities (Marshall & Rossman, 2016). Combined with external environmental factors surrounding the interview location that I entered into the field journal, including those I perceived from hearing, smelling, and touching, the interviews produced a rich and in-depth understanding of everyday activities that the study participants experienced. Further, the benefits attributed to the interview as a data collection technique were apparent both immediately and in follow-up questioning for clarification and probes to expand the breadth and depth of the study participants' responses (Marshall & Rossman, 2016).

The inherent limitations associated with any interview could have been catastrophic for the study. That is, according to Marshall and Rossman (2016), interviews are intimate encounters that are a function of trust and building. A participant in this study may not have been aware of recurring patterns or nuances that I hoped to explore. I may not have asked questions that inspire sufficiently long narratives and storytelling; the interviewees may not have had the words to adequately describe their experiences surrounding their environment. This could have led me to extend the study in order to

achieve data saturation (Dworkin, 2012). Another potential disadvantage of interviewing as a data collection technique is that it generates a high quantity of data, which can be time-consuming to analyze (Marshall & Rossman, 2016). Conducting a pilot case study, and making necessary adjustments to remaining studies, was one technique that I used to mitigate some of the risks associated with data collection interviews.

A pilot study was useful for assessing interview strategies and interview questions. I conducted a pilot study using the first case study of the multiple-case study design, the defense acquisition PMO. Once IRB approved the research proposal, I initiated the case study, which comprised interviews with five PM practitioners within the PMO. The pilot helped to refine the research instrument and interview protocol (Marshall & Rossman, 2016). Yin (2014) noted that a pilot study report must be explicit about lessons learned from the research design and the field procedures. There were few modifications required following the pilot study; this mitigated a need for another case in the multiple-case study.

I used several strategies to challenge the key patterns and themes, as well as to seek alternative explanations for obvious data linkages and evaluate the plausibility of developing an understanding of the topics discussed by the interviewee (Marshall & Rossman, 2016). Some of these strategies are (a) triangulation, (b) member checking, and (c) peer debriefing. *Triangulation* was created in (a) the qualitative multiple-case study research design, (b) collected archived documents from participants, and (c) email correspondence with participants (Marshall & Rossman, 2016; Owen, 2014). I addressed *member checking* by providing the study participants with a summary of my interview

review and interpretation and asking for their reactions, corrections, and additional insights (Marshall & Rossman, 2016). After each case study was completed, I sought *peer debriefing* of the case summary from knowledgeable and available colleagues, for their reactions. During the pilot case study itself, I sought out peer debriefings of each interview summary to identify lessons learned from the interview process (Marshall & Rossman, 2016). I employed these strategies in order to manage large volumes of data in a transparent manner and to enhance credibility.

Data Organization Technique

I first addressed the need for data organization by creating a case study database to organize and document the data collected for each case (Yin, 2014). I used NVivo 11 software, a field journal, and a simple labeling system to manage the volumes of data for analysis. The case study database resided in NVivo 11, which is a computer-assisted qualitative data analysis software (CAQDAS) program that works with a variety of data, such as (a) documents, (b) images, (c) audio, (d) questionnaires, and (e) social media content (Edhlund & McDougall, 2012). Bazeley and Jackson (2013) recommended starting with NVivo 11 early in the project to lay the foundation for working with data.

In order to achieve data triangulation in the study, I relied on the CAQDAS program to process (a) audio files, (b) transcription of the interviews, (c) archival PDF and Word documents from the participants, and (d) email correspondence from the participants. The CAQDAS program brought order and structure to the data. The NVivo 11 program was particularly useful with analyzing interviews within the case study research design.

I ensured and maintained confidentiality and anonymity for all study participants by utilizing a labeling schema (Gibson, Benson, & Brand, 2013). An alphanumeric label system masks each study participant's identity. The label system followed a pattern of CASE#_P#_PARTICIPANT INITIALS_DATE OF INTERVIEW. For example, if Walter Sargent were Participant #1 of Case #1, the schema would follow: CASE1_P1_WS_04192015. I entered each label into the field journal at the time the study participant signed the consent form and entered into the study program. I marked the audio recording with the equivalent labeling system. I transcribed the audio transcript verbatim into Microsoft Word for Mac 2011, and loaded both the Word transcript and the audio recordings into the NVivo 11 database for each study participant. Additionally, I maintained the hard copy transcripts and documents associated with each study participant in a desk-side file cabinet (Jacob & Furgerson, 2012; Yin, 2014). To ensure the confidentiality of the study participants, Fein and Kulik (2011) recommended storing data using password-protected flash drives.

Data Analysis

The primary data analysis process for this qualitative multiple-case study design was cross-case synthesis as it applies to analysis of multiple cases (Yin, 2014). In order to visualize how I saw the case, I created case maps to show central themes of each case (Bazeley & Jackson, 2013). I treated each individual case study as a separate study, and then aggregated the findings across a series of separate studies. This is the process of cross-case analysis; studying multiple cases increases the possibility of generalization by observing processes and outcomes across many cases (Bazeley & Jackson, 2013).

Treating each case separately maintains the comparative focus in cross-case analysis, which preserves the uniqueness of each of the cases (Yin, 2014).

For the cross-case analysis, I was able to generate a table with cases in rows and thematic nodes in columns by using framework matrices in NVivo 11 (Bazeley & Jackson, 2013). When I sorted the data by case, common patterns and gaps emerged. *Deviant* cases occurred when they presented an apparent contradiction in the data. Cross-case synthesis illuminates cases that replicate or contrast with one another (Yin, 2014).

The analysis of the interview data began with the transcription of the interview's audio recording into text format, and organization of the raw data. The raw data took the form of (a) interview transcripts, (b) archival PDF and Word documents, (c) field notes, (d) email correspondence, and (e) journal entries (Saldana, 2013). I began coding with preliminary jottings as I collected and formatted the data. Preliminary jottings are words and short phrases identified during transcription, or in field notes or documents themselves, and for future reference. Preliminary codes evolved from the preliminary jottings, and then the final code emerged (Saldana, 2013).

A code is an abstract representation of an object, experience, or phenomenon (Bazeley & Jackson, 2013). The code served as the means to identify themes in text. As I read and reviewed the data initially and as I formally coded them, I was able to identify themes, patterns, trends or concepts. I made notes of these in an analytic memo in NVivo 11 (Saldana, 2013). NVivo 11 stores codes in nodes (Bazeley & Jackson, 2013), points where concepts can potentially branch out into networks of subconcepts.

The purpose of the data analysis was to identify the themes that addressed the central research question. The data analysis provided the framework to elicit information from the experiences of PM practitioners, and to help IT project leaders identify lessons learned in order to realize the beneficial value from the investment in PMM processes (Spalek, 2014; Yin, 2014).

Reliability and Validity

Rigor, as described by Thomas and Magilvy (2011), is the qualitative research equivalent to reliability/validity in quantitative research. Rigor in qualitative research establishes trustworthiness and confidence in the findings or results of the research study. Rigor maintains procedural consistency of the study method over time, ensures that the study provides an accurate representation of the study participants, and offers sufficient detail to replicate the study with different cases (Thomas & Magilvy, 2011). Dependability, credibility, transferability, and confirmability, found in qualitative rigor, are qualities needed to achieve reliability and validity in qualitative research (Marais, 2012; Marshall & Rossman, 2016).

Reliability

Reliability used in case studies derives from the consistency and repeatability of the research procedures (Yin, 2014). Reliability indicates the ability of future researchers to replicate the research procedures and obtain similar results given similar conditions (Grossoehme, 2014). Methods used to demonstrate rigor and reliability include documenting the research procedures in a reflective journal and providing detailed descriptions of (a) the data collection instrument, (b) data organization techniques such as

coding, and (c) data analysis (Klassen, Creswell, Clark, Smith, & Meissner, 2012). I documented the sequential and logical processes of my research procedures in the field journal prior to, during, and after each interview; during member checking; and throughout the data analysis and interpretation procedures (Ali & Yusof, 2011). Reliability reinforces qualitative research through data collection and data analysis techniques that start with the data coding (Mangioni & McKerchar, 2013). Mangioni and McKerchar (2013) posited that case study research ensured reliability and validity through the introduction of the qualitative coding process.

Marshall and Rossman (2016) considered methodological triangulation as a key element of reliability. In this study, I collected data through (a) semistructured interviews, (b) member checking, (c) archival documents, and (d) email correspondence. Ali and Yusof (2011) suggested that to ensure reliability I would need to (a) maintain transparent procedures and structures, (b) detail the participant selection process, (c) document my role as the researcher, and (d) be transparent about my relationship with the participants.

Validity

In qualitative research, *credibility* is the equivalent of validity in quantitative research (Charleston, 2012). Validity refers directly to the accuracy of the research findings (Venkatesh et al., 2013). Marais (2012) suggested that (a) credibility, (b) transferability, (c) dependability, and (d) confirmability are the key principles for validity in qualitative research. Charleston (2012) posited that credibility is the modern term for validity, used to describe a set of procedures that ensure trustworthiness. Trustworthiness in qualitative inquiry supports the argument that the research method is rigorous and

reliable, which adds validity to the findings (Elo et al., 2014). Transferability allows for possible extrapolation of the findings to other contexts (Elo et al., 2014) and ensures that the findings will be applicable to other cases and contexts (Marais, 2012). The stability of the data over time and in various conditions refers to dependability of the research findings (Elo et al., 2014). Marais suggested that dependability referred to meaning and procedures that achieved the same findings upon replication. I thoroughly documented the data collection and data organization procedures, which supported dependability and transferability. Marais suggested that confirmability is a reflection of the findings and not a function of the biases of the researcher. In my research design, I (a) included member checks to share data interpretation with study participants, (b) employed triangulation in a multiple-case study design to collect data from multiple sources and multiple methods, and (c) used peer debriefings to discuss emergent findings with professional colleagues to ensure that the analyses were founded on quality data and collection procedures (Marshall & Rossman, 2016).

Data saturation occurs when no new relevant data appears in the collection process, no new themes have emerged, and there is enough data to replicate the case (Dworkin, 2012). If I achieved data saturation early in a case through member checking, it would not be necessary to interview additional participants; if needed, however, additional participants would have had to meet the same selection criteria as the original participants. Data saturation indicated that I had achieved a purposeful sample size (Dworkin, 2012; Yin, 2014). Semistructured interviews, member checking, purposeful

sampling, and cross-case analysis confirmed data saturation (Bazeley & Jackson, 2013).

In this research design, I achieved reliability and validity at the point of data saturation.

Transition and Summary

In Section 2, I addressed (a) the role of the researcher, (b) participant selection, (c) research method and design, (d) population and sampling, (e) ethical research, (f) data collection instrumentation, (g) data collection techniques, (h) data organization techniques, (i) data analysis, and (j) reliability and validity. The subsections of Section 2 led naturally from one to the next as the project progressed. Beginning with the Purpose Statement and alignment with the central research question, the remainder of Section 2 developed to answer the research question. The manuscript details described the research method and design for this study. This section includes linkages of the conceptual framework and the justification for using a qualitative, multiple-case study and cross-case analysis in support of the research objective. The research objective was to explore the PM practitioners' experiences in order to identify lessons learned from an investment in the PMM processes. The section closed with a discussion of the qualitative academic rigor needed to demonstrate the reliability and validity of strategies in this multiple-case study.

In the next section, I include the (a) presentation of the findings, (b) application to professional practices, (c) implications for social change, (d) recommendations for action, and (e) recommendations for future study. I close Section 3 with my reflections on the study and my conclusions.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple-case study was to explore strategies to improve PMM processes used by IT project leaders. I interviewed five participants for each case and aggregated the data by case to conduct cross-case analysis. Data saturation occurs when no new information emerges, and I used member checking to explore more in-depth experiential data (Dworkin, 2012). Using matrix-coding queries, I analyzed the data through thematic analysis and the NVivo 11 CAQDAS used as the research database; NVivo 11 aided in my coding, thematic analysis, and cross-case analysis (Bazeley & Jackson, 2013; Cruzes, Dybå, Runeson & Höst, 2014; Yin, 2014). As a result, I was able to identify and label 1,038 segments of text as codes in 42 thematic nodes. Further thematic data analysis reduced the data nodes to ten themes and subthemes.

The main findings (see Table 2) show experiences shared in semistructured interview responses, organizational documents, email correspondence, and field journal notes. I identified four major themes that have had strategic impact on improving PMM processes: (a) profitability factors, (b) project success factors, (c) challenges to PMM process improvement, and (d) strategies to improve PMM processes. The strength of the findings is in the number of respondent references within a theme, also depicted as a percentage of the total instances of the theme (Cruzes et al., 2014).

Table 2

Aggregate Occurrence of Major Themes

Major theme	Number of instances	Percentage of occurrences
Strategies to improve PMM processes	823	79.3
Challenges to improve PMM processes	107	10.3
Project success factors	61	5.9
Profitability factors	42	4.5

Note. PMM = project management maturity.

Presentation of the Findings

The specific business problem was that some IT project leaders lack strategies to improve PMM processes in their organizations. The purpose of this qualitative multiple-case study was to explore those strategies that have proven to be essential to project leaders seeking to improve PMM processes. The overarching research question guiding this study focused on the efforts driving successful project achievement: What strategies do IT project leaders use to improve PMM processes?

PMM is a measure of the development and evolution of the organization's methods, tools, and techniques as related to PM (Spalek, 2014). Spalek (2014) noted that improving the PMM levels corresponded to improvements in areas such as (a) on-time delivery, (b) cost controls, (c) organizational efficiencies, and (d) profitability. The conceptual framework for this research is in the PMM model, which categorizes the processes and progressive improvement of the PMM Levels 1 through 5: (a) initial or common language; (b) repeatable common processes; (c) singular, defined methodology;

(d) managed process through benchmarking; and (e) optimized processes through CPI.

The PMM model provided a tool to assess the capabilities, structure, processes, and competencies against industry professional standards (Stevens, 2013). The strength of the findings is in the number of respondent references within the theme, depicted as a percentage of the total instances of occurrences.

Major Themes

The presentation of the themes and the evidence from the findings are supportive of the body of knowledge identified from the literature and the conceptual framework. The four major themes and six strategy themes (subthemes) emerged from the primary data through thematic synthesis. *Thematic synthesis* is an analytic method used to identify, analyze, and report patterns and themes found in the primary data (Cruzes et al., 2014). As the researcher, I was the primary data collection instrument in this situation (Marshall & Rossman, 2016; Yin, 2014). The evidence derives from the number of instances and comprises the identification of the most important issues or themes emerging from the primary data (Cruzes et al., 2014). Specific strategies emerged as important in the face-to-face interviews, email correspondence, field journal notes, and organizational documents review. The thematic synthesis depicts major themes in the aggregated data from the research participants concerning the compilation of strategies to improve PMM processes. The thematic synthesis presents aggregate findings and represents a baseline to organize and describe the data set in rich detail and various aspects of the research topic (Cruzes et al., 2014). The major themes, in ascending order,

are (a) profitability factors, (b) project success factors, (c) challenges to PMM process improvement, and (d) strategies to improve PMM processes.

Profitability factor. The profitability factor emerged as a theme specifically from responses to Question 2, which explored the nature of profitability within a particular business model (see Table 3). The responses indicated that PMM processes were more likely to focus on delivering the beneficial value required by the end user over realizing an ROI. The responses to Question 2 clearly identified realized beneficial value as the dominant profitability factor among most business models. Spalek (2014) suggested that companies that increase the number of projects executing simultaneously were more likely to retain the competitive advantage by realizing a greater ROI, especially in a tight market economy. The evidence presented by thematic synthesis demonstrated that ROI is not as important as realized beneficial value. Realized benefits reflect the impact of the deliverables on the organization; it is not the deliverable itself that constitutes the benefit to the organization (Lappe & Spang, 2014).

Table 3

Profitability Factors

Themes	Number of instances	Percentage of respondent agreement
Realized beneficial value	32	75
ROI	15	25

Note. ROI = return on investment.

Project success factors. The major theme of the project success factor data reduction comprises seven subfactors attributed to achieving project successes in various business models: (a) customer satisfaction; (b) meeting of cost, time, and scope; (c) a strong requirement; (d) interactive communication with customers; (e) employee satisfaction; (f) planning; and (g) profitability. The project success factors (Table 4) emerged from responses to Questions 6–9 specifically, which targeted project leaders' experiences in achieving project success. The responses to Questions 6–9 indicated that the most important factors needed to achieve project success are (a) customer satisfaction; (b) meeting of cost, time, and scope; (c) having a strong, well-written requirement; and (d) engaging in interactive communication with the customer. In general, the business model cases did not recognize employee satisfaction, planning, or profitability as being important. Toader et al. (2010) suggested that the reasons for project success are customer involvement and leadership support. The evidence from the primary data suggests that project success is a function of customer involvement. Serrador and Turner (2015) adapted the term *project management success* to *project efficiency*, meaning *meeting cost, time, and scope goals*. They defined *project success* as *meeting wider business and enterprise goals*, as determined by key stakeholders. Lappe and Spang (2014) suggested that realized beneficial value is also a form of PM success, and equated it to a profitability factor. Backlund et al. (2014) indicated that knowledge of applied PMM in organizations is limited and suggested that the contribution of PMM to organizational development is unclear. The results of this study indicate that

improvement of PMM processes in organizational development increases the likelihood of project success.

Challenges to improving PMM processes. The major theme of the challenges to improve PMM processes data reduction contains seven subfactors associated with failing to achieve project successes in various business models. The subfactors are (a) lack of customer engagement and communication; (b) lack of project planning, control, and risk reduction; (c) a weak requirement; (d) lack of knowledge management; (e) not enough project manager training; (f) lack of project funding; and (g) lack of innovation. The factors associated with challenges to PMM improvement (see Table 5) emerged specifically from responses to Questions 11 and 12, exploring project leaders' experiences with challenges to achieving project success. The responses to Questions 11 and 12 indicated that the most important factors that challenge PMM processes improvement are the absence of (a) customer engagement and communication; (b) project planning, control and risk reduction; (c) a strong requirement; (d) knowledge management in the PMO; (e) project manager training; and (f) project funding. A common element between a failed project and a successful project are the people and their leadership (Awan et al., 2015). The evidence presented here does not corroborate that leadership is a factor that challenges the improvement of PMM processes. The project manager must also have both soft and hard skills to lead (Zahra et al., 2014). Awan et al. (2015) considered the project manager's soft skills positively related to project success. Awan et al. suggested that to successfully execute a project, the project manager must emphasize soft leadership skills such as (a) communications; (b)

interpersonal aptitude; (c) stakeholder coordination; (d) delegation and team building; and (e) problem-finding, problem-analyzing, and problem-solving. Organizations use teams extensively to organize and prioritize work projects (Tost et al., 2013), and the influence of power on leadership dynamics and team performance can have the effect of reduced team communication and diminished performance (Tost et al., 2013).

Strategies to improve PMM processes. The major theme of strategies to improve PMM processes data reduction contains six directly related subfactors. These six emerging themes are categories comprising subthemes. The strategies to improve PMM processes are as follows: (a) project leader development; (b) customer focus; (c) standard methodology; (d) interactive communication skills; (e) the project office organizational structure; and (f) CPI. The factors associated with strategies to improve PMM processes (see Table 6) emerged specifically from responses to Questions 4, 5, and 8, which explored project leaders' experiences with respect to strategies to implement process areas and supportive organizational structures. The responses to Questions 4, 5, and 8 indicated that all of the factors that apply to strategies to improve PMM processes generally are equally important, with a respondent agreement rate of 85% to 100% (see Table 6). PMM has emerged as an efficient tool to define quality-based benchmarks of (a) strategic alignment, (b) effectiveness, (c) integration, and (d) optimization (Pasian et al., 2012). Stevens (2013) remarked that an organization can assess maturity and growth and define organizational evolution based on industry, technology, or professional standards.

Table 4
Project Success Factors

Themes	Number of instances	Percentage of respondent agreement
Customer satisfaction	15	55
Meeting cost, time, scope	13	50
Strong requirement	12	45
Interactive communication with customer	12	40
Employee satisfaction	4	15
Planning	3	10
Profitability	2	10

Table 5
Challenges of Improving PMM Processes

Themes	Number of instances	Percentage of respondent agreement
Customer engagement	17	55
Project planning, control, and risk reduction	17	55
Weak requirement	8	30
Knowledge management	6	15
Project manager training	4	20
Project funding	3	15
Innovation	1	5

Note. PMM = project management maturity.

Table 6
Strategies to Improve PMM Processes

Themes	Number of instances	Percentage of respondent agreement
Project leader development	227	100
Customer focus	127	85
Standardized methodology	124	100
Interactive communication	121	95
Project office structure	121	100
CPI	103	95

Note. PMM = project management maturity; CPI = continuous process improvement.

The most significant strategy that emerged from the data was the ability to improve PMM process areas by project leader development. The best project leaders are professionals with advanced education and training who can lead and teach others. Further, the data indicated that a specific strategy for the organization to improve PMM is to enhance leader development. Backlund et al. (2014) posited that there are five levels of PMM used as a baseline to measure the maturity of an organization's process and to evaluate its process capability, and the PMM levels are also helpful in prioritizing the organization's self-development efforts. Neverauskas and Raitaite (2013) suggested that the effort expended in trying to increase the organizational PMM levels is a significant reason for achieving the strategic goals. Jugdev and Mathur (2012) suggested that project leaders

integrate technical (hard skills) and people-based (soft skills) competencies to plan and implement successful projects, an approach confirmed by this research.

Major Subthemes

Project leader development. The concept of project leader development, from most important to least, comprises (a) leader development, (b) professionalization, (c) training, (d) leadership, (e) project leader experiences, and (f) teaching. Leadership is a phenomenon that requires nurturing; it has major importance in the organization and in the improvement of PMM processes (Laufer, 2012). The need for business and government to keep up with the increasing complexities of current and future projects requires the development of competent project managers (Bredillet et al., 2015; Ramazani & Jergeas, 2015).

Customer focus. Customer focus comprises (a) integration with the end user, a strong requirement; (b) meeting of cost, time, and scope; and (c) resource allocation. Developing customer-focused, process-based approaches to PM improves innovation and project flexibility through quality services (Wilson, Zeithani, Bitner, & Gremler, 2012). Customer focus must start on day one to get a clear understanding from all the stakeholders as to (a) scope, schedule, and quality of performance; (b) identification of the deliverables; and (c) a detailed project plan. However, the project must also have a communication aspect working effectively to inform the customers and stakeholders regarding schedules and timelines. Customer focus means having a persistent presence of the user from the very beginning of the project throughout its lifecycle.

Standardized methodology. The standard methodology theme comprises (a) a project-standardized methodology, (b) a PM plan, and (c) risk analysis. PM is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements (PMI, 2013a). Sundqvist et al. (2014) suggested that PM is a collection of processes that can (a) provide clarity to project and process efficiency and effectiveness, and (b) improve time, cost and quality. Process efficiencies and effectiveness can also improve and enhance customer service (Sundqvist et al., 2014). Singh and Lano (2014) described a PM plan as a set of (a) processes, (b) procedures, (c) frameworks, (d) methods, (e) tools, (f) methodologies, (g) techniques, and (h) resources used to manage the project life cycle from beginning to end. PM's fundamental purpose is to maximize productivity, primarily through effective management of the triple constraint of performance, time, and scope that are present throughout any project's life cycle (Hamid et al., 2012).

Interactive communication skills. Interactive communication skills are skills of effective communication and EI, topic areas equally dispersed throughout the theme. Full project-management integration derives from the evolution of the team into a highly functional, emotionally integrated group, resulting in a high-performing organization (Creasy & Anantatmula, 2013). Emotionally competent project leaders are better able to provide persuasive leadership and effective communication to integrate efficient practices, processes, and PM techniques (Nixon et al., 2012).

Project office organization structure. Project office organizational structure comprises (a) the organizational structure, (b) project management reviews (PMRs), (c)

process documentation, (d) decentralized decision-making, and (e) change management. The project office is one of the key organizational elements in company performance. It can influence project outcomes, which in turn improves the efficacy of company operations (Beringer et al., 2012; Pemsel & Wiewiora, 2013; Spalek, 2013). The project office is an organizational structure that standardizes project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (PMI, 2013b).

Continuous process improvement. *Continuous process improvement (CPI)* comprises (a) process improvement, (b) knowledge sharing, (c) lessons learned, (d) benchmarking, and (e) innovation. The availability of knowledge and the ability to access and share knowledge indicate that the organization is a learning organization with the capacity for increased productivity to support and sustain competitiveness (Bartsch et al, 2013). Heising (2012) suggested that repeatable processes of successful practices are useful for (a) improvement, (b) balancing, and (c) strategic organizational integration. The shared knowledge that filters through the organization fosters process innovation, creativity, and sustained competitive-advantage opportunities (Lin et al., 2012).

Case Analysis

Case 1: The government acquisition office. Respondents from the government acquisition office unanimously agreed that the concept of realized beneficial value is more important than profitability (see Table 7). When project leaders understand and implement a benefits-realization approach to PM, the organization may gain a significantly increased rate of project success (Coombs, 2015). The profitability factor of

the government acquisition office contradicts the basic understanding that improving PMM processes has also demonstrated improvements in profitability (Spalek, 2014). Data from the government acquisition office demonstrated that realized beneficial value was more important than an ROI.

The data from the government acquisition office revealed that interactive communication with the customer was the most significant factor in achieving project success (see Table 8). The other project success factors for the government acquisition office were (a) meeting project cost, time, and scope; (b) having a strong requirement; and (c) achieving customer satisfaction. These factors of project success did not target improved profitability or an ROI. BRM determined project success.

Improvement to PMM processes in the project office met with challenges as well as successes. Data from the government acquisition office indicated the challenges were specifically (a) customer engagement and communication with the customer, (b) knowledge management, (c) project manager training, and (d) securing funding for the project. The main challenges have a significant effect on project success or failure (see Table 9). The project leaders within the project office have a primarily customer-centric focus.

Analysis of the government acquisition office's data revealed specific strategies to improve PMM processes. The major themes reduced from the data analysis of the strategies to improve PMM processes in the government acquisition office are in priority order as follows: (a) customer focus, (b) project leader development, (c) project office organizational structure, (d) standard methodology, (e) CPI, and (f) interactive

communication (see Table 10). The solution for the government acquisition office to improve PMM processes is to (a) focus on the customer's requirement, (b) develop and professionalize the project leaders in a formal project office structure, and (c) apply a standardized methodology. Data analysis further revealed that a continuous effort to improve the PM processes is important to improving PMM processes. Finally, the data analysis revealed that success is contingent on (a) interactive communication with the customers and with industry, and (b) the EI capacity of the project leaders.

The minor themes within the major theme of customer focus were (a) integration with the end user, (b) a strong requirement, (c) resource allocation, and (d) meeting performance, time, and scope. The minor themes within the project leader development theme were (a) professionalization, (b) leader development, (c) training, (d) leadership, and (e) teaching. The minor themes for project office organizational structure were (a) organization structure, (b) PMRs, (c) decentralized decision-making, and (d) process documentation. The minor themes within the theme of standard methodology were (a) a standardized methodology, (b) having a PM plan, and (c) risk analysis. The minor themes of continuous process improvement were (a) knowledge sharing, (b) process improvement, (c) lessons learned, and (d) process innovation. The minor themes in interactive communication were (a) EI, and (b) effective communication.

Table 7

Profitability Factors in the Government Acquisition Office

Themes	Percentage of occurrences
Realized beneficial value	100
ROI	0

Note. ROI = return on investment.

Table 8

Project Success Factors in the Government Acquisition Office

Themes	Percentage of occurrences
Interactive communication with customer	41
Meeting cost, time and scope	24
Strong requirement	24
Customer satisfaction	12

Table 9

Challenges to Improve PMM Processes in the Government Acquisition Office

Themes	Percentage of occurrences
Customer engagement and communication with customer	40
Knowledge management	38
Project manager training	15
Project funding	7

Note. PMM = project management maturity.

Table 10

Strategies to Improve PMM processes in the Government Acquisition Office

Themes	Percentage of occurrences
Customer focus	23
Project leader development	19
Project office structure	17
Standard methodology	16
CPI	14
Interactive communication	11

Note. PMM = project management maturity; CPI = continuous process improvement.

Appendix C is an amalgamated model of major themes regarding strategies to improve PMM processes. The six major themes reduce to the most prominent minor themes of each higher-order theme. The definitions are an amalgamation from all the interview respondents. For each minor theme, there is an associated definition and a conclusion. The strength of the conclusion is in the number of occurrences of the theme mentioned by the respondents in each case.

Case 2: The for-profit company. Respondents from the for-profit PMO predominantly agreed that the concept of ROI was more important than realized beneficial value (see Table 11). All of the project leaders in the for-profit PMOs identified profitability as one of the major factors necessary for success. Spalek (2014) suggested that for-profit companies could retain a competitive advantage by realizing a greater ROI. In the for-profit PMO, profitability is a measure of success, as recognized by

this case study, yet the Case 2 respondents acknowledged that realizing the beneficial value that the end user required was also important, perhaps more important than the profitability factor.

The data from the for-profit PMO revealed that customer satisfaction was the most significant factor in achieving project success (see Table 12). The other project success factors for the for-profit PMO were (a) meeting project cost, time, and scope; (b) employee satisfaction; (c) interactive communication with the customer; (d) profitability, and (e) project planning. The purpose of these factors of project success was primarily to improve profitability and maximize the ROI. Project success was determined through ROI.

In the data analysis of the for-profit PMO interviewees' responses the key themes that emerged were (a) lack of project planning and control, and the unknowns of the external business environment; (b) a weak requirement; (c) poor customer engagement and communication; (d) lack of project funding; and (e) process innovation. The main challenges have a significant effect on project success or failure (see Table 13). The primary challenge focus area is project planning, control, and external-environment risk, representing 58% of the overall occurrences of this theme.

In analyzing of the data in for-profit PMOs, I explored specific strategies to improve the PMM processes in the PMO. The major themes reduced from the data analysis of the strategies to improve PMM processes in the for-profit PMO are in priority order as follows: (a) project leader development, (b) project office organizational structure, (c) a standard methodology, (d) CPI, (e) interactive communication, and (f)

customer focus (see Table 14). The solution narrative for the for-profit PMO to improve PMM processes is to focus on development and professionalization of the project leaders in a formal project office structure and to apply a standardized methodology. Other themes that emerged from data exploration were that continuous effort to improve the PM processes is important, and that success is also contingent on interactive communication with the customers.

Table 11

Profitability Factors in the For-Profit Company

Themes	Percentage of occurrences
ROI	87
Realized beneficial value	13

Note. ROI = return on investment.

Table 12

Project Success Factors in the For-Profit Company

Themes	Percentage of occurrences
Customer satisfaction	32
Meeting cost, time and scope	26
Employee satisfaction	16
Interactive communication with customer	11
Profitability	11
Planning	5

Table 13

Challenges to Improve PMM Processes in the For-Profit Company

Themes	Percentage of occurrences
Project planning, control and external environment	58
Weak requirement	25
Customer engagement and communication with customer	17
Project funding	17
Innovation	8

Note. PMM = project management maturity.

Table 14

Strategies to Improve PMM Processes in the For-Profit Company

Themes	Percentage of occurrences
Project leader development	31
Project office structure	16
Standard methodology	15
CPI	14
Interactive communication	13
Customer focus	10

Note. PMM = project management maturity; CPI = continuous process improvement.

With the for-profit PMO, the minor themes within project leader development were (a) leader development, (b) training, (c) leadership, (d) professionalization, and (e) the project leader. The minor themes for project office organizational structure were (a) organization structure, (b) change management, (c) process documentation, and (d) the PMR. The minor themes of the theme of standard methodology were (a) having a standardized methodology, (b) PM plan, and (c) risk analysis. The minor themes of continuous process improvement were (a) process improvement, (b) benchmarking, (c) lessons learned, and (d) knowledge sharing. The interactive communication themes were (a) effective communication, and (b) EI. The minor themes within the theme of customer focus were (a) meeting performance, time, and scope, (b) integration of the end user, (c) a strong requirement, and (d) resource allocation.

Case 3: The nonprofit organization. Respondents from the NPO unanimously agreed that the concept of realized beneficial value is more important than profitability (see Table 15). Coombs (2015) suggested that a benefits-realization approach to PM increases the project success rate. Spalek (2014) suggested that the profitability factor contradicted the basic understanding that improving PMM processes would improve profitability. Data from the NPO demonstrated that realized beneficial value was more important than an ROI. However, there was some discussion regarding the ROI at an NPO. A respondent suggested that resources streamlined for more efficiency indicated a concern for an ROI in the NPO.

A major finding from exploration of the NPO PMO data was that a strong requirement was the most significant factor in achieving project success, and customer

satisfaction was the second (see Table 16). The other project success factors for the NPO PMO are (a) meeting project cost, time, and scope; (b) interactive communication with the customer; (c) profitability; and (d) project planning. The purpose of these factors of project success is primarily for realized beneficial value to the customer while maximizing the ROI. Realized beneficial value determined project success at the PMO level.

My data analysis of the NPO PMO interviewees' responses indicated that the challenges were specifically (a) lack of customer engagement and communication; (b) a weak requirement; (c) project planning, control, and the external environment; (d) knowledge management; and (e) project manager training. The main challenges have a significant effect on project success or failure in the NPO environment (see Table 17). The primary challenge focus area is customer engagement and communication with the customer, as represented by 47% of the overall occurrences of this theme.

My analysis of the NPO data revealed specific strategies to improve the PMM processes in this unique PMO. The major themes resulting from the data analysis of the strategies to improve PMM processes in the NPO are in priority order as follows: (a) project leader development, (b) interactive communication with the customer, (c) project office organizational structure, (d) standard methodology, (e) customer focus, and (f) continuous process improvement (see Table 18). The solution narrative for the NPO to improve PMM processes is to focus on development and professionalization of the project leaders in a formal project office structure and to apply a standardized

methodology. Data analysis further revealed that customer focus and a continuous effort were also important in improving PMM processes.

Table 15

Profitability Factors in the Nonprofit Organization

Themes	Percentage of occurrences
Realized beneficial value	85
ROI	15

Note. ROI = return on investment.

Table 16

Project Success Factors in the Nonprofit Organization

Themes	Percentage of occurrences
Strong requirement	38
Customer satisfaction	25
Meeting cost, time and scope	19
Interactive communication with customer	13
Planning	13

Table 17

Challenges to Improve PMM Processes in the Nonprofit Organization

Themes	Percentage of occurrences
Customer engagement and communication with customer	47
Weak requirement	27
Project planning, control and external environment	20
Knowledge management	7
Project manager trainer	7

Note: PMM = project management maturity.

Table 18

Strategies to Improve PMM Processes in the Nonprofit Organization

Themes	Percentage of occurrences
Project leader development	20
Interactive communication with customer	20
Project office structure	19
Standard methodology	17
Customer focus	15
CPI	9

Note: PMM = project management maturity; CPI = continuous process improvement.

In the NPO, the minor themes within project leader development were (a) professionalization, (b) leader development, (c) leadership, and (d) training and teaching. Within interactive communication, minor themes were (a) effective communication, and (b) EI. The minor themes for project office organizational structure were (a) the PMR, (b) organizational structure, (c) process documentation, (d) change management, and (e) decentralized decision-making. The minor themes of standard methodology were (a) having a standardized methodology, and (b) having a PM plan. The minor themes within the theme of customer focus were (a) integration of the end user; (b) meeting performance, time, and scope; (c) a strong requirement; and (d) effective resource allocation. The minor themes of continuous process improvement were (a) knowledge sharing, (b) innovation, (c) process improvement, and (d) benchmarking and lessons learned.

Case 4: The not-for-profit organization. The NFPO has effectively become a deviant case for comparison among the other cases. The purpose of a deviant case is to create a point of comparison among the other cases (Yin, 2014). Respondents from the NFPO unanimously agreed that the concept of realized beneficial value is more important than profitability (see Table 19). When project leaders understand and implement a benefits realization approach to PM, the organization may gain a significantly increased rate of project success (Coombs, 2015). The profitability factor of the NFPO was not relevant to the basic understanding of profitability (Spalek, 2014). Data from the NFPO demonstrated that realized beneficial value was the single important factor.

The major theme that emerged from the exploration of NFPO data was that customer satisfaction was the most significant factor in achieving project success (see Table 20). The other project success factors for the NFPO are (a) customer satisfaction; (b) a strong requirement; (c) meeting project cost, time, and scope; (d) employee satisfaction; and (e) interactive communication with the customer. The purpose of these factors of project success is primarily to improve processes that deliver a beneficial value required by the customer. Only customer satisfaction, measured through customer feedback, determines project success.

Another subtheme that emerged from the exploration of data was that the challenges are specifically (a) the lack of project planning and control, and the unknowns of the external environment; (b) poor customer engagement and communication; and (c) inadequate project manager training. The main challenges have a significant effect on project success or failure (see Table 21). The primary challenge focus area is project planning and control, and the external environmental risk represented by 60% of the overall occurrences of this theme.

A major theme that emerged from exploration of the NFPO data included specific strategies to improve the PMM processes in the project office. The major themes reduced from the data analysis of the strategies to improve PMM processes in the NFPO are in priority order as follows: (a) project leader development, (b) interactive communication, (c) a standard methodology, (d) CPI, (e) project office organizational structure, and (f) customer focus (see Table 22). The solution narrative for the NFPO to improve PMM processes is to focus on project leader development and professionalization, and to create

positive relationships through effective communication. Applying a standard methodology and conducting lessons learned through benchmarking contributed significantly to NFPO project successes. Data analysis further revealed that project office organizational structure contributed to project success, as did establishing clear customer goals as the guide for project execution.

Table 19

Profitability Factors in the Not-for-Profit Organization

Themes	Percentage of occurrences
Realized beneficial value	100
ROI	0

Note: ROI = return on investment.

Table 20

Project Success Factors in the Not-for-Profit Organization

Themes	Percentage of occurrences
Customer satisfaction	37.5
Strong requirement	25
Meeting cost, time and scope	12.5
Employee satisfaction	12.5
Interactive communication with customer	12.5

Table 21

Challenges to Improve PMM Processes in the Not-for-Profit Organization

Themes	Percentage of occurrences
Project planning, control and external environment	60
Customer engagement and communication	30
Project manager training	10

Note: PMM = project management maturity.

Table 22

Strategies to Improve PMM Processes in the Not-for-Profit Organization

Themes	Percentage of occurrences
Project leader development	38
Interactive communication with customer	22
Standard methodology	14
CPI	10
Project office structure	10
Customer focus	6

Note: PMM = project management maturity; CPI = continuous process improvement.

The minor themes within project leader development were (a) leader development, (b) leadership, (c) teaching and training, (d) professionalization, and (e) a focus on the project leader. The interactive communication themes were (a) EI, and (b) effective communication. The minor themes of standard methodology were (a) having a

standardized methodology, and (b) having a PM plan. The minor themes of continuous process improvement were (a) capturing lessons learned, (b) process improvement, (c) benchmarking, and (d) knowledge sharing. The minor themes for project office organizational structure were (a) organization structure, (b) PMRs, and (c) process documentation. The minor themes within the theme of customer focus were (a) having a strong requirement; (b) meeting performance, time, and scope; (c) integration of the end user; and (d) resource allocation.

Cross-Case Synthesis

I performed cross-case synthesis using framework matrix analysis. Evaluating the project offices based on case analysis revealed some differences and commonalities among the various cases. Most of the aggregated observations revealed through face-to-face interviews and matrix-coding query were predictable. For example, the NFPO (the deviant case) does not operate from a commonly defined project office or have professionalized project managers. However, the volunteers in that organization executed a PM plan very similar to that found in a commonly defined PMO. One area that surprised me was ROI and realized beneficial value. Most of the project leaders interviewed identified realized beneficial value as being more important than ROI or profitability. The project leaders used provided resources to ensure that the end users or project sponsors received the product or service they required. The challenge in all cases was for the project leaders to fully understand the required outcome of the project and to keep the end users on track with the project.

The concept of realized beneficial value recurred in the data 75% of the time while profitability recurred only 25% of the time. This difference among cases was distinctive in that the for-profit PMO respondents were unanimous that profitability was more important than beneficial value. The other three cases had little to no regard for profit or business-development concepts. Even though realized beneficial value was the predominant theme in all the cases, ROI was a unanimous profitability factor for the for-profit PMO.

The main project success factors across all the cases were (a) customer satisfaction, (b) interactive communications with the customer, and (c) having a strong requirement. The for-profit PMO and the NFPO both concluded that customer satisfaction was the number-one way to determine success (see Tables 12 and 20). The number-one way the government acquisition office achieved project success was through interactive communication with the customer. One project leader participant, speaking of the importance of communication to project success, said, “Looking back on every single one of our efforts on anything that I’ve worked with over the past 20 years, absolutely, communication with the customer is the most important factor in project success,” and “the sooner you bring [the project leader] into the conversation, the greater chance of success.”

A strong requirement was the number-one factor for project success for the NPO. One of the NPO’s participants said that “[not having a requirement is] a circle of confusion. When the circles of light produced by an optic lens are tighter, the crisper the image looks. The looser they are, the blurrier the image looks.” Therefore, establishing

the outcome criteria with the customer and communicating updates to the customer throughout the project achieves positive customer satisfaction and project success.

The main challenges to improve PMM processes across all the cases were (a) project planning, control, and the external business environment (risk); and (b) customer engagement and communication. The participants of the for-profit PMO and the NFPO identified lack of project planning, project control, and the external business environment (risk) as the number-one challenge to improving PMM processes. For example, a participant from the for-profit PMO noted that it was challenging to implement a process in an environment of ever-changing operational conditions that make the deliverables unclear and have a negative impact on customer satisfaction.

Both the government acquisition office and the NPO identified customer engagement and communication as the predominant challenge to improving PMM processes. If the customer is not present through the normal cycles of the PM planning, the customer may fail to understand the acquisition rigor associated with the process. One participant said, “Sponsors are not as interested in [the project plan] as we are, so sometimes we don’t have . . . the sponsor’s full cooperation to advance the project.” In that environment, the PMM processes may stagnate.

The major strategies used to improve PMM processes are (a) project leader development, (b) customer focus, (c) standard methodology, (d) interactive communication, (e) project office organizational structure, and (f) continuous process improvement (see Appendix C). The main factors of project leader development are leader development and professionalization. The for-profit PMO and the NFPO both

identified leader development as the most important strategy to improve PMM processes. In these cases, leader development is a predetermined rotation through various assignments to gain and maximize experience. Leaders put in charge of overseeing implementation of project plans have exposure to various project types. The government acquisition office and NPO, however, identified professionalization as the number-one strategy to improve PMM processes in the organization, an essential factor to elevate the integrity of the staff and the overall level of leadership professionalism of the project office. Both of the minor themes aggregate to form the basis of the major theme of project leader development as the number-one strategy to improve PMM processes.

The main factors of customer focus are (a) integration with the end user; (b) developing a strong requirement with the customer; and (c) meeting the cost, time and scope of the customer's requirement. A for-profit PMO participant identified meeting the cost, time, and scope of the project as the most important minor theme: "If [the project leaders] are focused on these three [elements] and then on my ROI, that's how I am going to measure my ROI because that is really what's going to come back to us [the company] from a profitability standpoint." Participants from the government acquisition office and the NPO both identified integration with the end user as the minor theme under customer focus. The government acquisition office participant said, "Persistent presence of the user, I think, is the best way [to achieve success]. Having that user involved from the very beginning to the very end and everything in between is paramount." A participant from the NPO said that they are "not effective if [the project leaders] just take tasking and don't understand the greater outcome." Project leaders that blindly follow the direct

orders from the customer are ineffective leaders and project managers. In fact, the NPO embeds project leaders into the supported organization to work directly with the end users. Integrating with the customer as a means of focusing on the customer is a strong strategy to improve PMM processes. The NFPO suggested that a strong requirement from the customer was the most important minor theme to improve PMM processes (see Appendix C). The minor themes of customer focus—integration with the end user and developing a strong requirement with the customer—are significant factors to help improve PMM processes.

Having a standardized methodology was clearly the most significant strategy to improve the PM methodology within the PMM process (see Appendix C). All cases identified a standard methodology as a means for the project leader to execute defined and repeatable processes and procedures. It allows everyone to understand common definitions, testable and measurable conditions, and repeatable attributes. All cases emphasized a standardized methodology.

Interactive communication comprises, equally, two minor themes emphasized by all the cases: EI and effective communication. Interactive communication is perhaps the most critical strategy to improve PMM processes and project success, or, if lacking, to bring about project failure (see Appendix C). When the project leader can recognize, regulate, and use emotional information to achieve effective performance results, effective communication flourishes. Participants from the for-profit PMO identified EI less than the other three cases. All of the cases strongly noted effective communication.

Establishing a project office organizational structure such as the PMO enhances operational support. Most of the cases strongly mentioned this factor. In addition, half the cases strongly mentioned the PMR as an important factor to improve the PMM process. The PMR within the project office organization facilitates the management of a standard process and it develops project leaders to provide support and collaboration within the organization. One participant said of the PMR, “you [have] a comprehensive road map laid out and a comprehensive execution strategy laid down, with a comprehensive requirement laid out.” The PMR facilitates collaboration among project leaders and key stakeholders within the project office organization. Establishing an organization structure (e.g., integrated product team or PMO) is an important strategy to improve PMM processes.

The main factors of the major theme of continuous process improvement are process improvement and knowledge sharing, factors that were not strongly mentioned or identified as strong strategies to improve PMM processes. Process improvement is a means to improve existing processes and methodologies. All participants identified process improvement as being important, but in most cases it was not occurring in a formal manner. One participant said that his organization had a special team that at one time performed lessons-learned analysis and process improvement, but it no longer performs that function. The for-profit PMO participant identified process improvement as a tool used “to make their processes easier. . . . It became more of a collaboration and a discussion that refined [a] process that was constantly improving and growing.” The for-

profit PMO implemented process improvements as a means to reduce the burden and expense of executing services, and to deliver higher quality support.

The NFPO participant also identified process improvement as a means to reduce the burden on the project leaders. The government acquisition office and the NPO strongly mentioned knowledge sharing. The NPO is, in fact, chartered to share knowledge across the enterprise and to give back new technology to the sponsor. One participant from the NPO said that many sponsors “had the same problems that they had - - why not reuse it? Don’t reinvent the wheel.” The ability to reach back into the enterprise provides a robust and powerful technique. As another participant said, “Why should we reinvent [the solution] when we already have someone who knows how to do it?” Knowledge-sharing and process-improvement techniques make a powerful strategy to improve PMM processes through continuous process improvement.

Summary

The purpose of this qualitative multiple-case study was to explore strategies proven essential to project leader efforts to improve PMM processes. The overarching research question guiding this study focused on the efforts of successful PM. The research question was: What strategies do IT project leaders use to improve PMM processes? The findings presented from interview data specifically indicated that applying basic principles of PM improves PMM processes.

Spalek (2014) noted that strengthening the PMM levels brings improvement in areas such as (a) on-time delivery, (b) cost controls, (c) organizational efficiencies, and (d) profitability. The conceptual framework for this research is the PMM model, which

categorizes the processes through progressive improvement of the PMM levels. The PMM levels are (a) initial or common language; (b) repeatable common processes; (c) singular, defined methodology; (d) managed processes through benchmarking; and (e) optimized processes through continuous process improvement. The PMM model provides a tool to assess the capabilities, structure, processes, and competencies against industry professional standards (Stevens, 2013).

Four major themes and six strategy themes (subthemes) emerged from the primary data through thematic synthesis. The major themes are (a) profitability factors, (b) project success factors, (c) challenges to PMM process improvement, and (d) strategies to improve PMM processes. The major theme of strategies to improve PMM processes data reduction comprises six subfactors directly attributed to a strategy that improves PMM processes. These six emerging themes are categories comprising subthemes. The strategies to improve PMM processes are (a) project leader development, (b) customer focus, (c) standard methodology, (d) interactive communication skills, (e) project office organizational structure, and (f) continuous process improvement.

Framework matrix analysis facilitated cross-case synthesis of the four case profiles. I presented each case in similar fashion for purposes of transferability and generalization, and presented the NFPO as the deviant case to make a point of comparison among other cases. The four cases are the government acquisition office (Case 1), the for-profit PMO (Case 2), the NPO (Case 3), and the NFPO (Case 4). I evaluated each case based on the four major theme factors: (a) profitability, (b) project success, (c) challenges, and (d) strategies to improve PMM processes.

Face-to-face, semistructured interviews revealed project leader experiences that I aggregated into common observations and themes as defined above. Cross-case synthesis provided comparison and contrast variation among cases within the major theme factors. The main difference among the cases was the priority with which the project leaders applied specific minor theme concepts to facilitate improvements in the PMM processes within the organization. The concept of profitability was a significant force that drove PMM process-improvement priorities within each of the major themes and subthemes. An organization that has underlying concerns regarding their ROI to the corporate offices may decide to invest less in the PMO because it does not provide a significant lift in the profit margin. Albrecht and Spang (2014a) noted that there is an ideal PMM level for an organization; this ideal level complements the cost and benefit of the investment in the development of the PMO and its PMM level. According to Spalek (2014), as the level of maturity in the PMO increased, the level of investment was also elevated. However, this study was unable to confirm that statement regarding the level of investment in the PMM level. In each case, the project leaders were less concerned about improving PMM processes, and more concerned with reporting profitability or managing the beneficial value delivered to the customers.

Applications to Professional Practice

The results of this study can apply to PM strategies to improve PMM processes among IT professionals. Business, government, and NFPO leaders may gain a better understanding of why IT projects succeed or fail, and as a result can implement strategies to improve project success rates. For example, participants from every case indicated that

having the end user present throughout the entire PM process always ensured project success. Participants also stated that EI, as a subfactor of interactive communication with the customer, was a critical success factor for the project office. Developing an in-house training plan to improve EI among project leaders, and applying those skills to a process that improves the persistent presence of the end users in the PM plan, is an inexpensive method of collaboration to improve project success.

IT business leaders should use project leadership development as an opportunity to improve the skills of project leaders and as a means to improve communication and collaboration with the end user or project sponsors. Project leadership development was the most referenced major theme of this study to improve PMM processes. Project leader development, provided through rotational assignments that offer diverse experiences with different types of projects and programs, is one possible solution to elevate the leader's level of professional competence. The project leader's training development plan and an internal teaching program offer opportunities to develop the skills of the project leader and improve the professionalism of the organization.

Project success was attributable to the people executing the project in the most efficient way possible, with a clear focus on the customer and the customer's project requirement. Toader et al. (2010) suggested that customer involvement and project leadership support led to project success. Yao (2015) suggested that an absence of collaboration in the traditional PM process creates project isolation and leads to lack of enterprise innovation. Souza et al. (2012) noted that PMM offers an organizational culture that contributes to project success. A culture of PM in the organization reinforces

that a clearly defined requirement, in conjunction with the customer vision of the outcome up front, will lead to project success.

This study noted several strategies that an organization should implement to improve project leadership development and collaboration. The project offices should identify project leaders' roles and responsibilities, and create organizational structures that support development of professional growth and experience. Project leaders need to attend technical training alongside their end user and industry counterparts to fully understand the user requirements. This will create collaborative opportunities with the end users. Leaders also need to encourage project leaders to earn PMP certification. In addition, project leaders must develop the practice of training and educating end users and key stakeholders on each element of the PM plan and the technology in development.

The IT project leaders who participated in this study identified standardized PM methodology as an important element of the PMM process. PM describes different kinds of processes that can provide clarity to project and process efficiency and effectiveness, and improve time, cost and quality (Sundqvist et al., 2014). Adopting PM methodologies from existing organizations, such as PMI, is a simple means of implementing this valuable component to improve PMM processes within an organization.

Interactive communication with key stakeholders and customers is another soft skill needed to improve the overall project plans and goals at all levels of management. Maini et al (2012) reported that EI as a social competency had a positive effect on strategic and economic outcomes because of the ability to perceive, effectively manage, and work with the emotions of others. Too and Weaver (2014) suggested that there must

be a clear link between project output and the requirements of the organization's business or operational strategy, indicated through effective communication between the project leaders and customers. Developing a strategy to engage the key stakeholders throughout the PM process, and getting the end users embedded into the process early, is as simple as improving EI processes through internal training.

The project office structure should apply standardized PM processes and methodologies to improve rapid decision-making processes and speed product delivery, facilitated through the appropriate organizational structure to enhance operational support. Further, implementing a rigorous PMR reinforces acquisition rigor. Tahri and Drissi-Kaitouni (2013) characterized the project by "a set of coordinated actions involving diverse skills and resources to achieve a specific outcome in a defined time interval." Improving PMM process areas surrounding PM review enhances value for the end users and project stakeholders through active participation and improves project performance as a function of performance, time, and scope.

CPI enforces review and ongoing development of the existing processes and PM procedures. CPI is an optimized process level of the PMM model. Optimization is due to CPI as a function of benchmarking, capturing lessons learned, and sharing knowledge gained. There are many ways to capture and share lessons learned, track benchmark indices, and improve existing processes and procedures. One method noted was identifying a team within the project office to conduct CPI operations; another was sharing best practices at a lunch-and-learn for project leaders. Using CPI methodology was the single most effective means of improving PMM processes in the project office.

Implications for Social Change

Investing in the PMO to improve the PMM processes of the organization may positively contribute to social change (Spalek, 2014). However, the investment could be as simple as time and effort expended to create improved PMM situations. There is too much variability among the current PMM models in the market to rely on one specific model. Mullaly (2014) found that PMM models are not universal and projects are not always linear. Project stakeholders within academic institutions, small and large businesses, government, and non-governmental organizations often do not have allocated funds to invest in PMM process development (Mullaly, 2014). However, for example, an NFPO that does not have a commonly defined project office can identify and utilize best practices gleaned from other project offices and could adopt (a) PM methodologies, (b) project leadership development strategies, (c) EI practices, (d) CPI operations, and (e) interactive communication strategies to raise the PMM culture of the organization (Kerzner, 2013). This should be possible without having to invest internal resources in a formal project office in order to realize the benefits of repeatable project success (Coombs, 2015).

This simple aspect of this study can generate cost efficiencies and performance effectiveness through improved PMM processes and sustainable development in PM, even if the increase is minimal (Silvius & Schipper, 2013; Sundqvist et al, 2014). This could result in positive structural changes to the organization, produce positive changes in project performance, and increase the probability of project success across the PM enterprise (Sundqvist et al., 2014). Some small businesses and marginally resourced

organizations such as churches, charitable organizations, and educational foundations have realized economic benefits overall and have contributed to positive economic transference in the communities in which they provide support (Lappe & Spang, 2014). The result could be that any organization could extend greater amounts of resources and services to the beneficiaries of such benevolent acts to improve the social conditions of the global society.

Recommendations for Action

Improving PMM processes and inculcating a culture of PM within the greater organization enhances value to the project sponsors and end users by improving performance as a function of performance, time, and scope. I recommend that project leaders and key stakeholders develop strategies to improve PMM processes that specifically target

- (a) project leadership development through professionalization, training, and leadership experiences;
- (b) adopting a customer-focus culture, by integrating the end user in the process to develop strong requirements;
- (c) establishing a standardized methodology developed through the PM plan;
- (d) building effective communications skills within the project office and reinforcing EI practices throughout the organization and the external environment;
- (e) establishing a project office support structure that promotes effective communication and facilitates PMRs and process documentation; and

(f) practicing continuous process improvement through knowledge sharing and captured lessons learned.

The leaders of organizations that operate in turbulent environments have to make quick decisions to oversee and manage current and future operations. A project office that is poised to react within a fast decision-making cycle is in a better competitive position to survive the turbulent times (Albrecht & Spang, 2014b; Spalek, 2014).

These recommendations apply equally to a federal government acquisition office, a for-profit PMO, an NPO portfolio management office, or to NFPOs in general that are managing projects to do charitable works. According to Wysocki (2014), the steps needed to achieve useful action are through a sequence of activities and events that have a singular purpose, goal, or objective, bound by time, budget, and specifications. The project leadership identifies a goal to inculcate the organization with a culture of PM and develops the steps necessary to sustain quality, deliver on time, and manage cost effectively.

Through journal articles, professional and peer-reviewed literature, I will disseminate the results of this study to the stakeholders of the participant organizations of this study, my place of employment, conferences, and training seminars. Sharing the results of this study is an academic responsibility that I intend to honor.

Recommendations for Further Research

The purpose of this study was to explore strategies to improve PMM processes. I conducted the study using semistructured, face-to-face interviews of project leaders to elicit their experiences regarding PMM process improvement. I found that the majority of

the studies in the body of literature regarding PMM processes used quantitative methods, and that few studies used qualitative methods or qualitative multiple-case studies on PMM processes. I recommend that researchers conduct more single-case studies to explore more deeply a specific project office's PMM profile, using a PMM assessment tool at the beginning of the study to first establish a PMM baseline for the project office. A greater focus on organizational profitability would also produce interesting results that could add value to the existing PMM body of knowledge.

A limitation of this study was that the research participants reflected experiences relative to their current employment, which could have caused them to invoke protective measures to defend the organization from a perceived threat. I recommend using an anonymous data collection technique such as a questionnaire, and that the participant and researcher remain unknown to one another. Another limitation and concern was that the perspectives of the research participants might not have always been free of bias, which could have caused them to misrepresent concepts and give misleading comments, either intentionally or unintentionally. I recommend further exploration using a single-case methodology with a larger pool of research participants to explore the situation further. Finally, the last limitation of concern was that all subjects of the study were geographically located in the southeast region of the United States. I recommend conducting single-case studies in other regions of the United States, and further exploring regions of global diversity. Adding cultural diversification would generate a new and needed dimension to the topic area regarding strategies to improve PMM processes.

Reflections

In the course of this DBA doctoral study, I discovered the true value of face-to-face communication. The body of knowledge revealed in the literature is compelling enough to implement PMM process improvements. However, it offers only hypothetical solutions for very real problems, which can be stressful and may not warrant expending scarce resources.

Throughout the data collection process, I grew in inspirational motivation through conversations with other project leaders about their professional challenges and solutions. More importantly, all of the research participants relayed that their participation in the process brought inspiration to them as well. Most participants did not have prior knowledge of PMM processes. I feel good about having shared that knowledge with them and providing them with a process for professional development of their project teams. At the beginning of my DBA Doctoral Study process, I saw it as an academic endeavor. However, my thinking has changed and I have come to believe that the process of a qualitative exploration of deep and robust experiences was what mattered most. Now I understand that the truth in knowledge is in the pursuit of knowledge.

Conclusions

IT organizations lose significant competitive value when business leaders fail to use PMM processes to enhance market delivery, reduce cost, and increase project performance (Lappe & Spang, 2014; Spalek, 2014). Strategies to improve PMM processes in project offices have a direct impact on providing realized beneficial value to the project sponsors and end users. Semistructured interviews with project leaders

provided a means to explore PMM strategies used to improve the rate of repeatable project success. Six major themes emerged from the project participants, and all the themes represent strategies a project office could employ quickly to ensure repeatable positive project results through the interactive function of performance, time, and scope. The emergent themes are (a) project leader development, (b) customer focus, (c) a standardized methodology, (d) interactive communication with the customer, (e) project office organizational structure, and (f) continuous process improvement. The findings from this study suggest that improving these areas of PMM will have a positive effect on project success rate and corroborate the conceptual framework that PMM processes demonstrate improvements in (a) on-time delivery, (b) cost reductions, (c) organizational efficiency, and (d) profitability.

Leaders focus on multiple projects at any one time. Metcalf and Benn (2013) concluded that the various factors that contribute to a project leader's ability to successfully navigate complex adaptive systems, such as the project office, depend on the dynamic interactions of the project participants. The results identified from this research revealed six major themes to improve project success through (a) improved market delivery, (b) reduced costs, and (c) improved performance. IT business leaders that have responsibility over project offices should inculcate strategies to introduce PMM processes into the organizational fabric to realize the competitive advantage that PM offers.

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Appendix A: Data Collection Interview Protocol

Case #: _____ Participant#: _____ Participant Initials _____ Date: _____

Example: CASE1_P1_WS_06172015

Introduction:

The purpose of this qualitative multiple-case study will be to explore implementation strategies to optimally apply PMM processes used by IT project leaders. I believe that the exchange of project leader experiences from multiple types of PMOs may contribute to social change by improving cost efficiencies and PM effectiveness by sharing the synthesis of strategic implementations plans gleaned from the experiences that resulted in positive beneficial value. This effect could improve the economic conditions at the microeconomic level in local communities supported by benevolent groups by expanding charitable and socially responsible projects.

Central Research Question:

What strategies do project leaders use to improve PMM processes?

Background/Profile Questions:

1. What are your title and job duties/responsibilities?
2. What is your level of portfolio, program or project management organization?
3. How long have you performed in this position?
4. What other positions have you held in your current or other organizations?
5. What are your leadership or supervisory responsibilities?
6. What is the total number of employees in your organization/team?

7. Can you provide organizational documents such as process and procedure descriptions, archived files that corroborate the interview, examples of project plans, examples of project manager training and professional development requirements, etc.?

Interview Questions:

1. What PMM processes most contribute to project success?
2. What is the best way to determine project success?
3. How do you determine ROI or realized beneficial value?
4. How does organizational structure contribute to project success?
5. What is your organization's PMM level? How did you determine PMM level?
6. What strategies have been used to apply PMM processes?
7. What project leader professionalization strategies have been used that contributed to project success?
8. How does your organization implement PMM processes optimally?
9. How does being in a particular type of project office facilitate project success?
10. What PMM processes does your PMO use to help predetermine success?
11. What challenges do you encounter in implementing PMM processes to achieve project success?

Wrap-Up: What additional experiences have you had that would contribute to strategy implementation of PMM processes in the PMO?

Thank you for your participation in this project. My next step is to transcribe the audio recording of this interview verbatim, and to write up the interview summary. Can I

share my interview summary with you for your validation before writing up the final report?

Appendix B: Invitation to Participate in a Research Project

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

Project Information Statement

Project Title: Strategies To Improve Project Management Maturity Processes

Dear Madam/Sir,

You are invited to take part in a research study exploring strategies to improve project management maturity (PMM) processes in the project management office (PMO). My name is Walter Sargent, a doctoral candidate at Walden University. You were selected for this study because of your experience and level of industry involvement in the key processes directly or indirectly related to project management in a PMO. I will use the research data collected to explore the project management practices of the PMO as it relates to return on investment (ROI) and PMM processes of the office.

Background Information

The purpose of this study is to explore the experiences of selected project leaders who generally realize a positive ROI from their projects. The target population will consist of project leaders who have managed technology related projects for at least 5 years. The project leader can be assigned to either a project, program or portfolio management level of responsibility. The participants must be currently assigned to or employed within one of the four business models, for at least the last 3 years: Government defense acquisition PMO, corporate PMO, not-for-profit organization (NFPO) PMO, or a nonprofit organization (NPO) PMO. Further, some project leaders should have leadership experience where they influence financial resources and human resources.

Procedures

If you agree to participate in this study, you will be asked to participate in an individual interview regarding your daily job functions and experiences in your role as a project management practitioner; and provide key supporting documentation when appropriate as examples to define your explanation of your experiences within the competitive environment of project management. All interviews will be recorded to facilitate future data analysis. Following the interview, I will transcribe the recorded interview and provide an interview summary for you to review before formally including it in the data analysis process.

Voluntary Nature of the Study

Your participation in this study is voluntary and completely anonymous. This means no one will know if you participated or if you decided not to participate; no one will know how you answered. If you decide to join the study now, you can change your mind at any time before, during or after the study and discontinue participation. After the study, you may communicate through email, phone, or face to face to express your intent to withdraw as a participant. In addition, you may skip any questions that you do not want to answer.

Risks and Benefits of Study Participation

The interview will take approximately 1 hour to complete and will involve a detailed discussion of your daily experiences, processes, and procedures related to how you achieve project success in your organization. This study may benefit employees and business leaders/owners of project-based organizations by sharing how best to recognize the PMO and PMM processes and utilize them more productively to improve project management performance and benefits realization, or ROI.

Compensation

No compensation or incentives will be offered. However, participants will be provided an electronic copy of the final report upon request.

Confidentiality

Any information you provide will be confidential and anonymous. I will not use or share your information for any purposes outside of this research project. In addition, I will not include your name, the name of the company, or any other information that could identify you in any reports of the study. The electronic information will be stored on a password-protected flash drive, and documents related to this study will be kept in a locked file storage cabinet to which only I will have access. Data will be kept for a period of at least 5 years, after which the data will be destroyed. If you decide to not participate at any time, the data collected from you will be destroyed immediately.

Contacts and Questions

You may ask any questions you have at any time. You may contact me via telephone [REDACTED] or email [REDACTED]. If you desire to talk privately about your rights as a participant, you can call **Dr. Endicott**, who is the Walden University representative for academic research. Dr. Endicott's contact number is [REDACTED], and the email address is [REDACTED]. Walden University approval number for this study is **02-17-16-0378521** and it expires on **February 16, 2017**. As part of the data collection process, you will be asked to sign a statement of informed consent at the time of the interview. The statement of informed consent will reiterate your

voluntary and anonymous nature of the data collection technique.

Thank you for your consideration in this invitation to participate in my research. I will contact you within a few days to schedule a time to conduct the interview at your convenience.

With kind regards,

Walter H. Sargent
Doctoral Candidate
Walden University



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Appendix C: Thematic Definitions and Conclusions: Strategies to Improve PMM

<i>Higher-Order Theme</i>	<i>Theme</i>	<i>Definitions</i>	<i>Conclusion</i>
Factors for improving project leader development	Leadership development	How to develop personnel through rotational assignments.	Leadership development is an important factor to develop project leaders. This factor is strongly considered in most cases.
	Professionalization	How to elevate the project leader's level of professional competence.	Professionalization is considered important to raise the integrity of the staff and the overall level of professional development. In most cases, this theme was strongly mentioned.
	Training	How to define the training requirements for the project leader and conducting training for users and other project managers.	Training and teaching are very important factors in both leadership development and professionalization. It was mentioned in all cases, but it was not strongly mentioned.
Factors for improving a customer focus	Integration with the end user	How customer focus is implemented to improve PMM processes.	A persistent presence of the end user throughout the project management process is important to achieve success. This factor was strongly mentioned by some cases.
	Strong requirement	Getting a clearly defined requirement and vision of the outcome up front to be able to define the deliverables.	The upfront requirement is a necessary and important factor developed through customer focus. A strong requirement was mentioned, but not strongly mentioned, by all cases.
Factors for improving project management methodology	Standardized methodology	How well the project leaders execute defined and repeatable processes and procedures, flexible to deviate from a standard methodology when all understand the guidelines.	A standardized project management methodology allows everyone to understand common definitions, testable and measurable conditions, and repeatable attributes. Standardized methodology was strongly mentioned by most cases.
	Project management plan	How well the project leader checks the progress of a project, reviews, and follows testing and measuring to articulate actions, goals, and outcomes; realigns priorities of the program as necessary.	The project management plan implements the standardized project management methodology. It is an important factor to improving PMM processes. It was mentioned by all cases, but not strongly mentioned.
Factors to improve interactive communication	Effective communication	How to improve positive interaction as a vehicle to communicate the overall project plans and goals to all levels of management.	Effective communication throughout all levels of project management with stakeholders enhances interactive communication. It is considered extremely important to achieve project success or project failure if lacking. Communication was strongly mentioned by all cases.
	EI	How to recognize, regulate, and use emotional information to achieve effective performance results to enhance effective communication.	Communication is critical to improving PMM processes; emotional intelligence was strongly mentioned by most cases.
Factors for improving a project office organizational structure	Organizational structure	How to establish and organize the project management office to facilitate and enhance operational support.	The project office organizational structure is an important factor to improve PMM processes. This factor was strongly mentioned by some cases.
	PMR	How to manage a standard process and to develop project leaders to provide support and to collaborate within the organizational structure.	The PMR is important within the project office to enhance collaboration and facilitate standard method with the project office. A PMR was mentioned by some of the cases, but strongly mentioned by half the cases.
Factors to improve continuous process improvement	Process improvement	How to improve existing methodology and processes.	Process improvement is important to maintain a relevant process. It was not strongly mentioned by some of the cases.
	Knowledge sharing	How to share information needed to improve processes and method; helps to mitigate the challenges and enhance project success.	Knowledge sharing is necessary to improve PMM processes. It is an important factor to improve PMM processes. It was not strongly mentioned by most cases.

Note: PMM = project management maturity; EI = emotional intelligence; PMR = project management review.