PROJECT MANAGERS' PERCEPTIONS OF THE PRIMARY FACTORS CONTRIBUTING TO SUCCESS OR FAILURE OF PROJECTS: A QUALITATIVE PHENOMENOLOGICAL STUDY

by

Ray C. Hickson

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ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

The Dissertation Committee for Ray C. Hickson certifies approval of the following dissertation:

PROJECT MANAGERS' PERCEPTIONS OF THE PRIMARY FACTORS CONTRIBUTING TO SUCCESS OR FAILURE OF PROJECTS: A QUALITATIVE PHENOMENOLOGICAL STUDY

Committee:

Leo Mallette, EdD, Chair

Josephine Hauer, EdD, Committee Member

Bruce Laviolette, PhD, Committee Member

Leo Mallette

Josephine Hauer

Bruce Laviolette

Jeremy Moreland, PhD
Academic Dean, School of Advanced Studies,
University of Phoenix

Date Approved: November 28, 2014

ABSTRACT

This qualitative interpretative phenomenological study increased the understanding of project managers' perception and lived experiences of the primary issues contributing to the success or failure of projects. This study used method triangulation to analyze the experiences of 48 project managers. The study was conducted in three phases, including a pilot study, an open-ended questionnaire, and one-on-one interviews. The project managers' lived experiences indicated that stakeholder communication; collaboration; and consensus on governance, leadership methods, definition of requirements, and success criteria during the project initiation stage are critical to achieving higher project success rates. The major themes that emerged from this study are the definition of project success, requirements and success criteria, stakeholder consensus and engagement, transparency, and project management methodologies. Additional research is suggested to determine if there is a relationship among experience, qualifications, certification, and project success or failure and to determine implementable solutions to improve project success rates.

DEDICATION

I am thankful to have a strong family support structure. This study is dedicated to family, friends, colleagues, and cohort that have provided support throughout this effort. Our journey has been long and arduous, but the knowledge gained along the way has been insightful. I have grown because of having taken this journey and the support I have received.

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Chapter 1

Introduction

Approximately 40% of construction projects fail and approximately 70% of information technology (IT) projects fail (Al-Khouri, 2012; Ferrell, 2010; Heagney, 2012). However, there are no definitive or conclusive explanations for the high rate of project failures because many factors contribute to project failure and success (Mishra, Dangayach, & Mittal, 2011). For the aforementioned reasons, developing an understanding of project managers' perspectives and lived experiences of leadership, management, and decision-making is important to project success or failure.

The reason for implementing this study was to determine if projects succeed or fail because project management teams, project management organizations, and stakeholders do not implement strategies and decisions that are adaptive to influences that affect quality, performance, cost, scope, and schedule based on project managers perceptions and lived experiences. In summary, the motivation for undertaking this study was to explore project managers' perceptions and lived experiences of the factors that can cause projects to succeed or fail.

Chapter 1 introduces the research problem, the significance of the problem, and the assumptions associated with the problem. Chapter 1 also summarizes the objective, justifications, rationale, significance, and assumptions that formed the basis of this qualitative interpretative phenomenological study.

Overview

Typically, a manager plans, organizes, coordinates, and controls (Mintzberg, 1975). Generally, managers who oversee projects are called project managers. In

addition, projects are endeavors with a definite beginning, end, scope, and cost (Heagney, 2012; Kerzner, 2000; Project Management Institute Inc. [PMI], 2008; Wienclaw, 2014). Although managers and project managers share many of the aforementioned qualities, there are also many differences between general management and project management (Heagney, 2012).

General management deals with ongoing concerns without a definitive schedule, cost, or scope (Williams, 2011; PMI, 2008). In contrast, project management deals with a well-defined scope, schedule, and cost (PMI, 2008; Williams, 2011). Project management also includes planning, scheduling, and controlling integrated tasks in the best interest of the project's stakeholders such that objectives of the project are achieved successfully (Kerzner, 2000, 2006a). Therefore, a project manager supported by a team of subject matter experts is a project management team (Kerzner, 2000, 2006a).

Project-management team. The project management team concept is most often used in engineering and construction efforts, but more recently other industries such as IT, petroleum, and finance are adopting the project management concept (Kerzner, 2006a, 2006b). In addition, a project management team is a component of a project management organization (Kerzner, 2000, 2006a; PMI, 2008). A project management organization may have oversight over multiple related or unrelated projects or programs (Kerzner, 2006a; PMI, 2008).

A program is a set or group of projects associated to meet strategic requirements or for management control of related projects (Ferrell, 2010; Görög, 2011; PMI, 2008). Similarly, the project management team, the project manager, and project management organization are stakeholders with strategic implementation responsibility (Kerzner,

2006a; PMI, 2008). Generally, stakeholders are any population that may be affected adversely by or gain some benefit from a project or program (Kerzner, 2000, 2006a).

Stakeholders. Project stakeholders include customers, clients, owners, investors, and other interested members of the general population. Customers, clients, owners, and investors are considered key stakeholders because they are the usually the source of project funding (Kerzner, 2000, 2006a). Therefore, key stakeholders have a monetary or vested interest in project performance (Kerzner, 2000, 2006a). As a result, key stakeholders also define project requirements based on the needs of the organization's customers, owners, and investors (Kerzner, 2000; Mulcahy & Dietthelm, 2011). The project management organization, project management team, and key stakeholders jointly develop and refine a project's scope, cost, schedule, performance expectations, risk, and other critical factors (Mulcahy & Dietthelm, 2011).

Critical factors. Critical factors are major issues that a project manager and team must manage and control on a day-to-day bases to ensure project success (Divakar & Subramanian, 2009). Unpredictably, some critical issues go awry regardless of how well managed the plan is for controlling scope, cost, schedule, and performance (Kerzner, 2006b; Williams, 2011). If mishandled, critical factors can lead to project failure (Williams, 2011). Lastly, the purpose of this study was to identify issues encountered by a project management team from the project managers' point of view, lived experiences, and perceptions.

Background

The first use of the expression *project manager* can be traced to the 1930s in the chemical industry (Evensmo & Karlsen, 2005). In addition, many of the methods and

practices of project management in use today originated in the 1940s and 50s in agencies of the federal government that eventually became the United States Department of Defense (DOD) and the National Aeronautical and Space Administration (NASA) developmental programs (Evensmo & Karlsen, 2005). DOD adopted and codified Cost and Schedule Control Systems (CSCS or CS^2) during the 1960s because many of their projects were running over budget and behind schedule (Evensmo & Karlsen, 2005). The principles of CS^2 are still in use today and form the basis of earned value management requirements.

Scope, cost, and time. Anything of value has a cost. Resources, time, and material have value, and in turn have cost. Cost must be accurate and specific from the onset of a project (Mulcahy & Dietthelm, 2011). The scope of a project's work must be a clear and specific statement of what is agreed to by key stakeholders (Mulcahy & Dietthelm, 2011). Scope expressly defines the purpose, attributes, and functions of a project. Scope is a set of well-defined requirements that define the project's criteria for success. The scope of a project must be clear, well defined, and formally approved (Mulcahy & Dietthelm, 2011).

The process for developing a schedule is to deconstruct the scope and analyze it down to its lowest level, task or activity, of detail (Oren, 2009). Duration of each task is estimated and arranged in a logical sequence (PMI, 2008). Output from this process when overlaid with a calendar is a time-scaled model of project tasks, events, and deliverables. This model is a schedule (PMI, 2008). Resources can be assigned to each task to create a cost estimate. The schedule and cost estimate form the foundation for future cost management processes (PMI, 2008).

Project management process. A work breakdown structure (WBS) clarifies scope (PMI, 2008). The intersection and integration of scope, cost, and time constraints forms the basis of a work breakdown structure. A WBS is deconstructed to create work packages, cost accounts, and tasks (PMI, 2008). Tasks are sequenced and logically related; duration is assigned, and projected over time to establish starts and finishes for each. Managing the integration of scope, cost, and time (schedule) forms the basis of the project management process. Next, an integrated plan is created.

The next step in the development stage of the project management process is to conduct an analysis of the resulting integrated plan (PMI, 2008). After completing the analysis and deeming the scope, schedule, and cost acceptable, the project team creates a baseline of the schedule, scope, and cost estimates (PMI, 2008). The project team develops the baseline and submits it to key stakeholders. The stakeholders approve the cost, scope, and schedule baseline if it meets their requirements. Scope, cost, and schedule baselines become contractual requirements. Baselines are important tools used to monitor and control cost and schedule performance over time and to produce earned value management data, if required.

The concept of earned value management is known as one of the most important progress measurement tools by both the Project Management Institute (PMI) and International Project Management Association (IPMA) (Evensmo & Karlsen, 2005). It is difficult to earn value manage a project without a WBS, baseline of the project plan (schedule), statements of work (scope), and budget (cost) (Yosha, 2012). The Department of Defense (DOD), Department of Energy (DOE), and other federal agencies require the use of earned value management (EVM) for projects that exceed 20 million

dollars (American National Standard Electric Industries Alliance, 1998; U.S. Department of Defense, 2006, 2008; U.S. Department of Energy, 2011).

Change management. Requirements can change as a project progresses. Project managers manage, administer, and control cost, scope, schedule, and changes using systematic approaches as defined by Association for the Advancement of Cost Engineering (AACE), PMI, and other professional societies (Mersino, 2007). The process of managing changes on projects is known as change control or change management (PMI, 2008). Change management processes are invoked to modify the baseline to accommodate the changes to scope, schedule, and cost.

Project managers and stakeholders. Project managers are very good at resolving the technical challenges and problems that they face daily (Mersino, 2007). The manner and methods by which a project management team manages the juxtaposition of cost, scope, and schedule within the variant political, social, and technical environment can mean the difference between a failed project and a successful project (Schmieder-Ramirez & Mallette, 2007). Other specialized environments include legal, political, educational, physical, spiritual, and security (Schmieder-Ramirez & Mallette, 2007). Sometimes project managers stumble while managing specialized environments and soft skill areas of management (Mersino, 2007). PMI, AACE, and other professional societies do not address these soft skills areas specifically (Kerzner, 2006b; Mersino, 2007).

Project management professional (PMP) certification enables a manager to demonstrate that he/she has the necessary project related experience and can pass a multiple-choice examination (Mersino, 2007). However, certification does not guarantee

that a manager is an effective project manager (Kerzner, 2006b; Mersino, 2007). An effective project manager must be able to operate in a team environment, work well with others, and be nimble enough to handle the soft skills of leadership and management (Mersino, 2007).

The project management organization, project management team, and key stakeholders share responsibility for success or failure of a project (Williams, 2011). The project management organization, project management team, and stakeholders share objectives, but each has different underlying motivational drivers for successful conclusion of a project (William, 2011; Kerzner, 2006b). The drivers are sometimes in conflict, and this conflict can lead to cost overruns, schedule delays, work stoppages, or complete project failure. Conflict between the project management team and key stakeholders can adversely affect a project even though they share the same desire for a successful project outcome because they each have different motivational factors for their requirement and decisions (Kerzner, 2006b; Williams, 2011).

Emotional intelligence. A person aspiring to the ranks of management must possess or acquire a nuanced understanding of integrating human nature, emotional intelligence, and technology to achieve project objectives (Mersino, 2007). Emotional intelligence also informs the decision-making process (Clark, 2009; Mersino, 2007). In addition, emotional intelligence, along with a depth of lived experiences, establishes control points (locus of control) that balance and moderate action and performance (Clark, 2009; Mersino, 2007).

An internal locus of control refers to a belief that what happens is one's own doing, whereas possessing an external locus of control is a belief in luck or fate (Bateman

& Snell, 2007). Additionally, a good manager has the flexibility, capability, and internal control to handle diverse tasks and people (Mersino, 2007; Tessema, 2010). Lastly, a good manager has the skills to arrive at sound decisions at a rapid pace (Kerzner, 2006b; Mersino, 2007) while simultaneously managing constraints.

The proportional relationship of the triple constraints. Changing a constraint will cause a proportional change to the other constraints. For this reason, project managers employ standard business processes to manage the constraints (Evensmo & Karlsen, 2005; Wienclaw, 2014). Typically, these constraints are scope, cost, and schedule. Further, scope, cost, and schedule are collectively known as the triple constraints (Oren, 2009). Project managers should control the proportional relationships between the triple constraints (PMI, 2008). Figure 1 represents the proportional relationships between the triple constraints.

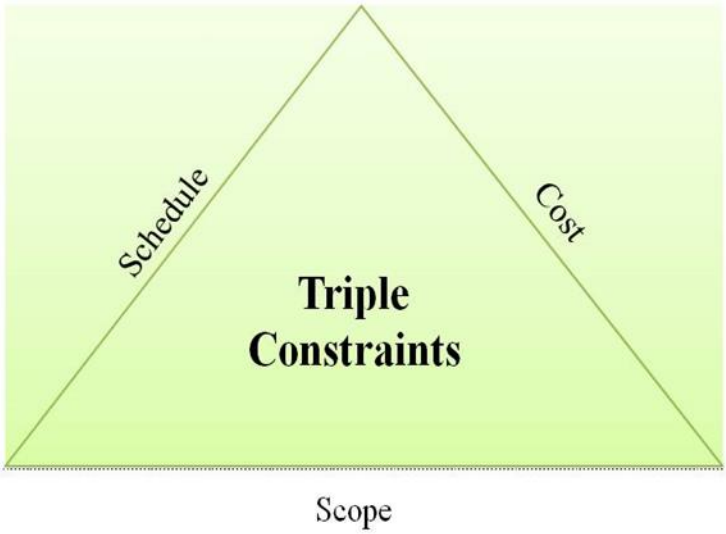

Figure 1. Triple constraints.

For example, one factor affecting project success or failure is when the project sponsor, a key stakeholder, insists that a project finish by a definite time, within a certain budget, or within a certain scope while achieving specific performance and quality

expectations. Forcing a completion time and budget will cause a proportional change in scope in terms of either requirements or functionality. Further, the resulting proportional change to one or the other constraints often comes as a revelation to the project sponsor or key stakeholder (Lewis, 2007; Williams, 2011).

Project constraints. Closely associated with the triple constraints is performance and quality (Heagney, 2012; Lewis, 2007; Oren, 2009). The triple constraints, performance, and quality are typically referred to as project constraints (Williams, 2011). The project constraints affect each other in a fashion similar to the triple constraints (Heagney, 2012; Lewis, 2007; Oren, 2009).

Project managers may succeed at addressing the triple constraints, but fail to address performance and quality. As a result, performance and quality may suffer unless efforts are made to address performance and quality as well as the triple constraints. Each element of cost, quality, performance, time, and scope is a function of the other and a change to one will affect the other and the entire project (Heagney, 2012).

Each of the project constraints can be difficult to manage separately (Lewis, 2007). Managing the project constraints and their relationship simultaneously is even more complex and difficult (Lewis, 2007; Williams, 2011). Increased focus on one or more project constraints can lead to reduced focus on one or more of the other project constraints (Lewis, 2007). Larger projects usually have a subject matter expert dedicated to providing focused oversight to each project constraint (Williams, 2011). Figure 2 illustrates the proportional relationship among cost, schedule, and scope, quality, and performance.

Figure 2. Relationship between scope, schedule, cost, performance, and quality.

Project success or failure. Project managers have a common set of tools or processes to maneuver strategically through the political and technical environments of a typical project (Williams, 2011). Some tools used to analyze projects include earned value management, critical path method, critical chain method, agile method, and common sense gained through lived experiences. Not all project managers have the lived experience, technical expertise, or emotional intelligence to deal with the technical, political, and social elements they might encounter (Mersino, 2007; Shenhar & Dvir, 2007). Goleman (1998) held, "We can be effective only when the two systems—our emotional brain and our thinking brain—work together" (p. 21). A strong team can overcome most problems, but many factors can affect the project constraints, and even a strong project team cannot overcome them all (Mersino, 2007; Shenhar & Dvir, 2007).

Many projects succumb to failure because the project management team does not properly manage the project constraints and stakeholder expectations either

simultaneously or separately because of the social and political environment within which they operate (Lewis, 2007; Williams, 2011). A project that does not finish on time or within budget does not necessarily constitute a failed project as long as the project team and stakeholders agree to the need for and cause of the change (Mersino, 2007; Shenhar & Dvir, 2007).

A definition of project failure is the inability of a project management team to achieve an acceptable level of completion compliance by meeting projects requirements as agreed to by the project stakeholders (Toader, Brad, Adamov, Marin, & Moisa, 2010). Another definition of project failure is when deliverables do not provide the expected value to stakeholders. An example of project success is a project that delivers intended values to stakeholders (Shenhar & Dvir, 2007; Williams, 2011).

In summary, project management teams led by project managers encounter many challenges or factors that affect policy, procedures, politics, personnel, performance, timing, cost, planning, and quality (Lewis, 2007). Each decision can cause schedule delay, create cost overruns, and change the scope of a project (Lewis, 2007). Lastly, the factors that result in a project's success or failure are a derivative of the stakeholders' perspective (Williams, 2011).

Problem Statement

Projects are failing at a high rate (Shenhar & Dvir, 2007). Further, project failures have a high economic cost. For example, companies in the United States spend more than $250 billion on average on software development nationally (The Standish Group, 1995). The Standish Group (1995) also estimated that $81 billion was lost on canceled or failed projects in 1995.

There is a large variation in project failure rates because many project failures are not reported or under-reported (Heagney, 2012). In addition, even the lowest variations in these estimates of project failures are unacceptable because of the high cost. Lastly, the aforementioned estimates suggest that a high potential for project failure is unavoidable.

Problem statement background. Project managers confront many problems (primary factors) (Shenhar & Dvir, 2007). Additionally, the problems (primary factors) are the result of internal and external influences, which can detract from a successful conclusion in an unpredictable fashion. Further, the complexity and the subjectivity of project decision-making are unpredictable because internal and external environmental influences are unpredictable, and each can lead to project success or failure (Shenhar & Dvir, 2007; Williams, 2011).

However, the project manager must render the best decision possible within time constraints and often under high pressure conditions because hesitating can lead to project delays, cost overruns, stoppage, or worst, failure (Nitschke, 2013). Further, a project manager must have readily available access to continually updated information available from the project management team of experts (Nitschke, 2013). Another source of apprehension and conflict on a project is the different objectives, needs, and requirements of the project management team, project management organization, and stakeholders (Williams, 2011).

This study identified issues or factors that can lead to project success or failure based on the perceptions and the lived experiences of project managers. Specifically, the results of this study suggest corrective actions that may enable project success based on

the perceptions and the lived experiences of project managers. In summary, numerous studies have focused on identifying critical factors of project success or failure, but few have developed techniques for implementing successful project performance based on lived experiences (Menches & Hanna, 2006).

General problem. The general problem of project failure is a concern because of the documented high rate of failure and the resulting high economic impact thereof (Shenhar & Dvir, 2007). Typically, projects are well-defined and controlled efforts, unlike many operations, production, and maintenance initiatives, but projects appear to be harder to manage, implement, and control (Shenhar & Dvir, 2007; Williams, 2011). In addition, the general problems that project managers invariably encounter are typical of similarly complex endeavors, which comprise many dissimilar parts and uncoordinated activities (Williams, 2011).

Specific problem. The specific problem is that projects are failing at a high rate and current project management processes do not seem to alleviate or improve the success rate of projects. As stated previously, 40% of construction projects fail and 70% of IT projects fail (Al-Khouri, 2012; Ferrell, 2010; Heagney, 2012; Shenhar & Dvir, 2007). Also, the Standish Group (1995) research company periodically issues a study called the CHAOS report, which documents project failure rates. The Standish Group stated that only 18% of all information management projects finished on time, within quality parameters, and on budget.

Additionally, over 53% of projects are partial failures or projects completed with budgets overruns, missed deadlines, sometimes without full functionalities, and 29% are abandoned or canceled completely (Heagney, 2012; Toader et al., 2010). Currently, there

are no assured methods of obtaining project success and avoiding project failure (Shenhar & Dvir, 2007; Williams, 2011). Last, a successfully implemented project seems to be the result of luck as much as skill, know-how, and talent.

Purpose Statement

The purpose of this qualitative interpretative phenomenological study was to examine project managers' perceptions of and lived experiences with the primary factors contributing to success or failure of projects. Another purpose of this study was to provide project managers the opportunity to give an unqualified assessment of their lived experiences of the factors contributing to project success or failure instead of a priori of categories to fit their opinions. Specifically, the aim of this study included understanding each individual's account and experience, and the shared meaning amongst project managers, as their decisions contribute to the success or failure of projects.

Justification and Rationale

Quantitative research is a methodical and empirical examination of phenomena using statistical procedures, as opposed to qualitative interpretative phenomenological studies, which entail a detailed account and analysis of understanding of lived experiences (Auerbach & Silverstein, 2003; Creswell, 2003; Neuman, 2005; Willis, 2007). Phenomenology, ethnography, grounded theory, and case studies are major qualitative methods of research (Auerbach & Silverstein, 2003; Creswell, 2003; Neuman, 2005; Willis, 2007).

Ethnography is the unearthing and description of the beliefs of a group of people (Auerbach & Silverstein, 2003; Criswell, 2003). Further, grounded theory is the creation of an inductive model supported by empirical data (Auerbach & Silverstein, 2003;

Creswell, 2003). Also a case study is a research method involving investigation of a individual or an organized group (Neuman, 2005; Willis, 2007). The case study, ethnography, and grounded theory approaches did not seem appropriate for establishing project management perceptions and lived experiences (Neuman, 2005; Willis, 2007).

I selected the qualitative interpretative phenomenological approach because I desired to solicit recommendations based on lived experiences in a context that may lead to the development of improved project management business processes. I also chose the phenomenology method because this method is used to develop a description of how individuals experience a phenomenon (Auerbach & Silverstein, 2003; Creswell, 2003). Furthermore, a qualitative interpretative phenomenological study is appropriate for developing an understanding of phenomenon based on lived experiences and its context, because during this type of study participants are free to choose aspects of the project success or failure phenomenon for commentary (Auerbach & Silverstein, 2003; Creswell, 2003; Neuman, 2005; Willis, 2007). The qualitative interpretative phenomenological study offered a method to obtain a descriptive representation of authentic project manager perspectives, context, and experiences as these phenomena relate to significant personal experiences.

My objective in using this approach was to determine if there is a relationship between project management professional certification, experience, and project success or failure based on and in context of project managers' perceptions and their lived experiences. In summary, a phenomenological study was deemed appropriate and significant because this approach allows a researcher to delve deeply into each participant's perspective and lived experiences to understand the context of each

participant's points of view (Christensen, Johnson, & Turner, 2010). Finally, my rationale for using the qualitative interpretative phenomenological method to conduct this research was to create understanding, discern meaning, and interpret the context of the lived experiences and perceptions of project managers (Auerbach & Silverstein, 2003; Neuman, 2005; Willis, 2007).

Nature of the Study

The research approach for this study was the interpretive phenomenology method. Data were collected in three phases using open-ended questions. Creswell (2009) indicated that qualitative data consists of information gathered by researchers through interviews using open-ended questions. In each phase, demographic and biographical data were also collected.

The phases consisted of a pilot study, an open-ended questionnaire, and open-ended interviews using a dialogue approach. The pilot study was used to validate the questionnaire used for the follow-up phases. The second phase involved a self-administered questionnaire. The last phase of this study included both the self-administered questionnaire and interviews to address unresolved issues.

During each phase, the participants provided answers using their own words based on their lived experiences. The interviews were transcribed. I also explored the data for common themes, meanings, and context using method triangulation. In summary, the interpretive phenomenology approach facilitated the investigation of the project management lived experiences of the project success or failure phenomenon.

Sample

The projected sampling of participants for this study was between 12 and 20. Polit and Beck (2004) stated, "There are no criteria or rules for sample size in qualitative research" (p. 308). Additionally, the sample size of qualitative studies is typically based on the information needed but can increase until data saturation occurs (Polit & Beck, 2004).

Creswell (2003) recommended between five and 25 participants for phenomenological studies. Baker and Edwards (2012) suggested that between 12 and 20 is practical for planning and structuring interviews, and more than that is impractical given customary time constraints. In summary, the sample size between 12 and 20 was chosen based on the interpretive phenomenology methodology and the focus on the phenomenon of project success or failure.

Qualitative Research Question

This study explored the following research question:

- How do project managers' perceive the factors contributing to success or failure rates of projects based on their lived experiences?

It can be assumed that the factors contributing to success or failure of projects may or may not depend on the project management team composition and its relationship to project stakeholders. Also, a project manager's experience with the factors contributing to success or failure of projects may or may not be consistent from project to project.

Conceptual Framework

It is easy to recognize a failed project after the effort is complete. However, it is not easy to acknowledge or recognized trends or indicators leading toward failure

(Shenhar & Dvir, 2007; Williams, 2011). Also, it is critical that project management teams, project management organization, and stakeholders be able to recognize negative trends, leading indicators, and performance issues leading toward failure before failure is imminent (Shenhar & Dvir, 2007; Williams, 2011). Further, project management teams, project management organizations, and stakeholders must create and implement proactive and responsive strategies to resolve internal and external environmental demands that would tend to cause project failure (Shenhar & Dvir, 2007; Williams, 2011). Furthermore, creating and implementing proactive and responsive strategies require qualifications, certification, or experience.

PMI (2008) requires a project manager seeking project management professional certification to hold a bachelor's degree or an international equivalent, have at least 3 year of experience managing projects with 4,500 hours leading projects, and have 35 hours of project management related training. Optionally, a project manager can hold a high school diploma or its international equivalent, have at least 5 years of experience managing projects or 7,500 hours project leadership, and have 35 hours of project management related training (PMI, 2008). Additionally, the project manager must pass a 200-question project management professional certification examination in 3 hours or less (PMI, 2008).

Meeting the PMI criteria entitles a project manager to use the project management professional designation (PMI, 2008). Table 1 illustrates the PMI criteria for obtaining project management professional (PMP) certification as described previously. Accordingly, project managers are not considered qualified to become a PMP until they

meet or exceed the qualifications listed in Table 1. Lastly, the participants in this study are also categorized by the PMI experience criteria displayed in Table 1.

Table 1

Certification Criteria for PMP

Education	Experience	Training
HS Diploma or equivalent	Five years or 7,500 hours of project leadership experience	35 hours of training
BS or equivalent	Three years or 4,500 hours of leading projects experience	35 hours of training

Project management teams, project management organizations, and stakeholders must implement innovative strategies that are adaptive to influences that can affect quality, performance, cost, scope, and schedule (Shenhar & Dvir, 2007; Williams, 2011). In addition, early identification of the primary factors that contribute to success or failure of projects may allow the implementation of project management processes that can enable successful implementation while reducing or eliminating the subjectivity of spontaneous and on the fly decision-making (Williams, 2011). This is especially important given the fact that the proven trend of high project failure indicates that current project management processes are not alleviating the problem. Finally, the benefit or gain to projects is the ability to pre-stage selected workable solutions prior to the trend toward failure is unavoidable (Williams, 2011).

Research Methods

The technique used in this study consisted of a method triangulation analysis of data from a pilot study, a self-administered questionnaire, and open-ended interviews. First, the responses from participants were considered based on work experience, education, age, and other data based on a demographic and biographical questionnaire.

Then, I compiled, compared, and interpreted responses from each of these phases to determine the primary themes participants perceived contributed to project success or failure based on their lived experiences.

Research design. This study utilized three phases of data collection. Each phase solicited demographic and biographical data. The demographic and biographical questionnaire established participants' experience, certification, project related job roles (such as project manager, program manager, project control manager, or general manager), and other pertinent information. In summary, the phases of data collection were a pilot study, an open-ended questionnaire, and one-on-one interviews using a dialogue approach.

The purpose of the pilot study phase was to validate the questionnaire, provided initial data, solicited questions, and identify other topics to gather information about project managers' perceptions and lived experiences of the primary factors affecting project success or failure. The primary purpose of the pilot study was to eliminate vague or misleading questions and topics. First, the draft questionnaire was reviewed and validated by the pilot study participants. The draft questionnaire is in Appendix G. Last, the pilot study allowed the researcher to finalize the development of the draft questions and topics for the follow-up phases.

The second phase included a self-administered questionnaire using the validated questionnaire. Next, the self-administered questionnaire (second phase) was followed by a one-one interview phase. Also, the one-on-one interview phase used the same open-ended questionnaire validated by the pilot study. A script or procedure documenting the

interview process is found in Appendix J. In summary, the participants in each phase were invited to contribute to the follow-up phases if they chose to or agreed to do so.

Significance of the Study

The Standish Group's (1995) report and subsequent reports document a high rate of project failure. Many researchers have tried, but no one has established definitive or conclusive reasons for projects failure and success (Shenhar & Dvir, 2007; Williams, 2011). As a result, there is a need to identify primary factors that contribute to success or failure of projects because of the high economic impact thereof.

Identifying consistent and definitive factors and actions may allow project managers to develop strategies and tactics that will decrease the potential for project failure and increase the likelihood of project success (Williams, 2011). Also, identifying consistent and definitive factors and actions may free the project manager to deal with other unpredictable events unique to his or her project. Further, decreasing project failures will reduce and possibly eliminate the costly economic impact to stakeholders when projects fail (The Standish Group, 1985).

The results of this study may increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures. Last, this study presupposes that there are several primary factors that when addressed appropriately and with timeliness can lead to a higher instance of project success.

Contribution to Knowledge

Analysis of the results of this study enhanced project and program management knowledge by assessing the reasons projects fail or succeed based on project managers'

perceptions and lived experiences. Further, the analysis of the data concluded with recommendations that address the primary factors that affect a project's success or failure based on project managers' perception. Additionally, analysis of the data enhanced the existing project management body of knowledge by suggesting methods for identifying projects trending toward failure and making recommendations for corrective actions that when implemented properly may prevent project failure.

The analysis of the data resulted in new, improved, or additional recommended methods for the PMI, IPMA, and AACE to consider in their approach to project management. Also, the analysis of the data contributed to the development of improved business processes, corrective actions, and protocols that can be applied to each project phase, which in turn will reduce the probability of project failure, if properly implemented. Lastly, analysis of the data provided new insights into existing project management problems.

Definitions

The following section is an alphabetical listing of terms that are germane to this study. Additionally, some of the terms, while common, may have a specific technical meaning or use relative to the project management profession and are included for clarification. Therefore, the intent of listing the following terms is to provide definition, clarification, and context.

Cost: Cost is the value of resources required to implement a project. Cost is the value of money used to produce, procure, and implement a project (PMI, 2008).

Control Account: A control account is a point of integration among cost, scope, and schedule, used to compare earned valve to the performance baseline (PMI, 2008).

Critical Chain Method: A project scheduling method that takes into consideration resources (PMI, 2008).

Critical Path: The longest series of tasks in a project schedule or timeline (PMI, 2008).

Critical Path Method: Process of analyzing issues affecting the longest series of tasks in a project schedule or timeline (PMI, 2008).

Decision tree: An illustration used to depict decisions and the implications of alternatives (PMI, 2008).

Earned Valve Management (EVM): EVM compares the baseline plan to actual cost and schedule performance (PMI, 2008).

Emotional Intelligence (EI): The talent to recognize ones owns feelings and those of others for inspiring, leading, and managing oneself and others (Clark, 2009).

PRINCE2 (acronym for PRojects IN Controlled Environments, version 2): A project management methodology developed by the United Kingdom government and used by both government and private sector. PRINCE2 also refers to the training, accreditation, and certification practitioners of this methodology.(Karamitsos, Apostolopoulos, & Al Bugami (2010).

Project: A short-term effort started to create something unique. A project has a well-defined scope, cost, beginning, and end (PMI, 2008).

Project constraints: The triple constraints (scope, schedule, cost) in addition to performance and quality (Williams, 2011).

Project management: The management and control of project activities to meet or surpass sponsor requirements (PMI, 2008). Project management is a set of methods and techniques used to develop and control projects (Gokaydin, 2007).

Project Management Organization: A project management organization is a centralized organization with the purpose of managing projects by establishing policies, methods, and templates, and staffing the management function of individual projects (Mulcahy & Dietthelm, 2011).

Project Management institute (PMI): PMI is a nonprofit technical society dedicated to establishing project management standards and certifications (PMI, 2008).

Project Management Professional (PMP): PMP certification, established in 1984, is one of several certifications offered by the PMI for project managers (Gokaydin (2007).

Project manager (PM): The project manager is the most senior manager on a project who retains final project level decision-making authority.

Project Management Team: A project management team is a team of subject matter experts organized to support a project.

Project failure: Project failure occurs when the expected outcome or deliverable does not meet the key stakeholders' agreed upon requirements (PMI, 2008).

Project success: Completing the implementation of a temporary endeavor that meets the requirements and expectations of the project's stakeholders, project management team, and project management organization (PMI, 2008).

RACI: RACI is an acronym derived from the terms Responsible, Accountable, Consulted, and Informed. The RACI responsibility assignment matrix (RAM) is used to clarify roles and responsibilities in cross-functional projects or processes.

Scope: A description of features and functions of products, services, or results. Products, services, and results are deliverables. Deliverables are represented as milestones in a schedule.

Schedule: A graphical representation of a projects expected tasks, milestones, deliverables, and dependencies. A schedule is also called a Gantt chart (PMI, 2008).

Scheduling: An iterative process of developing, monitoring, and controlling a project plan (PMI, 2008).

Six sigma: A quality improvement process, developed by Motorola in 1986, used to identify and remove causes of defects (Kerzner, 2001, 2004).

Stakeholder: A group or individual affected by or possessing an interest in a project. Stakeholders include clients, senior management, project team members, customers, and vendors (PMI, 2008).

Triple constraints: Scope, cost, and schedule (Oren, 2009).

Work Breakdown Structure (WBS): A tiered organization of tasks and products, services, or results (PMI, 2008). The WBS organizes and defines all the work to be completed in manageable pieces on the basis of need, deliverables, or milestones.

Work Package: A work package is the lowest element of a WBS. A work package describes the scope of an activity to be performed (PMI, 2008).

Assumptions

Qualitative research has as its fundamental assumptions the types of data most useful to collect, which also implies a different approach to analyzing the collected data (Neuman, 2005; Willis, 2007). The researcher assumed that all participants had worked on projects in some leadership or decision-making capacity. Furthermore, it was also assumed that participants would respond to each question based on their own firsthand knowledge and lived experience base. Lastly, I assumed that project managers would respond in writing with sufficient, in-depth, and well thought-out responses that would support a thorough analysis of project managers' lived experiences.

I assumed there would be a minimum of 12 to 20 certified, uncertified, and experienced project managers in the general population to produce a representative sample of participants that would be willing to take at least 60 minutes to complete the questionnaire. I also assumed that project management professionals would deem this study important enough to fully address each topic as completely as possible. Hence, the basis for these assumptions is my expectation that project managers would altruistically agree to support this study by contributing time and effort to improve the success rates of projects and in turn improve the project management profession. Finally, success of the research project was dependent upon the availability and willingness of project managers to participate in a timely manner.

Limitations

The results of this study have applications for profit and nonprofit businesses and organizations trending toward implementing project management processes. Additionally, this study examined the perceptions and lived experiences of project

management professionals and non-project management professionals or uncertified project managers and members (and nonmembers) of AACE, IPMA, and PMI.

The study was not intended to be industry specific, but most of the data collected was expected to come from project managers who specialize in IT or defense related projects because of my physical proximity to the Washington DC defense and intelligence community. Furthermore, this study was limited to industrialized counties that implement general project management standards as prescribed by AACE, IPMA, and PMI. Also, this study was inclusive of but not limited to general project management practices supported by AACE, IPMA, and PMI.

Participants in the study may have recommended other participants to complete the questionnaire. Moreover, participants' qualifications were established via a demographic and biographical questionnaire. Finally, participants' data were discarded if they did not meet minimal education, experience, or certifications requirements, as seen in Table 1 (page 19) and Table 2 (page 82).

Delimitations

The intended focus of this study was the metropolitan Washington, DC area. Also, it was expected that study participants would come from the Baltimore, Baltimore County, Silver Spring, Montgomery County, and Washington, DC PMI sections or AACE chapters (both membership and nonmembers). Additionally, it was expected that participants would also include other project management leaders in the metropolitan Washington DC.

Participation from the metropolitan Washington, DC area was not as high as originally expected. However, a lack of metropolitan Washington, DC participation did

not negatively affect this study because the advance use of the LinkedIn Professional Networking Site allowed greater diversity of participants and participation. Instead, this resulted in increased participation from members of the IPMA as well as non-local PMI members.

Participants from outside the metropolitan Washington, DC area were not excluded. Personal information of the participants was not a part of the final analysis beyond general demographic and biographical descriptions. Additionally, company name, project name, or project location were not used or endorsed in the final analysis. Finally, the names of participants' coworkers, work location, family, and friends were not used as a part of the study.

Conclusion

Evensmo and Karlsen (2005) said, "Projects are unique undertakings that involve dexterity in balancing time, cost, and scope along with stakeholder needs and expectations" (p. 1). Moreover, a project decision tree is complex, and time does not always permit a project manager to wait for every piece of information required to make a decision (Williams, 2011). Additionally, project manager must sometimes make rapid decisions, and the result may be good or bad; for some, this reason alone justifies the high project failure rates (Williams, 2011).

Project success or failure can be ambiguous because the interpretation of success or failure of a project is dependent upon the perspective and objective of the evaluator. Also, the determination of a project's success or failure usually comes once the project has come to completion or is nearing completion. After this point, it is too late to prevent project failure and tremendous economic loss by the stakeholders. Further, determination

of whether a project is trending toward failure as early as possible is important. For that reason, a project manager should start mitigation processes immediately after the proverbial early warning bells ring. Critical factors or issues are those early warning bells.

If a project manager recognizes that critical factors or issues are introducing risk and initiates corrective action early in a project's life cycle, it is more likely to increase the potential for a successful project outcome. For that reason, a project manager needs to be aware of those early warning signs or critical factors that can be red flags that the project is not going according to plan (Nitschke, 2013).

It is vital to identify, monitor, manage, and communicate the primary issues or factors that contribute to success or failure as early as possible in a project's life cycle so that course corrections can minimize the potential for failure (Nitschke, 2013; Williams, 2011). Thus, the goal of this study was to understand causes and effects of project failure and success, as well as to identify corrective actions that must be taken before the critical point when project failure is imminent, based on lived experience and project managers' perceptions.

AACE, IPMA, and PMI are the leading educational and certification proponents establishing project management and cost engineering standards for education and certifications. AACE, IPMA, and PMI also provide standard business process and administrative techniques for project management and cost engineering. Furthermore, AACE, IPMA, and PMI provide an administrative structure for success along with the administrative tools required to move from project initiation to project closeout, but something is missing from the project management consciousness. The challenge of

AACE, IPMA, and PMI is to correct haphazardly applied method by providing professionalized business processes and guidance through their formal certification programs. However, AACE, IPMA, and PMI do a very good job of providing training on managerial, technical, and administrative techniques for managing projects.

The dilemma is that project success requires more than a good manager, technician, or administrator. In addition, project success requires innate or acquired leadership abilities that may only be gained through lived experiences. Also, projects do not fail people; people fail projects (McCormick, 2005). Finally, project managers must find ways to succeed.

Summary

Chapter 1 introduced the concept that projects are failing at a disproportionately high rate. Chapter 1 also introduced the research problem, the significance of the problem, and the assumptions associated with the problem. In addition, Chapter 1 identified the objective of this qualitative interpretative phenomenological as determining primary factors or issues contributing to success or failure of projects from the perspective of experienced, inexperienced, uncertified, and certified project managers' lived experiences.

Chapter 2 presents a review of literature pertaining to the many factors or issues contributing to project success or failure. Also, the literature review offers a substantiation that no previous study has established the primary factors that contribute to project success or failure from a project manager, program manager, or project management organization's perspective based on lived experiences using a qualitative interpretative phenomenological approach. Chapter 2 also states the major conclusions,

findings, and procedural issues related to the gap in the knowledge identified in prior studies, articles, books, dissertations, and other pertinent literature.

Chapter 3 is a detailed description of the participants, research design, research method, and analysis tools. The objective of Chapter 3 is to also define repeatable methods and analysis tools for a qualitative interpretative phenomenological study of this nature. Further it contains a full description of the intended participants, their location, the location of the study, research instrumentation (if any), research procedures, the data collection process, permissions, ethical considerations, data processing, analysis methods, and study validity. Chapter 3 also contains the population sample size determination method and justification. Copies of all study documents can be found in in Appendices A, B, C, D, E, F, G, H, I, and J.

Chapter 4 presents a summary of the purpose and problem, as well as the data collection process. Chapter 4 also summarizes the sampling method, and research design methodology. In addition, Chapter 4 offers key demographic and biographical data of the participants' experience, education, and PMP certifications illustrated using tables. Lastly, Chapter 4 includes the results of the research and highlights areas of significance to the research problem.

Chapter 5 is an analysis of the findings, along with recommendations for future research. Chapter 5 also summarizes the research purpose and problem. Additionally, Chapter 5 summarizes the data collection methods, procedures, and approach. Finally, Chapter 5 documents additional gaps in knowledge.

Chapter 2

Review of Literature

I reviewed literature from current books, peer-reviewed journals, articles, studies, and research documents exploring the relationship between project failure and environmental conditions that may affect strategies leading to project success. The literature reviewed identified many factors that contribute to projects' success or failure. Generally, these studies, books, and articles indicate that project success is attainable using standard budget and schedule monitoring techniques, which contradicts the findings of other studies that document unacceptable high project failure rates.

The literature reviewed indicate that scope control, experienced project manager staff, communication, and numerous other project performance issues can contribute to project success or failure. However, no literature reviewed substantiates the factors or issues that contribute to project success or failure based on the perceptions of project managers and their lived experiences of the phenomena. This research will explore the above-mentioned gap in knowledge for the reasons of project success or failure.

Purpose of the Research

In brief, the purpose of this interpretative qualitative phenomenological study was to examine project managers' perceptions of the factors contributing to success or failure rates of projects based on lived experiences. With this purpose in mind, I pursued an understanding of why projects fail or succeed based on the perceptions of project managers in the context of their lived experience.

In addition, the purpose of this chapter is to examine the documented phenomenon of project failure and the manner in which critical factors interact, impede,

and relate to how the knowledge, experience, competence, and abilities and project managers of various levels of management and leadership expertise may create or prevent project success. Specifically, I reviewed numerous articles, dissertations, and books that identified several primary critical factors that influence success or failure of projects, but none used lived experiences of project managers as a basis or context.

A project manager bears primary responsibility for the project's success (PMI, 2008; Williams, 2011). Also, project managers recognize that many critical factors are not fully within their control but still influence projects' success or failure (PMI, 2008; Williams, 2011). Critical factors are project issues, which require positive attention, action, and results to achieve successful project outcomes (Zwikael & Globerson, 2006). In addition, numerous studies reviewed identified some critical factors that can yield negative or positive outcomes for a project, but none conclusively addressed the reasons for the reoccurrence of critical factors and how they relate to the root causes of project success or failure.

Project managers are also unique in their skills, knowledge, experience, abilities, competence, and the manner in which they approach project management. Further, a unique feature of projects is that no two projects are the same, no matter how alike they may seem (Williams, 2011). That is to say, location, funding, stakeholders, political, social, and other environmental conditions play a role in making similar projects unique (Williams, 2011).

Setting aside the differences and commonalities, many projects continue to fail at an astoundingly high rate, while others succeed at a correspondingly low rate (Shenhar & Dvir, 2007; Williams, 2011). Furthermore, current literature has documented many

examples of how critical factors contribute to project success or failure, but none has established methods, processes, or techniques regarding how to overcome these issues based on the lived experience and perceptions described by project managers. Finally, none of the material reviewed expressed how project managers understand, make sense of, and use their lived experiences to manage these issues.

Introduction

Projects are becoming increasingly more complex (Oren, 2009; Shenhar & Dvir, 2007; Smith, 2012). Also, the political and social environments in which projects exist and coexist, as well as technology, are also becoming increasingly more complex (Oren, 2009). Moreover, despite increased business process rigor—such as Earned Value Management, Critical Chain, Agile, Critical Path Method, and others, recommended by organizations like the PMI and AACE—projects continue to fail at an unacceptability high rates (Shenhar & Dvir, 2007).

No one can debate that project managers should be good at managing people, communication, and many other so-called soft skills. For instance, the best project managers have high levels of emotional intelligence, leadership skills, and management skills. They also use their skills to manage, lead, and motivate people (Clark, 2009; Mersino, 2007). In many cases, project management is an unintentional career choice. Turk (2007) said, "Project Management has even been called the 'accidental profession' because many people just stumble into it" (p. 22). Further, most people do not set out to become project managers. Consequentially, many project managers still learn their initial skills through on-the-job training or through trial and error in the workplace (lived experiences).

The project manager does not need to be an expert in the technical aspects of the project but is supported by staff who are trusted to deliver the right information in a timely manner to ensure effective decision-making policy. In addition, the subjectivity of some decisions is a source of apprehension and can be source of conflict among the project management team, project management organization, and stakeholders. By all means, the primary job of a project manager is to manage project constraints (scope, schedule, cost, quality, and performance) (Oren, 2009; Shenhar & Dvir, 2007; Smith, 2012).

Without a doubt, the project manager is a primary factor affecting project success or failure (Mulcahy & Dietthelm, 2011). Therefore, the project constraints contribute directly and indirectly to project success or failure when not managed properly by the project manager, project management organization, and key stakeholders. As a result, this study sought to understand how critical factors influence project constraints and lead to project success or failure.

Project management has as its roots foundational management philosophies, which include scientific, administrative, bureaucracy, and human relations management approaches, all of which were developed during the industrialization revolution of the 1800s. Consequently, the historical perspectives and philosophies of the major thought leaders in the areas of management and leadership are important because the development of formalized project management processes is the result of their musings (Williams, 2011).

Taylorism provided the management theories stimulus, but many individuals influenced the spread of management theories, which grew out of a need to improve

business practices to accommodate technological advancements. Further, the historic management theories reflect the times in which they were developed and form a strong basis of modern day project management practices. Many confuse management with leadership (J. Wren, 1995), although this is not to say that a good manager cannot be a good leader or vice versa.

Interest in leadership has existed since the beginning of recorded history, but the study of leadership as a discipline started in the 19th century (Yukl, 2006). Since that time, many theories have been popular and many theories have gone in and out of vogue. Subsequently, there is considerable confusion between leadership and management because of the lack of understanding of what leadership is and what leaders do (Yukl, 2006).

Current literature indicates that project managers should excel at communication, and a lack of communication is also a critical factor that can hinder project success (Bansel, 2009). Currently, a major focus of management and leadership theory is quality management and control (Bansal, 2009). Poor quality causes a loss of productivity, increased cost for of rework or repair, loss of market share, and ultimately loss of business (Jha & Iyer, 2006). The following sections review literature related to project management from a historical perspective, trace management and leadership theories from their earliest concepts, and close with an overview of current findings.

Historical Overview

Project management as it is known today developed from the defense programs for missiles, aircrafts, ship building, and facilties of the 1940s and 50s (Lenfle & Loch, 2009, 2010). During this time, many of the tools of cost estimating and cost management

in use today emerged (Lenfle & Loch, 2009). In 1956, American Association of Cost Engineers (currently known as the AACE International) was formed by managers performing project management, planning, scheduling, cost estimating, cost control, and schedule control (Amos, 2005).

The International Project Management Association (IPMA), founded in 1967 in Vienna, developed the IPMA Competence Baseline (ICB) (Toljaga-Nikolić, Obradović, & Mihić, & 2011), which is focused on standardizing project manager knowledge and also considers experience, interpersonal skills, and competence (Toljaga-Nikolić et al., 2011). The goal of the PMI, formed in 1969, is to formalize standard tools and techniques for project management (Ghosh, Forrest, DiNetta, Wolfe, & Lambert, 2012; Toljaga-Nikolić et al., 2011). Both IPMA and PMI recognize common elements of project management for a range of projects from software development to construction.

PMI initiated development of a white paper called "A Guide to the Project Management Body of Knowledge" in 1981, which was ultimately issued in 1987 (Ghosh et al., 2012). Later, the Project Management Body of Knowledge developed into a document that defined the standards for the project management profession (PMI, 2008). Currently, IPMA and PMI work jointly to develop and maintain project management standards.

Current project time and cost management analysis techniques and tools, such as critical path method and Project Evaluation and Review Technique (PERT), trace their beginnings to the early DOD and NASA programs of the 1950s, 60s, and 70s (Lenfle & Loch, 2009, 2010; Smith, 2012). Beyond these specific techniques and tools, the foundations and early forms of project management originate before written history, as

evidenced by the massive construction projects undertaken by the ancients (Wu, 2011). Additionally, much of human history and the history of management and leadership predates written language or other documentation.

Some of the earliest known written documentation of management and leadership techniques includes Sun Tzu's *The Art of War*, which originated during the 6th century BC, Chanakya's *Arthashastra* (300BC), and Niccolò Machiavelli's, *The Prince*, which was written in 1513 (D. Wren, 2004). For example, Tzu (2012), referring to the use of military resources, stated, "By employing the officers of his army without discrimination, through ignorance of the military principle of adaptation to circumstances. This shakes the confidence of the solders" (p. 36). A review of the historic developments in management and leadership reveals that the Greeks advocated a scientific approach to work between 350 BC and 400 BC, and the Chinese used management functions, which included planning, organizing, leading, and controlling around 1100 BC (D. Wren, 2004).

The Romans took a decentralized approach to management of their empire (D. Wren, 2004). Eventually, the Romans conquered the decaying Greek civilization, which ultimately gave rise to the Roman Catholic Church and centralization of doctrine and authority (D. Wren, 2004). During medieval times, the Venetians standardized manufacturing processes and implemented assembly lines, warehousing, and systems to control inventory (Bateman & Snell, 2007).

Slavery became too expensive during the Roman times because of upkeep maintenance cost (D. Wren, 2004). Additionally, the maintenance cost of slavery is the primary reason for the development of the system of feudalism (D. Wren, 2004). Soon, feudalism gave way to the Crusades, which stimulated trade, as Venetian Marco Polo

opened new trade routes (D. Wren, 2004). Finally, slavery, centralization, and decentralization are problems that continue even through today, as discovered by this review of foundational management and leadership theories from which project management is built.

Foundational management philosophies. Industrialization during the latter part of the 1800s and early part of the 1900s led to a number of management theories considered to be foundational philosophies. The foundational philosophies of management include scientific, administrative, bureaucracy, and human relations management approaches.

The Wealth of a Nation. Adam Smith, a Scottish economist, suggested that a division of labor was efficient for occupational specialization, saving from standardizing tasks, and using machines instead of human labor (D. Wren, 2004). In addition, the division of labor process placed employees into specialized labor roles, increasing output. Specialization also leads to increased productivity by creating distinct skill-sets.

Also, Smith argued that human and physical ability must be matched to the skill and ability required to use technology if there is to be a major increase in productivity. Today, the division of labor is accepted as inevitable in a capitalistic society; however, there are problems that may occur. Smith's book *The Wealth of a Nation* was published at the beginning of the Industrial Revolution in March of 1776. Later, Smith found vocal support for his form of liberal economics (D. Wren, 2004).

Industrial Revolution. The first Industrial Revolution (1750 to 1850) was a period when transportation, agriculture, mining, manufacturing, and other new technology affected social, economic, and cultural conditions (D. Wren, 2004). The first

Industrial Revolution started in Great Britain and later spread through Europe, the United States, and the rest of the world (D. Wren, 2004). The result was a period of transition from manual labor to machine-based manufacturing in textile industries and improvements in iron-making techniques (Bateman & Snell, 2007). Repeatable precision and interchangeable parts reduced the price of the products and led to the Second Industrial Revolution, which began around 1850 (D. Wren, 2004).

Industrialization drove a need to improve manufacturing efficiency, which subsequently drove the need for improved operating efficiency and improved management techniques (D. Wren, 2004); the foundational management theories were developed in order to accommodate the need for improved operating efficiency. Bateman and Snell (2007) said, "The major approaches that emerged during this period were systematic management, scientific management, administrative management, human relations, and bureaucracy" (p. 35). Lastly, scientific, administrative, bureaucratic, and human relations philosophies of management came into existence as society sought ways to improve industrial efficiencies and reduce cost of manufacturing (Bateman & Snell, 2007).

Scientific management. Fredrick W. Taylor, Henry L. Gantt, Frank B. Gilbreth and Lillian (Meoller) Gilbreth were innovators of the scientific management movement during the early 1900s (D. Wren, 2004). Specifically, the goal of scientific management was to make the routine and mechanistic heavy industries and assembly lines more efficient by streamlining employee performance efforts (Buenstorf & Murmann, 2005). Additionally, Taylor devised analytical time study methods based on Charles Babbage's descriptive methods. Taylor also created methods to analyze and facilitate the

maximizing of output with the least input based on rationalization of the individual worker and workforce (D. Wren, 2004).

Rational systems perspective. A rational organization has specific goals and formal methods to implement those goals. Taylor's approach divided work between managers and workers and introduced a performance-based incentive system. The result was a top-down management approach that emphasized efficiency, low cost, and pay for performance based on detailed task planning (Hoopes, 2003; D. Wren, 2004). According to D. Wren (2004), "For Taylor all authority was based on knowledge, not position" (p. 131). Henry Gantt, a contemporary of Taylor, moved top-down management in a kinder direction by offering positive incentives versus Taylor's negative incentives (D. Wren, 2004).

Gantt is also known as the creator of the Gantt chart, a form of which is still in use today to help manage time and facilitate planning. However, Gantt never patented the Gant chart concept of planning and controlling (D. Wren, 2004). According to Hoopes (2003), "The Gantt chart represented equal lengths of time, usually a day with vertical columns of equal widths" (p. 86). The Gantt chart and various variations thereof are still principal project management tools (D. Wren, 2004). Variations of the Gantt chart are in use by project managers around the world today.

The Gantt chart is a common time management tool used for construction, operations, maintenance, production, PERT, the critical path method, and the critical chain method of scheduling (PMI, 2008). Time management also refers to the schedule management process commonly called scheduling. Figure 3 presents a sample Gantt chart or schedule bar chart graphic created using Primavera Project Management

software. The red portions represent the critical path. The Gantt chart is also called a bar chart.

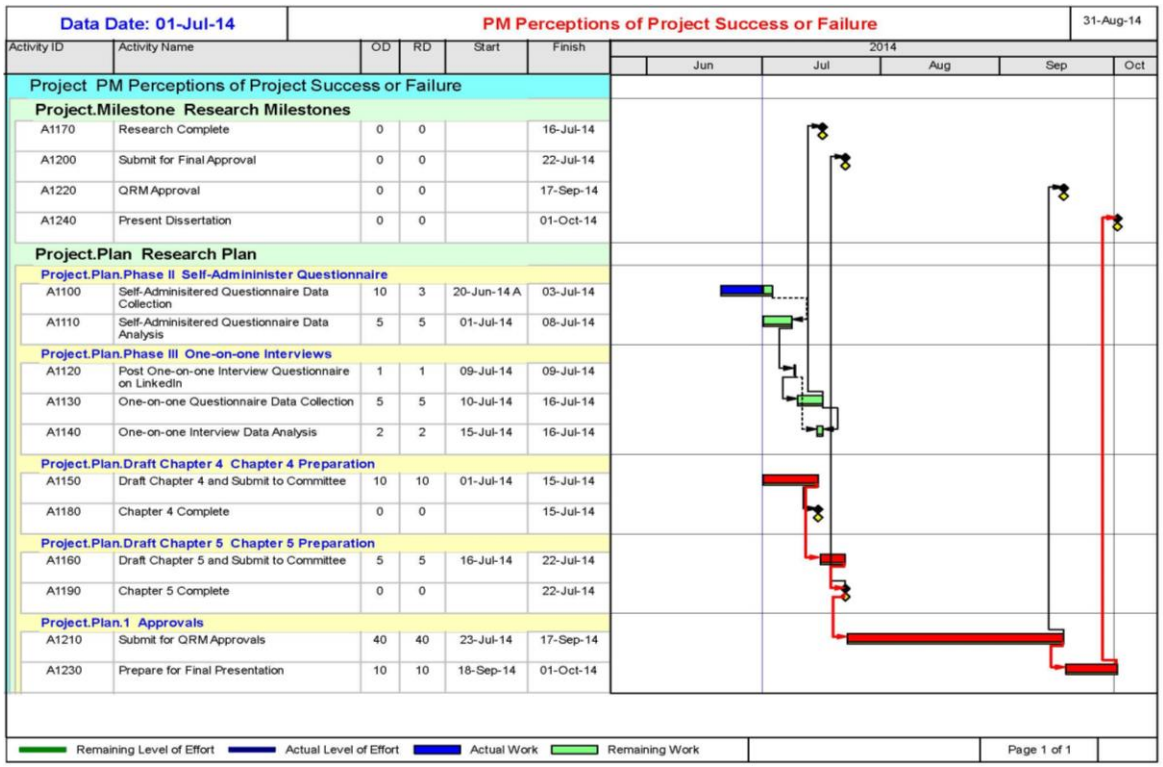

Figure 3. Sample Gantt chart.

Further, production control, PERT, the critical path method, and the critical chain method principles of planning, time control, and cost use control are based on principles established by Gantt. Additionally, the principles of time management and planning remain a major component of the project management process (PMI, 2008). Last, the principles of time management and planning were established by Taylor, Ganett, and other Taylorist adherents such as Frank and Lillian Gilbreth (D. Wren, 2004).

Frank and Lillian Gilbreth. Frank Gilbreth, working independently of but in parallel to Taylor, was also a disciple of Taylor (D. Wren, 2004). Among Gilbreth's many achievements is the creation of the Taylorist Society, which is currently known as the Society for the Advancement of Management (Hoopes, 2003; D. Wren, 2004).

According to D. Wren (2004), "One characteristic of Gilbreth's lifelong quest was that he asked the workers to help improve methods and achieve motion economy for their own sake as well as for management's" (p. 165).

Later, Lillian Gilbreth, PhD, spouse of Frank Gilbreth, became a management consultant in her own right (D. Wren, 2004). According to Hoopes (2003), "management consulting opened doors for Lillian in an era when few women in business worked above the level of typist" (p. 68). Additionally, women had just gained the right to vote, and Lillian Gilbreth played an important role in the presidential election of Herbert Hoover.

Lillian Gilbreth was not the originator of industrial management, but she humanized scientific management principles. She remains a popular figure in feminist circles and management circles; in terms of notoriety, only Mary Parker-Follet, discussed subsequently, exceeds her. It is noteworthy that Gantt and Lillian Gilbreth represented a movement toward a more humanistic approach to management near the end of their careers and lives (Hoopes, 2003).

Bureaucratic management. Max Weber, a German sociologist, economist, and administrative scholar, proposed a model of bureaucratic management, which meant management by office. Primarily, Weber's foundational contribution to management theory was the Theory of Social and Economic Organization. Simultaneously, scientific management philosophies were coming into fashion in Europe as Weber was development his theory (D. Wren, 2004). Weber defined seven major components of bureaucracy, including a hierarchical authority structure, a specialized administrative staff, organization possessing limited and exclusive objectives rewards based on

performance and office, quantity of work, quality of work, and mutually agreed segmented participation and responsibility (D. Wren, 2004, Tidy, 1959).

Weber's theory proposed strong lines of organization control and detailed operational procedures. According to D. Wren (2004), "Weber's conceptualization of bureaucracy merits substantial consideration for naming him the founder of organizational theory" (p. 227). Weber also advanced three kinds of authority: are rational-legal, traditional, and charismatic. Weber's model of bureaucratic management is still in use today in the military and other organizations. Weber's theory contributed immensely to the study of bureaucracy and the administrative discourse, but was not recognized in the United States until the 1940s and 50s (D. Wren, 2004).

Administrative theory of management. Henri Fayol was of French decent but was born in Istanbul. Weber's ideas on bureaucracy and Fayol's administrative ideas agreed on separating management ability from technical knowhow (D. Wren, 2004). Additionally, Fayol defined the five management functions or elements of planning, organizing, controlling, commanding, and coordinating. He also defined 14 principles, including authority, discipline, scalar line of authority, command unity, direction unity, subordination of personal needs to general needs, compensation, centralization, division of work, order, fair play, employee stability, esprit de corps, and initiative (D. Wren, 2004).

Fayol's ideas form the basis of administrative management. According to McLean (2011), "Although it was proposed ninety-five years ago, Fayol's definition of management remains one of the most cited of modern times" (p. 32). Fayol's

administrative ideas and Weber's bureaucratic management concepts are still in use in organizations today.

Human relations management. Human relations management theory evolved as a reaction to the dehumanizing and sometimes harsh properties of scientific, administrative, and bureaucracy management theories (Hoopes, 2003). Specifically, human relations theory is an outgrowth of union intervention and government regulations that attempted to correct the flaws of the earlier theories. In addition, the focus of human relations theory is the individuals in an organizations and how the organization can benefit when the people of the organization prosper. To that end, Mary Parker Follet and Elton Mayo led a movement toward a more humanistic approach of management (Hoopes, 2003).

Mary Parker Follet. Mary Parker Follet, a social theorist and wealthy heiress, became a management theorist out of frustration with her inability to make a mark in academic and political science (D. Wren, 2004). According to Hoopes (2003), "The Taylor society also welcomed Follet's optimistic message" (p. 116). Although Follet accepted the power/authority theories, she cautioned against its overuse (D. Wren, 2004). Follet's management theories, while welcomed by and based on Taylorism, were much more sophisticated than Taylor's functional approach to labor management (D. Wren, 2004). Further, Follet's contribution did not anticipate current management philosophies, but in many ways exceeded current management philosophies (Hoopes, 2003). Further, Follet was a contemporary of the scientific management period, and linked scientific management to the social person era of human relations theories (D. Wren, 2004).

Elton Mayo. Elton Mayo, a social scientist, led the human relations management movement (Hoopes, 2003, Wren, 2004). Eventually, Mayo earned a position at Harvard Business School by using his political connections, and while there he formed a group of like-minded students into a human relations group (Hoopes, 2003, D. Wren, 2004). The human relations movement as envisioned by Mayo is a correlation between productivity and mental health (D. Wren, 2004).

Mayo participated in the Hawthorne Human Relations Experiments sponsored by the Western Electric Company from 1924 to 1932. After the study, he proposed that Taylorism had a blind spot and rejected the idea of management bullying, which included talking but not listening (Hoopes, 2003; D. Wren, 2004). Specifically, Mayo's philosophy rejected Taylor's scientific management theory. In addition, Mayo launched a program of training all the supervisors in therapy and inductive listening while at Hawthorne.

> Mayo helped shape a managerial culture that could coexist with a democratic society. His idea of willing, bottom-up cooperation meshed well with the consciences of American managers committed to democratic values. Top-down power, not to mention tyranny, seemed superfluous in organizations in which people worked with social spirit and out produced those driven by mere coercion and incentive pay. (Hoopes, 2003, p. 159)

Fritz Roethlisberger. Fritz Roethlisberger, a protégé of Mayo, indicated that other factors during the Hawthorne Experiment explained the results (Hoopes, 2003; D. Wren, 2004). D. Wren (2004) said, "The Hawthorne studies have been subjected to so much manipulation and misinterpretation that the facts are clouded in myth and

advocacy" (p. 299). Soon, Roethlisberger became a major proponent of the human relations management movement, creating a new area of study at Harvard called organizational behavior. Organizational behavior theory balanced, and did not dismiss, human relations theory's mix of therapy and management healing to increase efficiency and productivity (Hoopes, 2003). Management theory continued to evolve based on ideas by Chester Barnard, an associate of Mayo and the Harvard Business School.

Chester Barnard. Chester Barnard was one of the first to formulate the idea of managers as moral leaders (D. Wren, 2004). Barnard, a staunch individualist in his youth, eventually came to the conviction that teams were better than individuals. Barnard regularly spoke to the Harvard human relations group and explained that human organization is achieved only when the spirit of cooperation enables groups to do what an individual cannot. Further, Barnard's theory stated that a leader's source of authority resides in subordinates' acceptance or non-acceptance of his or her authority (D. Wren, 2004).

Barnard concluded that authority was a myth and that power flowed from the bottom up (Hoopes, 2003). Additionally, President Franklin and others heavily influenced Bernard's theory of moral leadership (Hoopes, 2003). Some of Bernard's many accomplishments included work with J. Robert Oppenheimer, renowned nuclear physicist and lead scientist of the Manhattan Project, to establish a process to control nuclear proliferation (Hoopes, 2003).

Behavioral management. The behavioral approaches of Mayo and others had little influence on management theory because they stood in the shadow of Fayol and Taylor until the 1960s (D. Wren, 2004). The behavioral management approach focuses

on the human variables related to increased organizational success (Hoopes, 2003). Behavioral science has also had an impact on human relations and contemporary management theories.

> Management's first responsibility is to detect trends in the macro environment so as to be able to identify changes and initiate programs. It is also important to estimate what impact a change likely will have on employee behavior patterns, work processes, technological requirements, and motivation. (Bansal, 2009, p. 236)

Behavioral sciences led to the emergence of human relations and other contemporary theories, such as systems, contingency, and chaos (Hoopes, 2003). Contemporary management theories encourage management to take responsibility for employees' well-being (D. Wren, 2004).

Contemporary management theories. Contemporary management theories share a common theme that management must take care of its workforce, who in turn will take care of the organization. Contemporary management theory is focused on the management of organizational alignment, strategy, and people. Ashkenas, Ulrich, Jick, and Kerr (2002) said, "Wiring the system (even in a wireless world) involves putting in place components such as management commitment and alignment between structure and strategy that are prerequisites for permeable vertical boundaries" (p. 62). Specifically, the contemporary theories encourage innovation and creativity while encouraging technology improvements to benefit the workforce as well as the financial bottom line.

Leadership theories. Leadership is also important to project management practice and principles. In many cases, project managers graduate to managerial roles

because of their technical capability, not leadership ability (Williams, 2011). D. Wren (2004) said, "Leadership fits into general management theory because it focuses on the attainment of organizational goal by working with and through people and other resources" (p. 442). In this way, leadership and management share many characteristics because both are group activities.

> Can we teach people to become leaders? Can we teach leadership? People are divided on these questions. It was once widely held that "leaders are born and not made," but that view is less widely held today. We also used to hear about "natural leaders" but nowadays most leaders have learned their leadership ability rather than inherit it. (Cronin, 1984, p. 28)

A common leadership definition is that leaders enable the movement of followers toward shared goals (J. Wren, 1995). Machiavelli (1513/1992) noted that it is perilous and difficult to lead others while introducing something new. Hence, another belief commonly accepted by all the experts is that there are many ways to motivate, encourage, influence, empower, and control individuals, teams, groups, and organizations. Cronin (1984) stated, "Leadership often involves an element of manipulation or deviousness, if not outright ruthlessness" (p. 29). Accordingly, leaders such as Stalin, Hitler, Mussolini, and Saddam Hussein come to mind. On the one hand, leadership can be an honorable and self-sacrificing effort; while on the other hand, it can be suppressive, repressive, controlling, and manipulative.

To be sure, repressive organizations retain decision-making authority and control at the uppermost levels by using an autocratic leadership style, and routine decisions are made by supervisory and line levels of organization. Clawson (2006) defined authority

as a leader with direct control over a person or group who has the right to make requests consistent with his or her authority, and the person or group has the duty to obey.

In an autocratic organization, the typical employee lacks the authority to influence the direction or vision of the enterprise. Moreover, there is little emphasis on employee contributions, other than increased productivity. Typically, this type of organization will experience a low volume of employee retention. As a result, this type of organization also seeks to attract low wage earners. In summary, the autocratic leadership style is a transactional leadership style because the primary motivation for the typical employee is compensation or pay for performance (Hoopes, 2003).

A leader is a person; leadership is a function that a leader performs (J. Wren, 1995). Also, leadership is a response inasmuch as it is an action. Yukl (2006) stated, "Progress in understanding leadership has been slower than would be expected from the large volume of publications and the immense amount of effort expended on leadership, research" (p. 457). Regardless of the style or method used, effective leadership entails understanding events, determining objectives, determining strategies, encouraging commitment, establishing trust, coordinating efforts, garnering support, and empowering personnel (J. Wren, 1995). All leadership styles have a common goal: the success of the enterprise or organization. Accordingly, the best-known theories of leadership are great man, trait, behavioral, contingency, transactional, and transformational (J. Wren, 1995).

Great man theory (1840s). The great man theory became popular in the middle of the 19th century (J. Wren, 1995). During this period, the thought was that only a man could have the characteristics of a great leader (J. Wren, 1995). The great man theory assumes that the traits of leadership are intrinsic, which means that great leaders are born,

not developed. However, no one has established with certainty the characteristics of a great leader (J. Wren, 1995). Specifically, the great man theory postulates that leaders are destined by birth to leadership (Hoopes, 2003). Others have indicated that perhaps great leaders arise to confront a situation (Hoopes, 2003). Lastly, perhaps the great man or hero is the result of the time or of certain conditions.

Trait theory (1930s-1940s). The trait leadership theory indicates that leaders are born with certain qualities that make them fill leadership positions (Hoopes, 2003). In this manner, trait theories argue that leadership emerges from common personality traits and characteristics (Chemers, 1984). Also, early trait theories have inferred that leadership is an innate and instinctive ability. Traits are external behaviors that emerge from a leader's internal beliefs and values (J. Wren, 1995).

Trait theory identifies qualities such as intelligence, sense of responsibility, creativity, values that followers find acceptable, empathy, assertiveness, good decision-making, and likability. One shortfall of the trait leadership theory is that it includes traits or characteristics such as height and intelligence (J. Wren, 1995).

Behavioral theories (1940s-1950s). Behavioral theories were a reaction to the trait leadership theories, offering a fresh perspective focused on leadership behavior instead of mental or physical characteristics (Chemers, 1984). That is to say, the major philosophical change was that the behavioral theorists believed that leaders are made, not born. In addition, the behavioral theories place leaders into two categories: task-oriented leaders and people-oriented leaders (Chemers, 1984). As the name indicates, the task-oriented leader places more importance on tasks, whereas people-oriented leaders' places greater emphasis on the needs of people (Chemers, 1984).

Behavioral theories focus on leaders' behavior. Thus, some leaders dictate and expect cooperation, while others involve their team in the decision-making process (Chemers, 1984). This theory describes three main leadership types: autocratic, democratic, and laissez-fare. Autocratic leaders make all decisions without consulting their teams, democratic leaders seek team input before coming to a decision, and laissez-faire leaders allow team members to make many of the decisions (Chemers, 1984).

Contingency leadership theories (1960s). The contingency leadership theory or situational leadership supports the argument that there is no single way of leading. Contingency leadership theories are an extension of the trait theory because human action and traits relate to the situation, requiring leaders to apply their leadership skills (Hersey & Blanchard, 1995). Judge and Bono (2000) stated,

> Contingent reward is defined as providing an adequate exchange of value resources for followers support. Contingent reward is the most active form of transactional leadership but is less active than transformational leadership because one can engage in contingent reward without ever being closely engaged with followers. (p. 752)

Specifically, a contingency or situational leader will display his or her leadership skills depending upon how he/she feels followers will respond.

Transactional leadership theories (1970s). The previous theories depend on action by the leader, whereas the transactional theory focuses on action by the subordinate (Chemers, 1984). A common theme among autocratic, participative, transformational, and charismatic leadership is that they are situational or conditional

basis (Judge & Bono, 2000). They also have in common a transaction (which may be intrinsic or extrinsic), and so are therefore transactional (Chemers, 1984).

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Transactional leadership theories or exchange theories describe transactions between the leader and the followers. Specifically, an effective transaction motivates the follower to align to his or her desires to the desirability or undesirability of the reward (or punish) in order to accomplish assignments. Effective transactional leaders must develop a reinforcing atmosphere that synchronizes the followers' desires to the organization's objectives (Chemers, 1984).

Transformational leadership theories (1970s). According to transformational theory, the manner in which a person relates to others creates a solid relationship of trust and also motivation that is essential to both the leader and followers. Avolio and Yammarino (2002) stated, "Transformational and charismatic leadership involve a unique bonding among leaders and followers – emotional attachment, respect, and trust form the basis of these approaches" (p. xvii). This means transformational leaders transform their followers by inspiring followers with charisma (Avolio & Yammarino, 2002) and by providing a vision for followers (Clawson, 2006).

Transformational leaders and followers motivate and influence each other to increase performance levels (Avolio & Yammarino, 2002). Clawson (2006) said,

"Followers influenced by a transformation leadership believe they are improving themselves" (p. 390). Also, transformational leaders establish trusting relationships and induce a feeling of belonging. Followers identify with the transformational leader and his or her purpose, and as a result the leader establishes a shared vision, with the primary goal being improvement of the entire enterprise or organization (Clawson, 2006).

Organization theory and design. Organization theory and design, like management and leadership theories, advanced as the pace of technological innovation increased. According to Schwartz (2003), "The world in 1925 was very different from that of the 1850s – and even more radically different from that of 1650" (p. 5). Organizations have had to change because of all the transformations that occurred over the ages.

Organizational theory deals with how we interact with each other at work and in our personal lives, whereas organizational design addresses how an organization can become more effective for stakeholders (Beckhard, 2006). Smith (2012) said, "Projects are separate and distinct from other organizational processes" (p. 28). Because of the short-term nature of projects, market opportunity or other business requirements could dictate the organizational structure and design (Smith, 2012). Görög (2011) said, "Nowadays big organizations – both profit- oriented companies and public service organizations – are more and more concerned with project programs in order to realize their strategic objectives in an efficient manner" (p. 17). To that end, improving the product, service, portfolio, program, or project is of great importance for organizations (Görög, 2011). However, to fully understand management and leadership, we must look at it in terms of organizations.

Organizational theory. Organizational theory is the study of organizations to identify common themes to solve organizational problems to improve efficiency, improve productivity, and meet the needs of owners or stakeholders (McAuley, Duberley, & Johnson, 2007). Organizational theory is important because it affect all aspects of our lives. McAuley et al. (2007) said, "Indeed, theories are inherently practical devices; we often just do not realize it because we deploy and apply our theories so tacitly that we often remain unaware of their subtle influence upon how we understand and do things" (p. 5). Organizational theory encompasses three perspectives: classical, neoclassical, and environmental (McAuley et al., 2007). Organizational theory complements organizational behavior and human resources management processes.

History of organizational design. Kurt Lewin, creator of the Research Center for Group Dynamics (RCGD), is the founder of organizational design (Burke, 2006). RCGD members were on the team that founded the National Training Laboratories (NTL). Douglas McGregor and Richard Beckhard coined the term *organizational development* in the 1950s (Burke, 2006).

Organization development core values. Organizational development has a humanistic value system that provides opportunities for people to function as humans and provide opportunities for each organizational member and the organization itself to increase organizational effectiveness (Austin & Bartunek, 2006). The goal of organizational design is to improve the organization's functions (Beckhard, 2006).

Theory of modernization and globalization. The growth of modernization started after World War II (Peng, 2009; Wang, 2009). Modernization theory originated during the early 1950s in the United States as a way to explain how agrarian societies

develop into an industrial society (Peng, 2009). Other countries believed that Western modernization implied that their societies were not technologically developed (Wang, 2009).

Critics of modernization theory believed that the movement benefited those with the monetary means and resources for technological development and would discriminate against those who lacked the monetary means and resources to modernize (Li, 2010). As a result, these countries were reluctant to modernize because they feared the economic gap it would create between the affluent and the underprivileged (Li, 2010).

Communication advances reduced the need for direct contact and organizational interactions become remote. Tãut (2011) said, "Management process is dynamic and should be understood as implying responsibility for integration and coordination of both human and material resources to obtain best results" (p. 23). Eventually, the diffusion of technological innovations in Western society dispersed globally in waves (Li, 2010). The following section discusses how technology integration influences the leadership, power, and authority of project managers.

Technology integration implications. Computing, communications, and software technology have become an integral part of our daily routine. Khan, Islam, and Ahmed (2004) said, "Technology in general and software products in particular have in recent times become intertwined with the daily lives of the people in the developed world" (p. 130). Also, organizations must be able to determine the direction in which technology is advancing so they can stay ahead of the competition (Khan et al., 2004).

Projects designed for the current state of technology without regard for future technology modifications or improvements may cause time delays or cost overruns as

requirements change toward newer technology (Bansal, 2009). Further, some projects fail because the initial scope did not consider the direction of technology (Bansal, 2009). Hoque, Sambamurthy, Zmud, Trainer, and Wilson (2006) said, "To succeed today, companies must manage business and technology together" (p. 206). Specifically, the ability to integrate technology in a financially responsible manner is a critical factor. A need for change is communicated, funded, and initiated, along with ways to manage and measure effectiveness (Bansal, 2009).

Change management. Management of change is a key strategic challenge (Bansal, 2009). Shane (2009) said, "To be effective, change management should be multidisciplinary, touching all aspects of the organization" (pp. 235-236). In addition, the effect of change on an organization or enterprise is complex and can be difficult to measure (Shane, 2009). Bansal (2009) said, "Functions such as workflow, project management, status management, and change management also help to control and monitor product development processes" (p. 99). Management attempts to minimize the impact to workforce productivity and culture while introducing the changes of new processes and procedures (Shane, 2009).

Key performance indicators. Once change management is implemented, the challenge is to measure and evaluate the benefits and effectiveness of organizational technology integration. Specifically, evaluating the effectiveness of technology integration in an organization requires justification of the cost of technology integration innovations (Bansal, 2009). Key performance indicators (KPIs), benchmarking, and scorecards are some methods for measuring benefits and effectiveness of technology integration (Bansal, 2009).

Key performance indicators are useful in determining whether a project is meeting its desired outcome. Bansal (2009) said, "Key performance indicators (KPIs) provide a means of judging the performance of business processes internally by time period, collaboratively with others within your supply chain, and externally by benchmarking against similar companies" (p. 64). The selection of KPIs should reflect the decision-making process and the business strategy (Bansal, 2009). In order words, KPIs are a way to measure the rate of technology diffusion, to measure team effectiveness, and to coach the team toward effective project management.

Rate of diffusion. Effective technology integration is the result of an organization effectively implementing its strategy, agreeing upon expected outcomes, and measuring their performance against agreed-upon benchmarks to meet these outcomes (Shane, 2009). Accordingly, the rate of diffusion is another way to get an idea of the acceptance of the benefits of technology. Shane (2009) said, "First, the greater the benefit that a new product provides to customers and the lower its cost, the faster it will diffuse because customers have more motivation to adopt a product that benefits them more and costs them less" (p. 62). Organizations must have a high rate of diffusion to adjust to changing technological environments in order to be strategically significant (Mikušová & Janečková, 2010).

Process audits and pilots. A method to avoid resistance is to pilot technology integration or to stagger the deployment of new technology to non-critical systems to establish a core of subject matter expertise before moving to more critical systems (Tidd & Bessant, 2009). Pilots programs augmented with communication, training, and continuing education reduces resistance to new technology while increasing competency

with the new technology. Tidd and Bessant (2009) stated, "Sometimes a powerful approach is to try something out – probe – and learn from the results, even if they represent a 'failure'" (p. 267).

Projects fail or succeed even when key stakeholders, management, and subordinates are in agreement and supportive of the scope, schedule, and cost agreed to at project onset (Shenhar & Dvir, 2007). Also, the literature reviewed did not suggest technology integration as a solution to address critical factors leading to project success or failure. According to Hickman (2010), "The fast pace and rapidly changing environment in which new era or postindustrial organization function require leadership that is substantially different from Max Weber's solitary executive at the very top of a bureaucratic hierarchy" (p. x). Finally, management, leadership, and organization vision and decisions, combined with employee dedication and innovation, all working together can make technology integration a successful reality, but do not seem to improve the likelihood of successful project implementation.

Power versus authority. Power is the ability to influence others to act, whereas authority is an entitlement to use power (Tãut, 2011). Power and authority are key elements of organizational theory (Tãut, 2011). The use of power and authority also enables an organization to establish and implement strategies that support the organizational objectives and culture (Tãut, 2011). The major types of power are legitimate, reward, referent, and coercive (Tãut, 2011).

Traditionally a manager's power is appointed, which means that it comes with his or her position in the organization (Hughes, Ginnett, & Curphy, 1995; Tãut, 2011). This type of power is called legitimate power and does not require acceptance by subordinates.

Legitimate power comes from a formal authority as opposed to reward power, which originates from the formal authority of managers to give rewards, such as raises, advancements, commendation, and recognition. In contrast, coercive power is the authority to discipline or recommend discipline (Tãut, 2011). This power includes the right to lay off, downgrade, criticize, deny pay increases, admonish, and to make undesirable entries into employee records (Tãut, 2011).

Leaders also can have and use legitimate, reward, referent, social, and coercive power. Social control occurs when authorities counter subordinate influence (Grimes, 1978; Hughes et al., 1995). Subordinates can resist the influences of power with work slowdowns, strikes, and other tactics, so they also have power in varying degrees (Grimes, 1978). In this context, leadership is merely an exercise of authority to influence subordinate compliance through social control (Tãut, 2011). Grimes (1978) said, "Customarily, both influence and social control are both referred to as 'leadership'" (p. 734). The project manager must know when to exercise power, authority, and influence, but possessing power and authority means nothing unless a leader is willing and able to use it (Hughes et al., 1995).

Management and leadership implications for project management. The terms leader and manager describe people who have positions of official authority; the terms do not describe his or her performance, behavior, or sources of power or authority (Grimes, 1978). Power implies control, whereas authority implies compliance (Grimes, 1978). Not all formally appointed managers who happen to wear the official designation as leader can motivate followers toward a shared goal (Grimes, 1978). In other words, not all formally appointed managers have the inherent or acquired ability to lead.

Likewise, not all leaders have the inherent or acquired ability to manage (Grimes, 1978). Hughes et al. (1995) said, "Being able to use influence tactics that modify followers' attitudes and followers' attitudes and behaviors in the desired direction at the same time they build up followers' self-esteem and self-confidence should be a skill all leaders strive to master" (p. 351). Kouzes and Posner (2003) stated, "Leaders enable others to act, not by reporting the power they have but by giving it away" (p. 79). The focus of the PMI and AACE is limited to improving administrative and management practices but does not address the full spectrum of the role of leadership.

Effective leadership and manager skills support and encourage organizational effectiveness (Nitschke, 2013). The leadership and management literature reviewed does not draw any specific references or conclusions that have direct implications for the primary factors that led to success or failure of projects in the context of lived experiences.

Current Findings Overview

Senior organizational roles presuppose a convergence of management and leadership abilities (Grimes, 1978). Such is the case of the project manager and other project professionals. The typical project manager has legitimate or formal power and authority granted by key stakeholders but must also have personal power and authority in the same manner as any other manager (D. Wren, 2004). The project manager must at minimum be a competent leader (Nitschke, 2013).

Selecting a project manager is one of the first key decisions that stakeholders make after deciding to green light a project (PMI, 2008). It stands to reason that if the project manager selection process has flaws, the project is destined to have flaws or

possibly fail. It is critical that the right people in the right roles participate in planning, decision-making, and monitoring processes (Reich & Wee, 2006). Many other critical factors lead to project failures, and there are many methodologies for managing these factors and issues (Williams, 2011). The following section discusses some of these methods, including the critical path, critical chain, earned value, and PERTs.

One common element between a failed project and a successful one is people and how those people are led (Nitschke, 2013). Indeed, it has been said that projects do not fail, but rather that people fail projects (Williams, 2011). Although the reasons or factors that cause projects to fail or succeed are numerous, there must be some underlying reasons that, after thousands of year of successful projects, like the Great Pyramids of Giza, the Great Wall of China, and sending a man to the moon, we have not figured out how to consistently and successfully initiate, develop, implement, and operate in a project management environment (Williams, 2011). However, it is easy to see that some projects succeed or fail despite human intervention, whereas others succeed regardless of the team's failings or weaknesses (Williams, 2011).

Emotional intelligence. Projects do not occur in an emotional vacuum; instead, they occur in organizations that typically are led by project managers responsible for motivating a project team and the stakeholders. Emotional intelligence is the ability to appreciate our own emotions and those of others in order to guide our thinking, plans, and actions (Clark, 2009; Mersino, 2007). The major emphases of emotional intelligence are self-consciousness of self, self-administration, social awareness, relationship management, and leadership (Mersino, 2007). Some leaders have these characteristics and some do not, and the literature reviewed indicates that there is no opportunity in

current project management process to teach project managers how to gain and use these leadership skills other than their own initiative (Mersino, 2007; Tessema, 2010).

Project management requires team building, communication, self-control, and the ability to build relationship with team members and stakeholders. The cultural aspects of project management can take years to accomplish (Kerzner, 2006b). Project managers with high intuition along with the necessary technical skills can be highly effective project managers. Mersino (2007) stated, "PMP certification does not in itself make a project manager more capable; it simply proves that you have a requisite project management experience and can pass the multiple-choice certification exam" (p. 7). Project managers use project management professional certification to set themselves apart and to gain an advantage over non-project management professional certified project managers in the employment market (PMI, 2008).

Certification does not require project managers to know how to influence and motivate subordinates. Influencing and motivating are major components of leadership. Tãut (2011) said, "Influence can be defined as a change in a social agent, a conceptual system, the reaction of emotional or behavior of other social agents" (p. 27). PMI identifies project management leadership skills as problem-solving, motivation, negotiation, influencing, conflict management, and effective communication, but falls short on methods to develop and use these abilities (Mersino, 2007). Emotional intelligence may be another way a manager can set himself or herself apart from the herd (Mersino, 2007; Tessema, 2010), but the literature reviewed does not indicate how or if the PMI intends to address this critical factor.

Critical path method. Gantt charts facilitate time management of projects (PMI, 2008). Additionally, the critical path method, developed in the 1950s and derived from Gantt charts, is used to control large-scale defense projects (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014). The critical path method facilitates project management by providing a structured process for developing and analyzing a project plan, monitoring progress, identifying risk, and delineating remediation actions (PMI, 2008). The critical path method uses computerized programs to develop, test, and optimize implementation scenarios during the project initiation phases (PMI, 2008). These computerized models can be cost-loaded and time-scaled in real-time and deliver output in a Gantt chart format. The Gantt chart remains the dominant format of standard output generated by computerized project management tools like Microsoft Project, Primavera, and others (PMI, 2008).

Critical path analysis using critical path method (CPM) identifies optimum task sequencing to complete a project on time (PMI, 2008). The next section includes a description of program evaluation and review technique (PERT). A major difference between CPM and PERT is that PERT is more dependent upon expert judgment or experience to determine variability of task duration (PMI, 2008).

Program evaluation and review technique. PERT, another time management tool, also uses a Gantt chart concept to plan, schedule, and manage projects (PMI, 2008). PERT was also developed in the 1950s to control large-scale defense projects (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014). PERT is a variation on CPM and has a more skeptical method managing durations of activities. In addition, PERT develops estimates of the pessimistic (longest) duration, optimal duration (most likely), and the optimistic

(shortest) duration of time needed to complete an activity (Smith, 2012). A benefit of PERT is that it corrects probability and uncertainty by providing optimistic, pessimistic, and most-likely duration estimates (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

Another method of time management is the critical chain method, which is a part of the theory of constraints. This time management method is becoming more widely used in scheduling of projects (Smith, 2012). The next section describes the critical chain method and how it supports management and control of projects.

Theory of constraints: Critical chain methods. Eliyahu Goldratt originated the idea of the theory of constraints in his book *The Goal* in the 1980s (Goldratt & Cox, 2004; Smith, 2012). Goldratt (1990) envisioned the theory of constraints as a method of managing organizations to increase profits. The theory of constraints is a set of processes based on a systems approach. The objective of the theory of constraints is to simplify management of complex organizations by focusing on physical and logical constraints or leverage points (Goldratt, 1990).

The theory of constraints has three principal assumptions: (a) the greater the complexity of a system, the easier it is to manage; (b) if natural phenomena are in conflict, the one or both must be wrong; and (c) people may do things that seem stupid, but they must have a reason for their actions (Goldratt, 1990; Goldratt & Cox, 2004). The theory of constraints is not just a tool to manage bottlenecks (Goldratt, 1990); rather, it can also increase throughput (sales), reliability, and quality while decreasing inventory, late deliveries, and overtime, while facilitating tactical and strategic decisions for continual improvement (Goldratt, 1990; Goldratt & Cox, 2004).

The theory of constraints critical chain method is different from CPM because the goal of CPM is to estimate duration with 90% accuracy (Blackstone, Cox, & Schleier, 2009). The goal of the critical chain method is to estimate duration with 50% accuracy in order to reduce the tendency to wait as long as possible to start a task because of the conservative buffer typically used in CPM duration estimates. Blackstone et al. (2009) said, "The critical chain approach fights those effects by using 50% task duration and by planning to start each activity when the previous activity ends" (p. 7038). This tendency to wait as long as possible before starting a task is also known as *student syndrome* (Blackstone et al., 2009).

Another issue is the tendency to start a task on time but to then to allow the task to extend to fill in the extra time available, known as Parkinson's Law (Blackstone et al., 2009). Introducing 50% estimates was an attempt to combat both the student syndrome and Parkinson's Law. Blackstone et al. (2009) said, "The critical chain approach does not try to complete every 'task' on time, rather it tries to complete the 'project' on time" (p. 7030). A major difference between CPM and critical chain method is the manner in which each deals with resources.

> The most important difference between the critical chain and critical path is the leveling of resources. In traditional methods of project management, the critical path is determined by establish the longest sequence of dependent task and then scheduling those dependent tasks accordingly. This can often result in resources performing on more than one task or on different paths in a single-project environment. (Smith, 2012, pp. 43-44)

The critical chain method never forces a resource to multitask (Smith, 2012). Some criticize the critical chain method because it is a cultural change (Blackstone et al., 2009). Regardless of the process used, be it CPM, PERT, or critical chain method, schedule time management is a critical factor contributing to the success or failure of projects to meet time and financial deadlines, and to complete the agreed-upon scope (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

Earned value management. Project managers require methods for controlling project cost as well as schedule adherence (PMI, 2008). In addition, earned value management (sometimes referred to as earned value management system or earned value analysis) integrates cost, schedule, and scope (PMI, 2008). Earned value management is a systemized approach used to integrate scheduling management, resource management, cost analysis, and performance reporting (Solanki, 2009). Specifically, earned value management consists of 32 criteria or guidelines that, when used properly, facilitate cost, schedule, and scope control (Solanki, 2009).

Control is accomplished by integrating the cost, schedule, and scope into a performance baseline. Current status and baseline are compared to each other to determine if a project is on schedule and within budget or not (Solanki, 2009). Earned value calculates three metrics: planned value, earned value, and actual cost (Solanki, 2009).

As stated previously, earned value management is perceived as complicated and costly; only federally funded projects with a cost greater than 20 million dollars require its use (Stratton, 2007). Another shortfall of earned value management is that schedule performance index is not reliable toward the end of a project because there are no

acceptable means to estimate the completion date (Stratton, 2007). Schedule performance index becomes meaningless near the end of project, and for that reason earned value management is better at determining cost efficiency than schedule efficiency (Stratton, 2007).

Earned schedule. Earned schedule, a recent addition to the earned value management, is an improved method for calculating schedule performance index through the end of a project (Lipke, 2009). Earned schedule improves upon earned value management because it focuses on controlling project end-date versus focusing on controlling project end-cost (Lipke, 2009). According to Lipke (2009), most proponents of the earned schedule method of calculating schedule performance index differentiate it from traditional schedule performance index by denoting the earned schedule performance index with a subscript (t).

The subscript (t) denotes the time element of earned schedule; schedule performance index subscript (t) is divided by actual time (Lipke, 2009). Schedule performance index subscript (t) divided by the original project duration or planned duration yields the estimated final duration (Stratton, 2007). The same value based on traditional schedule performance index using normal earned value management calculations becomes ineffective because earned value and planned value are equal at the end of the project (Lipke, 2009). The objective of earned schedule is to determine when work is expected to be completed, rather than the value of work at completion (Stratton, 2007).

Naturally, the lack of experience mentioned previously also applies to advanced earned value management alternatives, such as earned schedule. Earned schedule is a

relatively new technique and is not in the Project Management Book of Knowledge (PMI, 2008). This fact is demonstrable by a simple key word search of the digital version of the Project Management Book of Knowledge. The keyword search revealed 60 references to earned value management and no references to earned schedule (PMI, 2008). The lack of references in the Project Management Book of Knowledge to earned schedule is also an indication of a lack of acceptance of the concept of earned schedule analysis by PMI, even though earned schedule is an improvement to earned value management and enables accurate forecasting of both cost and schedule performance (Stratton, 2007).

The previously described earned value management and earned schedule calculation is intimidating to most project managers, and many require subject matter expert support for implementation (Stratton, 2007). Additionally, PMI attempts to increase project manager proficiency and in turn improve project success rates, but few project management professionals gain enough experience to use these tools successfully (Stratton, 2007). The multiple choice certification test administered by the PMI does not create project manager proficiency with earned value management (Mersino, 2007).

Stakeholder implications. A stakeholder is a group or individual affected by or possessing interest in a project. Stakeholders include clients, senior management, project team members, sponsors, customers, and vendors. The sponsor role can be a major challenge in a project environment (PMI, 2008). According to Saak (2007), "The project sponsor is an individual who has a stake in the outcome of a project or someone who stands to benefit from the project" (p. 2). The project sponsor has the responsibility of communicating with internal the external stakeholders; state, federal, and local

government; customers; and the project management team (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

The sponsor bears the primary responsibility for and challenge of establishing a project strategy that supports the corporate mission, vision, and values (PMI, 2008). Parker (2008) said, "The challenge for executives is not to get people to follow them but to empower others (such as team leaders) to lead" (p. 184). Although directives, orders, mandates and other dictatorial edicts may work in the military, there is no reason to think that these strategies will work outside of the military (Parker, 2008). Parker suggested, "The new, more effective style is collaboration and participation rather than command and control" (p. 184). This tactic involves changing or evolving the culture of an enterprise so that the desired changes and process improvements are sustainable over the long haul (Parker, 2008).

Stakeholder or customer satisfaction is an important critical success factor (Wienclaw, 2008, Kerzner, 2000, Heagney, 2012). Success or failure of a project is dependent upon customer satisfaction, which is dependent upon well-defined and agreed-upon requirements of scope, schedule, and cost (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014). An enterprise must avoid change for change's sake. Oren (2009) said, "Politics and an organization's culture will play into the success of a project, but how these items quantitatively figure into the success equation is missing within the confines of research" (p. 21). Stakeholders often lack critical technical expertise and experience to lead properly and manage the teams of which they are in charge (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

Sometimes stakeholders will contract a subject matter expert to represent their interest in technical matters and to deal with project management organizations and project management teams. Additionally, stakeholders juggle requirements, scope, environmental requirements, and budget (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014). Finally, successful project managers must manage stakeholders' expectations and balance the triple constraints of cost, schedule, and scope while maintaining a positive working relationship and constructive communication.

Project management implications. Project management is the application of skills, capabilities, tools, and knowledge to a project to meet or exceed stakeholder requirements and expectations (Gokaydin, 2007; PMI, 2008). As such, projects are special forms of organizations. Nwagbogwu (2011) said, "The need to integrate effective measures to decrease project failures has become increasingly important among project practitioners" (p. 1). Typically, a project management organization is like other organizations designed to meet a specific goal or purpose but is also a special form of organization because of the relatively short-term nature of projects (Plumer, 2010; Tessema, 2010).

Dealing with subjectivity and uncertainty requires a certain amount of lived experience and emotional intelligence (Tessema, 2010). Additionally, emotional intelligence is important to leadership, general management, project management, and organizational design because of the potential of subjectivity and uncertainty (Tessema, 2010). Tessema (2010) said, "Emotional intelligence (EI) is a key factor in an individual's ability to be socially effective and is also a key determinant of effectiveness in communication with team members, key stakeholders, and external management" (p.

19). Emotional intelligence is the application of leadership abilities and maturity to support project management skills of communications, motivation, vision, and purpose (Mersino, 2007).

The literature reviewed falls short of addressing how project management can gain from and balance emotional maturity to improve project performance because none of the material discusses lived experiences of project managers in the context of project success or failure. Toljaga-Nikolić et al. (2011) said, "The implementation of project management concepts allows for the company management to efficiently execute the projects that comply with its strategic goals" (p. 45). When dealing with key factors, a project manager manages the time required to complete the project, the financial assets, and other resources during project execution (Toljaga-Nikolić et al., 2011).

On a daily basis, project managers face problems and obstacles that prevent them from completing the projects within the planned time, within planned costs and quality, and using the resources available to them (Toljaga-Nikolić, et al., 2011). Oren (2009) said, "The field of project management consists of a plethora of tool, techniques, and approaches seeking to aid the project manager in creating successful outcomes" (p. 21). Project management requires knowledge of systems theory and practices in order to be successful (Kerzner, 2006a). Project managers must manage the expectations of stakeholders, project management organization, and project management teams. Critical factors have to be managed so projects can be completed efficiently (Toljaga-Nikolić, et al., 2011).

Organizational effectiveness has organizational theory as its core (Kerzner, 1990). As stated earlier, there are disconnects between organizational theory and the practical

application of organizational theory in a project because of the short-term nature of projects (Kerzner, 2006b). Often times project teams do not have time to go through the cultural team-building stages of forming, storming, and norming stages before critical decision-making requirements are thrust upon them (Kerzner, 2006b). Specifically, a newly initiated project management team has to coalesce quickly into a functionally effective organization.

A project manager must deal with a certain amount of subjectivity in the data that inform his or her decisions (Tessema, 2010). Project managers struggle to effectively integrate and balance organizational needs, management needs, and leadership responsibilities (PMI, 2008). The reviewed literature suggests that there is a gap in knowledge in terms of the manner in which project managers integrate, process, and control the critical factors that lead to project success or failure.

Gap in knowledge. The reviewed literature indicated that not meeting customer expectations or requirements is a general definition of project failure (Shenhar & Dvir, 2007). There is some consensus among project managers of what project success and failure are. Also, there is general agreement that communication, triple constraints, stakeholder relationship, quality, and performance are important factors for managers to control during project implementation. Yet, there are no consistent methods or approaches that integrate the known issues into resolvable factors that project managers can address in the context of lived experiences (Shenhar & Dvir, 2007). Mishra et al. (2011) stated, "There is a need of empirical study to identify the critical success factors on the basis of organizational types and to identify the relationship among the various variables" (p. 356).

The reviewed literature identified many probable critical factors, but failed to link or integrate the identified critical success factors into a cohesive strategy that could lead to project success and prohibit or reduce the probability of project failure based on project managers' lived experiences, perceptions, and context (Bansal, 2009). Blackstone et al. (2009) said, "The causes of project failures have been well documented in the traditional project management literature" (p. 7,044).

A common reason given for project failure is that critical success factors are not specific enough for project managers to act on them (Zwikael & Globerson, 2006). Zwikael and Globerson (2006) defined critical success factors (CSFs) thusly; "CSF for any business consists of a limited number of areas in which results, if satisfactory, will ensure the organization's successful competitive performance" (p. 3433). Project management literature agrees that the most important or critical factors affecting project success or failure are clear goals, objectives, realistic schedules, and clear scope (Mishra et al., 2011). The lived experiences of leaders and managers are not expressed in an implementable context by project managers in the literature reviewed.

Quality, completeness, and functionality are important considerations when gauging the needs and expectations of the customer-stakeholder. Jha and Iyer (2006) suggested, "Quality is nothing but satisfaction with the appearance, performance, and reliability of the project for a given price range" (p. 1155). It is important to complete work within quality specifications, as quality is a measure of project performance (Jha & Iyer, 2006). Poor quality causes a loss of productivity, increased cost of rework or repair, loss of market share, and ultimately loss of business (Jha & Iyer, 2006).

The reviewed literature indicated that project managers must communicate with project leaders, stakeholders, staff, the program office, and others. Lack of communication is also a critical factor that can hinder project success. Communication must occur before launching the activity to scope it out, in the middle to discuss progress, at the end to provide results, to receive critiques from the stakeholders as necessary, and for detailed validation by the relevant expert users of the respective outcomes (Bansal, 2009).

A leader can overcome communication issues by clearly and regularly providing updates or status of scope, schedule, and cost. Project management literature agrees that proper management of stakeholder relationships is important and will improve the chances of a successful project outcome if good communication channels are established and maintained (Bansal, 2009).

Equally important is the timing of communication, which is just as important as the message itself (Bansal, 2009). Communication must be clear, concise, well understood, and free flowing between leaders, team members, and stakeholders, while fostering a spirit of cooperation during long efforts (Bansal, 2009). Further, the objective of regular communication is to make sure that each team member and stakeholder has a clear understanding of the project or program and its requirements (Bansal, 2009). A question explored in this study is whether lived experiences enhance or hinder project management and stakeholder communication. In summary, the reviewed literature does not express how lived experiences can improve communications.

Numerous texts and articles include the environment of technological innovation as issues that confront project management, but only few acknowledge the implications

of lived experiences of general leadership, general management, and the organization on project management and technology (Bansal, 2009). Zwikael, and Globerson (2006) said, "After myriad studies into the main cause of project failure, almost every project manager can list the main reasons or factors responsible for project failure and project success" (p. 3433). In summary, the literature reviewed does not express how lived experiences can resolve the gaps in knowledge that lead to project failure.

Finally, the gaps in knowledge are adversely amplified because most project management teams are assembled because of technical expertise rather than their general leadership and management ability, knowledge, training, and lived project management experiences. Additionally, the role of the project manager is amplified because he/she is a key decision-maker and the senior most expert on a project management team (Bradshaw, 2008; Mishra et. al, 2011). Lastly, an experienced project manager understands the context of these shortcomings and pursues leadership and management training as a method to improve his or her personal performance by supplementing his or her lived experiences.

Conclusions

The documents used in this review consisted of peer-reviewed articles, books, and dissertations from current and past thought leaders in the areas of project management, leadership, and management. Other sources such as Niccolo Machiavelli's (1513/1992) *The Prince,* first published in 1513 and Sun Tzu's (2012), *The Art of War* first published during the 6th century BC, add a historic perspective of management, leadership, power, and authority. Sun Tzu and Machiavelli provide a unique historic viewpoint of the political impacts of decision-making and team building, while illustrating the point that

many problems of leadership and management are not new and remain relevant today. For example, Sun Tzu provided examples of the strategic use of power and authority to overcome obstacles.

Finally, the focus of this review was the past and current discourse on critical factors affecting project success or failure, project management philosophies, leadership strategies, and management methods. Appendix E lists the publication year and type of documents reviewed that have been instrumental in defining the gap in knowledge concerning critical factors that can lead to project success or failure.

My review also covered foundational theories, current trends, and new approaches in the areas of general leadership, general management, and organization theories and approaches documented in books, articles, and other sources. During this review, I identified a substantial knowledge gap among general leadership, management, and organizational approaches to the specialized field of managing projects. Yet, general leadership and management of operating enterprises face similar problems of projects, but the environmental and technological challenges are different.

I conclude that the environmental and technological challenges of project management are not well developed in the context of lived experience of project managers and current literature related to project success or failure. My review of literature also concludes that there is a need to conduct a study of the primary critical factors that can cause project success or failure. Accordingly, the next chapter will define a strategy, method, and approach to determine the primary factors affecting projects from project managers' perspective and lived experiences.

Summary

Chapter 2 contains a review of pertinent literature and thoughts about management, leadership, and organizational theory regarding project management. The reviewed literature substantiated that no previous study has established the primary factors that contribute to project success or failure from the perspective of a project manager, program manager, project management organization, or stakeholder. Chapter 2 contains a synopsis of the major conclusions, findings, and procedural issues related to the gap in the knowledge identified in prior studies, articles, books, dissertations, and other pertinent literature. The articles, books, and dissertations reviewed in Chapter 2 lay the groundwork for the research design found in Chapter 3. Copies of all study documentation are found in Appendices A, B, C, D, E, F, G, H, I, and J.

Chapter 3 contains a detailed discussion and description of the participants, research design, methodology, and analysis tools. Chapter 3 includes an outline of methods and instruments, as well as a description of the intended participants, their location, the location of the study, research instrumentation, research procedure, the data collection process (including letters of permission), ethical considerations, data processing, analysis methods, and validity. Chapter 3 also discusses the population sample size determination method and justification.

Chapter 3

Research Methodology

The purpose for implementing this research was to study project management professionals' perceptions of project failure and success based on lived experiences. The research used an interpretative phenomenological research methodology, which allowed for the development of meaning in the context of lived experiences that contribute to project success or failure, analyzing the perceptions of project managers who participated in this study.

An advantage of qualitative research is that it provides an accurate description of a phenomenon under investigation (Christensen et al., 2010). Moreover, this approach allowed me to use three data collection approaches to acquire and validate data and compare them to the previous data collected, which resulted in a spiral of self-validated data using method triangulation. According to Christensen et al. (2010), method triangulation results in an understanding of perceptions of a phenomenon.

Overview

Chapter 2 documented the gap in knowledge related to the high likelihood of projects failing because of external and internal factors, some of which are outside of a project manager's control. Specifically, the external factors include variability of project constraints (quality, performance scope, schedule, and cost) imposed because of stakeholder programmatic or strategic needs (Kerzner, 2006b). A project manager has little or no control and influence over external factors affecting the project constraints (Kerzner, 2006b).

However, a project manager can document external issues and use internal forces within his or her control to attempt to counteract some external factors (Kerzner, 2006b). Consequently, this counter action may affect the project constraints. Therefore, a standard project manager response or counteraction to a change in scope, schedule, or cost is to document the change and request proportional additional time (schedule) or funding (cost) using a change control process (Kerzner, 2006a).

Accordingly, control of change (change control) involves renegotiation of agreed-upon requirements, documenting the effect to project objectives, renegotiating previous agreements, and documenting approval by the stakeholders (PMI, 2008). This process requires that strong relationships and good communication exist between stakeholders and the project manager (Kerzner, 2006a). Ideally, the best relationship between stakeholders and the project manager is one of open and honest communication (Kerzner, 2006a).

Internal factors are within the project manager's capability and responsibility to implement and manage (Kerzner, 2006a). Specifically, processes such as reallocation of resources, reorganizing tasks, re-planning, schedule revision, and change control are some of the elements or factors that a project manager can control, but are subject to other stakeholders' approval (Kerzner, 2006a; PMI, 2008). Additional internal factors include the project manager's personal leadership style, skills, management ability, experience, and emotional maturity (Kerzner, 2006a).

The qualitative interpretative phenomenological research approach used in this study explored the external and internal environmental conditions that influence project constraints while seeking to understanding established project management process rigor

thought to prevent project failure. Additionally, this study solicited recommendations, opinions, and potential corrective actions for project failure. Christensen et al. (2010) said, "Qualitative research is an interpretive research approach that relies on multiple types of subjective data and is used to investigate people in particular situations in natural environments" (p. 63). Lastly, this research was designed to examine patterns of behavior, culture, beliefs, phenomena, and language that groups adopt over time based on project managers' lived experiences (Creswell, 2007).

Research Design

The qualitative interpretative phenomenological approach used in this research examined the perceptions of project managers based on lived experiences regarding the primary issues or factors contributing to project success or failure in three phases. Additionally, the interpretative approach allowed in-depth examination of a specific system or process based on lived experiences (Creswell, 2007). The three phrases included a pilot study, a self-administered questionnaire, and one-on-one interviews designed to extrapolate the lived perceptions of project managers regarding project success or failure.

Each phase was designed to solicit descriptive responses and create a portrait of the current state of project management's lived perceptions. Specifically, an interpretive phenomenological study is an empirical inquiry used to examine real-life phenomena in context (Yin, 2009). In each phase, I collected, compared, and categorized demographic and biographical data along with the participants' responses.

Potential participants in each phase received a synopsis of the research purpose, question, and method, as well as a biographical and demographic questionnaire whose

purpose was to determine their project management experience level, professional certification, and other pertinent information. Finally, the participants' biographical and demographic was compared to Table 2 in order to determine if the respondents had sufficient lived experience to meet the needs of an interpretative phenomenological research of this nature.

Table 2

Participants' Experience Criteria

Qualifications	Experience	Certification	Education
Experienced	Three or more years or 4500 hrs.	Certified	BS or Equivalent
Experienced	Three or more years or 4500 hrs.	Uncertified	BS or Equivalent
Experienced	Five or more years or 7500 hrs.	Certified	HS or Equivalent
Experienced	Five or more years or 7500 hrs.	Uncertified	HS or Equivalent
Inexperienced	Less than three years or 4500 hrs.	Uncertified	BS or Equivalent
Inexperienced	Less than three years or 7500 hrs.	Uncertified	HS or Equivalent

Reliability and validity. Method triangulation involves the use of multiple research methods to enhance the understanding of the data collected (Christensen et al., 2010; Leedy & Ormrod, 2010). My purpose for using this approach was to increase reliability and validity of the data collected in each research phase (Altrichter, Feldman, Posch, & Somekh, 2008; Cohen & Manion, 2000). Additionally, I wanted to develop an understanding of a complex phenomenon without the strong controls required of experimental studies (Christensen et al., 2010).

In summary, data collected during the pilot study, self-administered questionnaire, and face-to-face open-ended interviews were compared to each other. The objective of this approach was to give the participants the opportunity to give an unqualified assessment of their perceptions of the factors contributing to project success or failure. Figure 4 presents an illustration of the method triangulation approach.

Figure 4. Method triangulation approach.

The method triangulation approach was used to understand the complexity of project success or failure while delving into each participant's perspective to understand the meaning of his or her comments. My intent was to add to the wealth of existing knowledge about project management by interpreting the lived experiences of subject matter experts.

At the beginning of the study, each respondent was asked to complete the demographic and biographical portion of the questionnaire as completely as possible. Also, each respondent was asked to review and accept the informed consent form (Appendix C) in order to participate. Further, each participant was given a copy of the confidentiality statement (Appendix H) for review. Lastly, the flowchart in Figure 5 is a step-by-step illustration of the process implemented during this research.

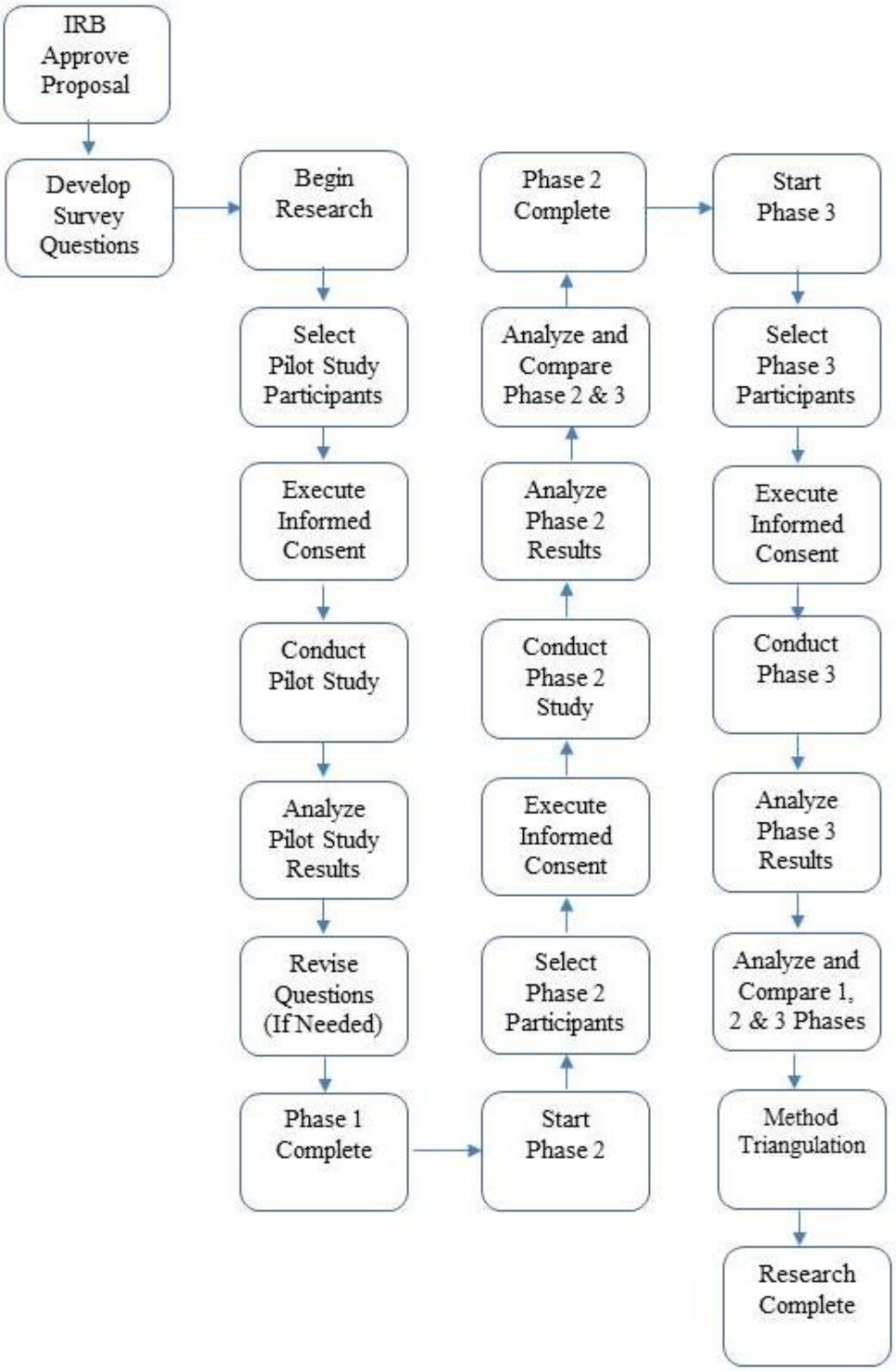

Figure 5. Methodology flow diagram.

Pilot study. As stated previously, the first phase of this research involved a pilot study. A pilot is small study conducted to test and validate aspects of the research design and to make design adjustment prior to follow-up phases (Christensen et al., 2010). Additionally, the pilot study established and used a control group to perform an initial validation of the research instrument. The control group consisted of individuals randomly selected from the potential pool of participants; the control group self-administered the pilot study questionnaire.

The pilot study questionnaire was organized into three parts using SurveyMonkey. The three parts of the pilot study consisted of an introduction, informed consent, and confidentiality statement (Appendix L); pilot study biographical and demographic questionnaire (Appendix M); and the 14 question pilot study questionnaire (Appendix N). Each pilot study participant had to complete the informed consent form. Participants that did not meet the informed consent requirements were not allowed to complete the rest of the pilot study.

The intent of the pilot study questionnaire was to gather information about the primary factors affecting project success or failure and to validate the approach for each part of the pilot study. The remaining participants in the control group were asked to review, complete, and comment on each part of the pilot study. The control group was allowed to refine, modify, add, or delete questions for the follow-up phases, if needed, resulting in a validated self-administered questionnaire.

Validated questionnaire. The self-administered questionnaire followed the pilot study phase. The validated questionnaire was organized into the same three parts as used in the pilot study: the introduction, informed consent, and confidentiality statement

(Appendix O); biographical and demographic questionnaire (Appendix P); and the questionnaire (Appendix Q). The intent of the questionnaire was to gather general information about the primary factors affecting project success or failure and did not draw inferences about the contributory relationships between and among the project variables. Specifically, the validated questionnaire was composed of 14 open-ended questions that solicited recommendations, opinions, and potential corrective actions.

The purpose of the questionnaire was to develop an understanding of the lived experiences of the participant's with regard to the general research question and problem. The survey or open-ended self-administered questionnaire data collection instrument was completed by each research participants. Lastly, an analysis of the results of the self-administered questionnaire determined if additional clarification could be achieved during the individual interview sessions.

One-on-one interviews. The third and final phase consisted of one-on-one interviews. The purpose of the final phase was to address remaining or unanswered questions from prior phases. The one-on-one interviews were initiated using the same the introduction, informed consent, and confidentiality statement (Appendix O); biographical and demographic questionnaire (Appendix P) and questionnaire (Appendix Q) used in the previous phase. To clarify, an interview is a one-on-one situation in which an interviewer asks an interviewee a series of questions (Christensen et al., 2010). In this phase, one-on-one interviews were used to determine inferences about the contributory relationship of research variables.

Comparison and analysis of the resulting data of each phase resulted in a validation of the conclusions established by each phase. The results were triangulated by

comparing data results from all preceding phases. The three phases of data collection set the stage for the next important element of my research design: called method triangulation. Specifically, method triangulation was used to compare and contrast data collected at each phase, as well as to improve data reliability and validity.

Lastly, my purpose for using an interpretive phenomenological study was to make a distinction between a phenomenon and its context, if the distinctions are not plainly evident (Yin, 2009). In summary, the interpretative phenomenological research method created understanding and discerned meaning based in context of the lived experiences of project managers (Yin, 2009).

Population description. The target participants of the study consisted of experienced project managers currently working in project management related functions. Also, the participants in each phase did not have to be exclusive to each phase. The selection of participants was random and voluntary to reduce bias. An additional qualifier was the participants' project management experience level as shown in Table 2 page 82. Participants were selected based on availability, convenience, and willingness to participate (Christensen et al., 2010).

Demographic and biographical data were used to characterize the participants. The senior most experience level was based on the PMI project management professional experience criteria requirements. The target participants were those project management professionals qualified to sit for the PMP certification examination or who had already achieved PMP certification. PMI membership or PMP certification was not a requirement to participate but was used to evaluate qualification.

A large proportion of participants were expected to be project managers who specialized in IT, defense, and intelligence projects because of my proximity to the federal defense and intelligence communities in metropolitan Washington, DC. Defense and intelligence participants did not require permission from their respective federal or state employers prior to participating or supporting this research, because the research was not industry specific. As a result, a premise, recruitment, and name (PRN) form (Appendix I) while available, was not needed.

Geographical location (site description). The intended location of the study was the metropolitan Washington, DC area. Metropolitan Washington consists of the DC, Northern Virginia, and Southern Maryland. In addition, the target participant population consisted of members of the PMI chapters in the Maryland, Northern Virginia, and DC metropolitan area, and most were federal or state employees. Participants from outside this region were not excluded.

Population access. I gained population access by means of LinkedIn and e-mail. LinkedIn is an Internet-based business-oriented social networking service. I posted invitation notices on LinkedIn professional group pages for PMI, IPMA, EVM, and other groups that have a specific interest in project management related topics. I also invited several professional associates to participate in this study.

It should be noted that, PMI, IPMA, and AACE members were not approached at any organized events or seminars and therefore permission to use these premises were not required. Further, PMI, IPMA, and AACE members were not asked to speak on behalf of or as representatives of PMI, IPMA, and AACE organizations. The request for permission to conduct research and permission to use these premises (PRN) was

developed and both are found in Appendix A and I, respectively. Neither form was needed or used for the reasons stated previously.

Participant selection. The PMI criteria to achieve PMP certification was the baseline experience level required of study participants or respondents. Specifically, the criterion was that a project manager seeking PMP certification must meet the PMI criteria required to qualify for certification shown in Table 1 (page 19). Table 1 illustrates the minimum qualifications of project managers seeking PMP certification.

The participants for this study were self-selected (volunteer), selected based on recommendation, by nomination, or by request. In addition, other participants emerged through word of mouth and Internet sources as data collection was in progress. Non-PMI members were not excluded from this study.

The intended sample size of this study was approximately 12 to 20 participants, which is the typical population size used in qualitative case studies. Black (1999) said, "In the real world of limited resources, there is often a need to balance the choice of design against the potential sample size which will result in selecting the 'best' plan as opposed to the ideal" (p. 59). Also, participants were allowed to contribute to more than one phase as their time permitted.

Identification and invitation. Identification and invitation to participate began with proposal approval by the University of Phoenix Internal Review Board (IRB). Data collection began following participant identification. Each participant had to indicate acceptance of the informed consent form (Appendix C and I [online version]) and was advised of the voluntary nature of his or her participation as well as his or her option to withdraw at any time during the process by mail, e-mail, or phone call.

Each participant received a copy of the semi-structured self-administered questionnaire or interview questions depending upon the research phase for which they volunteered prior at the start of data collection. Additionally, each pilot study participant had the option to propose questions. Each participant was asked to participate in either the pilot study, the self-administered questionnaire, or the one-on-one interview. All responses were compiled and analyzed prior to the start of each follow-up phase. The interview phase was initiated using the same questionnaire as the second phase.

During the interview sessions, care was taken to address only open issues or seek clarification needed resulting from prior phases. After the interview data were complied, they were analyzed and compared to responses from the prior phases. The data collection phases produced additional detail and information because of method triangulation, as each prior phase provided cumulative data. The result was a culmination of data validated by each previous phase.

Research Method

Method triangulation involves three stages of data collection (in this case, a pilot study, a questionnaire, and individual interviews) supported with field notes and observations (Auerbach & Silverstein, 2003; Creswell, 2009; Leedy & Ormrod, 2010; Yin, 2009). The initial stage was a formulation of survey questions and initial responses and was called the pilot study phase. The pilot study solicited initial data and validated proposed study questions.

The results of each phase were validated by the previous phase by comparing responses to the preceding results. The pilot study phase was followed by the self-administered questionnaire, which was followed by the one-on-one interview phase.

Data Collection

Data collection started after IRB approval. I input the draft questionnaire into SurveyMonkey, an Internet-based suite of programs for survey development, data collection, data analysis, and presentation. Next, potential participants were notified of the start of the research. Notices soliciting participants were posted on LinkedIn targeting PMI, IPMA, EVM, and other groups that have a specific interest in project management related topics. LinkedIn is a business-oriented social networking service used for professional networking and career development.

All participants were volunteers (no remuneration involved), and some were my professional associates, peers, and co-workers. Phase one participants were forwarded a link to the questionnaire. Participants were allowed to respond or not respond to any question at their discretion. At the designated time, I reviewed the completed phase one (pilot study) responses. I identified minor corrections and changes, which indicated the questionnaire was responsive to the research question and problem.

Next, I incorporated the minor revision, as suggested by the pilot study, which resulted in a validated questionnaire. Phase two participants were e-mailed a link to the validated questionnaire. While phase two respondents completed the questionnaire, I analyzed the pilot study results. After closure of the phase two, I analyzed the phase two results. I then compared and contrasted phase one and two responses.

Phase three one-on-one interviews used the same validated questionnaire as phase two. The primary objective of phase three was to clarify data acquired during prior phases. Participants were e-mailed a link to the validated questionnaire. My initial intent

was to use the questionnaire just to collect demographic and biographical data and as a conversation starter to initiate phase three interviews.

Phase three participants was asked to complete the demographic and biographical section and optionally they could complete the entire questionnaire in advance and then discuss their comments at our appointed time or just wait until the scheduled interview. The interviews were conducted using the interview script found in Appendix J. Handwritten reflective notes were compiled immediately after each interview (Creswell, 2007).

Data Analysis

A review and analysis of the data was conducted after each phase of data collection. The data was analyzed using a data analysis spiral technique (Creswell, 2007) with the objective of achieving data immersion and method triangulation. The data analysis spiral is a method for identifying categories and themes and for classifying, summarizing, and integrating data (Creswell, 2007; Leedy & Ormrod, 2010). Emerging themes were documented after reviewing the questionnaire responses from each phase.

Phase one was reviewed for trends and themes. Phase two was also reviewed for trends and themes. The results of phase one was compared and evaluated against phase two for similarities, differences, and outliers using key word searches. Several themes emerged based on a review of individual responses at each research phase through an organized and reflective study of the participants' experiences as they described them. I also focused on determining the underlying meaning of responses.

Each theme was compared and categorized to the research question, purpose, emerging concepts, and issues identified during the literature review. Next, a comparison

and analysis of phase one and two data was conducted to determine if there was a convergence of themes from phase one and two. The comparison was used to determine if biases existed in either phase.

A third data set was gathered using the same survey questions in preparation for one-on-one-interviews. A comparison and analysis of phase one, two, and three data was performed to validate the convergence of themes from phase one and two. One-on-one interviews were conducted to clarify remaining questions or issues from the previous phases. The additional data collected during the final phase (phase three) lead to theme convergence.

I made handwritten notes and reflective observations from the one-on-one interviews in a journal. Emerging themes were compared and contrasted to each other to gain a better understanding of the project failure and success phenomenon. Christensen et al. (2010) stated that method triangulation results in an understanding of perceptions of the phenomenon.

Research artifacts compiled during the research included questionnaires, semi-structured interview questions, field notes, and reflective notes. Yin (2009) contended that the right artifacts could provide information in addition to what may be achieved by means of observation alone. Participants were asked to make notes and personal reflections available to the researcher after each research stage.

Notes and reflections provided by participants are also research artifacts. Data from these artifacts were categorized by key ideas, themes, and repeating patterns along with survey and interview responses. Last, the accumulation of data from each phase

buoyed by method triangulation of the responses for clarification and facilitated validation of results by cross verification.

Protection of human subjects. Minors did not participate in this study. Minorities, including pregnant women or elderly persons, were allowed to participate upon signing an informed consent. Potential harm was minimal because the nature of the inquiry was similar to that to which an individual would be exposed to in normal daily activities. Participants were free to withdraw at any time during the research process.

Participants of this study who were pregnant could contribute to this study because their participation would not affect the medical condition of the fetus or the mother. The rights and safety of the participants of this research study were of overriding importance and were not violated. Each of the participants that agreed to contribute to the study understood, agreed to, and signed the informed consent form (Appendix C) prior to participation.

Confidentiality maintenance. The rights of the participants, including confidentiality, are protected. Participants' names will not be published or presented without express written permission or consent. Consent to use participants' names is not given by the informed consent form (Appendix C) or the confidentiality form (Appendix H). During collection and analysis, confidentiality of the participants' identity was protected and maintained using SurveyMonkey, which is encrypted and password protected.

After analysis was complete, the data and the identification of the participants were stored separately in a locked area where they will remain for 3 years, after which all

records will be destroyed using a shredder and subsequently incinerated. I am the only person that had access to the SurveyMonkey password.

Conclusion

This purpose of this interpretative phenomenological qualitative study was to examine project management professionals' perceptions and lived experiences of project failure and success. The research design and method solicited comprehensive open-ended responses, creating a spiral of data that triangulated into conclusive participant perceptions and lived experiences. This chapter also contained a discussion of the ethical considerations of the research, namely the efforts made to respect and protect the rights, and confidentiality of the study participants.

Project success or failure can be ambiguous because the interpretation of success or failure of a project depends upon the evaluator's perspective and objective For example, a chief financial officer (CFO) may believe that a project is a failure because of cost and schedule overruns. Additionally, a project management organization may believe that a project was successful simply because they made a profit and collected a bonus or award fees for the project. In truth, a project is successfully only if all parties accept that project constraints adequately meet the intended purpose, function, and capability as defined by the stakeholders' requirements.

Summary

Chapter 3 contains a description of the research design, method, procedure, data collection method, analysis methods, and process validity. Additionally, Chapter 3 also contains a description of the participants and their location, and documented the participant selection process, along with the permissions required for participation. In

summary, Chapter 3 addresses the research methods, the research procedure, data collection process, letters of permission, and analysis methods. Copies of all study documents and instrumentation are found in Appendices A, B, C, D, E, F, G, H, I, and J.

Chapter 4 contains the results of the implemented research method and data collection procedure. Chapter 4 describes the relevant demographic and biographical data collected and their relevance to the research question. Finally, emerging themes are documented based on the perceptions and lived experiences of project managers regarding project success or failure.

Chapter 4

Results

This qualitative interpretative phenomenological research sought to examine the lived experiences and perceptions of project managers regarding the success or failure of projects. Accordingly, this chapter summarizes the results of data collected during the research. The research was conducted in three phases designed to extrapolate the lived experiences and perceptions of project managers. The phases included a pilot study questionnaire, a self-administered questionnaire, and one-on-one individual interviews. The intent of each phase was to collect open, freely given, and unbiased descriptive responses to create a representation of the current state of project management based on their first-hand experiences.

Phase one (pilot study) consisted of a self-administered questionnaire. The primary purpose of phase one was to test if the draft questionnaire (Appendix G) would elicit responses based on each participant's lived experiences regarding the research problem and question. Specifically, the pilot study was used to validate the survey questionnaire and collect initial data. The second phase entailed the application of the self-administered questionnaire validated during phase one. The third phase involved a series of one-one-interviews that followed the completion and analysis of phases one and two. Phase three used the same self-administered questionnaire from phase two to initiate the one-on-one interviews.

At the beginning of each phase, the participant was asked to acknowledge acceptance of informed consent and review a synopsis of the research purpose and question. Each phase included a demographic and biographical section followed by the

questionnaire. The phase three participants were given the option to review and complete the validated questionnaire prior to the one-on-one interview.

Methods

Initial approval to start research was received from the IRB on May 2, 2014. After receiving initial IRB approval, I converted the IRB approved introduction (Appendix B), informed consent (Appendix C), biographical and demographic questionnaire (Appendix F), the draft questionnaire (Appendix G), and confidentiality statement (Appendix H), from Microsoft Word to SurveyMonkey. SurveyMonkey is an Internet-based customizable suite of programs for survey development, data collection, data analysis, and presentation.

During the conversion I refined the draft questions in order to yield improved alignment to the research question, correct grammatical errors, and reduce the number of questions from 21 to 14 to reduce the time needed to complete the questionnaire. Next, potential participants were notified of the start of the research after initial IRB approval was received. Final IRB approval (Appendix K) was granted on June 17, 2014.

I posted notices soliciting participants on LinkedIn targeting PMI, IPMA, EVM, AACE, and other groups that have an interest in project management related topics. Metropolitan Washington, DC PMI chapter members were also asked to participate via e-mail, telephone, word of mouth, or LinkedIn post. All participants were volunteers (no remuneration was given), and some were professional associates.

Thirty phase one participants were forwarded a link to the questionnaire and asked to complete it by June 13, 2014. During phase one, participants were allowed to respond or not respond to any question at their discretion. Phase one resulted in minor

questionnaire refinements, but nevertheless contained usable responses that are included in the following results. In this manner, phase one (the pilot study) validated the questionnaire and showed it was responsive to the research question and problem.

Next, the validated questionnaire was used during phase two. Similarly, phase two participants were e-mailed a link to the validated questionnaire and asked to complete it by June 27, 2014. After the completion of phase two, I compared and contrasted results from phases one and two.

Additionally, phase three one-on-one interviews used the same validated questionnaire from phase two. The intent was to collect demographic and biographical data and as a conversation starter to initiate phase three interviews. As before, participants were e-mailed a link to the validated questionnaire and asked to complete it by July 4, 2014.

The primary objective of phase three was to clarify data acquired during prior phases. Phase three participants were also informed that they could complete the entire questionnaire in advance and then discuss their comments at an appointed time or simply wait until the scheduled interview to share their responses.

Each phase three respondent opted to complete the questionnaire in advance of the interview. The quantity and quality of the written responses to the phase three questionnaires reduced the interview time and number of one-on-one interviews needed for method triangulation. Next, four one-on-one meetings were scheduled and held upon return of the questionnaires to the researcher. The interviews were conducted using the interview script found in Appendix J. Handwritten notes were taken during the one-on-one interviews.

A positive result of giving the respondents the opportunity to complete the questionnaires in advance was that it reduced the amount of time spent during one-on-one interviews. In addition, the interview time was spent focusing on clarifying interviewees' written responses, when needed. Interview participants were allowed to ask questions as well as respond to questions. One-on-one interviews were completed on July 11, 2014.

A review and analysis of the data was conducted after each phase. The review and analysis of phases one and two data were used to identify areas that needed clarification or additional data during the final phase (phase three). The culmination and combination of the three phases allowed for method triangulation of the responses for clarification. The three data collection methods were compared to each other to gain a better understanding of the phenomenon of project failure and success. To explain, Christensen et al. (2010) stated that method triangulation results in a better understanding of perceptions of the phenomenon under investigation.

The approximate time to complete the self-administered questionnaire was about 60 minutes. The follow-up one-on-one interviews took approximately 30 minutes each. Briefly, the demographic and biographical data were collected during each phase of the research to verify and document the respondents' qualifications to validate and respond to the questionnaire as it pertained to the research problem and question. The demographic and biographical data obtained indicated that all of the participants met minimum professional, educational (high school graduate or equivalent), and experience (5 years) requirements, as described in Chapters 1 and 3.

Demographic and Biographical Data

There were 70 respondents in this study, but only 48 completed the entire research questionnaire. Twenty-three participants were from the United States, five were from the United Kingdom, two were from Australia, two were from Germany, two were from Kosovo, and 14 were from India, Pakistan, Switzerland, Portugal, Canada, Thailand, Greece, South Africa, France, Austria, Jordan, Egypt, Netherlands, and Bahrain, respectively.

The 48 participants were from 19 separate countries, each of which has a high level of industrialization and unencumbered access to the Internet. In summary, the demographic and biographical section of the questionnaire verified and documented the respondents' ability to validate and respond to the research problem and question.

The resulting demographic and biographical data demonstrate that each of the 48 respondents had the lived experience to respond adequately to an interpretative qualitative phenomenological research of this nature as described in Chapters 1 and 3. Table 3 presents a listing of the countries of origin of the 48 participants.

E-mail, SurveyMonkey, and LinkedIn tools increased access to a diverse pool of national and international respondents. Also, SurveyMonkey and LinkedIn enabled the researcher to expeditiously acquire input from project management subject matter experts from around the world. That is to say, an unintended but positive consequence of using e-mail, SurveyMonkey, and LinkedIn was that the researcher was able to reach a diverse sample of participants quickly.

Table 3

Number of Respondents by Country

Phase One Participants		Phase Two Participants		Phase Three Participants		Total	Total
Country	Number	Country	Number	Country	Number	Participants	Countries
USA	9	USA	8	USA	6	23	1
UK	1	UK	2	UK	2	5	1
		Australia	1	Australia	1	2	1
		Kosovo	1	Kosovo	1	2	1
India	1					1	1
Pakistan	1					1	1
Switzerland	1					1	1
		Germany	2			2	1
		Portugal	1			1	1
		Canada	1			1	1
		Thailand	1			1	1
		Greece	1			1	1
		South Africa	1			1	1
		France	1			1	1
				Austria	1	1	1
				Jordan	1	1	1
				Egypt	1	1	1
				Netherlands	1	1	1
				Bahrain	1	1	1
	13		20		15	48	19

The diversity of the respondents exceeded expectations because expected to only reach PMI members in the Metropolitan Washington, DC area because of their close proximity to that location. However, the use of the e-mail, SurveyMonkey, and LinkedIn increased the study's reach and enabled the collection of data from around the world as shown in Table 3. The education, experience, and certification demographic and biographical data of each research phase are presented in the following sections and tables organized by research phase.

Pilot Study (Phase One) Demographics

Eighteen participants started phase one, but only 13 completed the entire questionnaire. However, 13 exceeded the minimum number of participants (12) desired

for the methodology. The participants' education levels are shown in Table 4. One hundred percent of the participants met or exceeded the minimum education requirements (high school graduate or equivalent) identified as desirable in Table 2 (page 82). One respondent indicated Microsoft Project training beyond college.

Table 4

Pilot Study Participants' Education

Answer Options	Response Percent	Response Count
High school or GED	0.0%	0
College	26.7%	4
Graduate School	53.3%	8
Post Graduate School	20.0%	3
Other (please specify)		1
Answered question		15
Skipped question		3

Project management experience is shown in Table 5. Sixty-seven percent (10) of the pilot study participants had 9 or more years of experience as a project manager. One hundred percent of the participants met or exceeded the minimum experience requirements (5 years with high school graduate or equivalent requirement) identified as desirable in Table 2 (page 82).

Table 5

Project Management Experience

Answer Options	Response Percent	Response Count
1-3 years	0.0%	0
3-6 years	13.3%	2
6-9 years	20.0%	3
9 or more years	66.7%	10
Answered question		15
Skipped question		3

The number of years of PMP certification is shown in Table 6. Sixty-four percent (seven of 11) of the respondents held a certification for greater than 3 years. Sixty-seven

percent (10 of 15) of the respondents held PMI-PMP certification. In addition, the remaining 33% (three of 15) of the respondents held other project management related certification. One respondent each held PRINCE2, IPMA-D, Agile PM, and GPM certifications; one respondent was a Certified Primavera Trainer; and one held a Program Management Professional (PGMP) certification.

Table 6

PMP Certification in Years

Answer Options	Response Percent	Response Count
1-3 years	36.4%	4
3-6 years	9.1%	1
6-9 years	27.3%	3
9 or more years	27.3%	3
Answered question		11
Skipped question		7

Table 7 establishes the diversity of project management expertise. Sixty-three percent (five of eight) of respondents specialized in the planning and scheduling aspects of project management. Further, two respondents had no specific project management experience, one respondent had construction and maintenance repair operations (MRO) experience, one respondent had contract management experience, and one had risk management experience.

Table 7

Area of Expertise

Answer Options	Response Percent	Response Count
Planning and Scheduling	62.5%	5
Cost Management	12.5%	1
Estimating	0.0%	0
EVMS	25.0%	2
Other (please specify)		5
Answered question		8
Skipped question		10

Table 8 establishes the diversity of project types reported by respondents. Many of the respondents indicated experience with multiple types of projects. Nine had IT project experience. Six participants each had experience in construction and engineering. Seven respondents had other project experience in the areas of professional services contracts (e.g. marketing and outreach, research, training, technical assistance), MRO, telecommunication, organizational development, planning, preventive maintenance and operational, contracts, requirements management, and business process re-engineering.

Table 8

Types of Projects

Answer Options	Response Percent	Response Count
Construction	40.0%	6
Engineering	40.0%	6
IT	60.0%	9
Other (please specify)	46.7%	7
Answered question		15
Skipped question		3

Table 9 addresses the respondents' number of years of leadership experience. Ninety-three percent (14 of 15) of respondents had project management leadership experience. All respondents had project management leadership experience greater than 3 years. Seven (50%) of respondents had more than 9 years of leadership experience.

Table 9

Leadership Experience in Terms of Years

Answer Options	Response Percent	Response Count
1-3 years	0.0%	0
3-6 years	28.6%	4
6-9 years	21.4%	3
9 or more years	50.0%	7
Answered question		14
Skipped question		4

Self-Administered Questionnaire (Phase Two) Demographic

Twenty-five participants started the pilot study phase and 20 participants completed the entire questionnaire. Also, 14 of 20 (78%) respondents had a graduate school or greater level of education. One hundred percent of the phase two participants met or exceeded the minimum education requirement of high school graduate or equivalent identified as desirable in Table 2 (page 82). Table 10 presents participants' education level.

Table 10

Participants' Education

Answer Options	Response Percent	Response Count
High school or GED	10.5%	2
College	15.8%	3
Graduate School	26.3%	5
Post Graduate School	47.4%	9
Other (please specify)		3
Answered question		19
Skipped question		6

Table 11 presents participants' number of years of experience. Eighty percent (16) of the phase two participants had 9 or more years of experience as a project manager. Also, the majority of the phase two participants met or exceeded the minimum 5 years of experience in Table 2 (page 82).

Table 11

Project Management Experience

Answer Options	Response Percent	Response Count
1-3 years	5.0%	1
3-6 years	5.0%	1
6-9 years	10.0%	2
9 or more years	80.0%	16
Answered question		20
Skipped question		5

Table 12 establishes participants' number of years of project management certification. Nine of the 14 (71%) respondents held a certification for greater than 3 years. In this case, 13 of the 20 (65%) respondents held PMI-PMP certification. Further, four of the 20 respondents held other project management related certification. Specifically, certifications included PMP, APMP, PRINCE2, MSP, PRINCE2, IPMA C-level, IPMA C-level, IPMA-D, PRINCE2 Practitioner, CHAMPS2 Practitioner, Agile PM Practitioner, GPM-b, ITIL, and CBAP.

Table 12

PMP Certification in Years

Answer Options	Response Percent	Response Count
1-3 years	28.6%	4
3-6 years	50.0%	7
6-9 years	7.1%	1
9 or more years	14.3%	2
Answered question		14
Skipped question		11

Table 13 presents the diversity of participants' project management experience. Eleven of the 14 (78%) of the respondents specialized in leadership. Also, three of 14 (24%) respondents specialized in the planning and scheduling aspect of project management. In addition, the majority of the participants performed in a leadership role. Leadership is an important area of expertise and was identified as a desirable skill in the previous chapters. Finally, the "other" category includes those respondents that reported possessing expertise in all of the areas shown in Table 13.

Table 13

Area of Expertise

Answer Options	Response Percent	Response Count
Planning and Scheduling	21.4%	3
Cost Management	0.0%	0
Estimating	0.0%	0
EVMS	0.0%	0
Contract Management	0.0%	0
Leadership or management	78.6%	11
Other (please specify)		6
Answered question		14
Skipped question		11

Table 14 demonstrates the diversity of project types with which the respondents had expertise. Respondents were allowed to select multiple project types, if applicable. The types of projects with which the respondents had experience were evenly distributed. Areas of expertise included relocation management, real estate development, training projects, environmental remediation, boat building, telecommunications, business process and feature development, and equipment deployment. Types of projects are important because of the high rate of failure documented for construction and IT projects.

Table 14

Types of Projects

Answer Options	Response Percent	Response Count
Construction	50.0%	10
Engineering	45.0%	9
IT	50.0%	10
Other (please specify)	35.0%	7
Answered question		20
Skipped question		5

Table 15 addresses the respondents' years of leadership experience. Nineteen of 20 (95%) of respondents had project leadership experience for more than 3 years, which met or exceeded the leadership requirement identified as desirable in previous chapters.

Table 15

Leadership Experience in Terms of Years

Answer Options	Response Percent	Response Count
1- 3 years	5.0%	1
3- 6 years	15.0%	3
6- 9 years	25.0%	5
9 or more years	55.0%	11
Answered question		20
Skipped question		5

One-on-one Interviews (Phase Three) Demographic

Twenty-six participants started the phase three questionnaire. Again, participants were asked to complete the demographic and biographical section of the questionnaire, but were given the option to complete the remaining portion of the questionnaire prior to the one-on-one interviews at their discretion in preparation for the one-on-one follow-up interview. Consequently, 15 of 26 participants completed most of the phase three questionnaire, and 14 of 15 participants completed the entire questionnaire.

Fourteen respondents completed the phase three questionnaire so thoroughly that it reduced the necessity for one-on-one interviews. Next, four one-on-one interviews were conducted to clarify questionnaire responses gathered throughout the research. The four one-one-one interviewees were selected from the original 48 respondents based on their availability.

One hundred percent of the phase three participants met or exceeded the minimum education requirement of high school graduate or equivalent identified as desirable in Table 2 (page 82). Specifically, 12 of 13 (92.3%) respondents had a college or greater level of education, as shown in Table 16. Finally, the "other" category included respondents with background as a mental health expert, learning disability

nurse, Royal College of General Practitioners (UK RCGP) trained in substance misuse, MBA, and 5 years of college but no degree.

Table 16

Participants' Education

Answer Options	Response Percent	Response Count
High school or GED	7.7%	1
College	15.4%	2
Graduate School	30.8%	4
Post Graduate School	46.2%	6
Other (please specify)		5
Answered question		13
Skipped question		7

Table 17 establishes participants' number of years of experience. As seen in Table 17, 87% percent (13) of the phase three participants had 6 or more years of experience working in project management, which met or exceeded the minimum of 5 years of experience, along with the high school graduate or equivalent requirement identified as desirable in Table 2 (page 82).

Table 17

Project Management Experience

Answer Options	Response Percent	Response Count
1-3 years	6.7%	1
3-6 years	6.7%	1
6-9 years	26.7%	4
9 or more years	60.0%	9
Answered question		15
Skipped question		5

Table 18 demonstrates the number of years the respondents had maintained project management certification. All 15 respondents held a PMP or other project management certifications. Specifically, 10 of 15 respondents held a PMI-PMP certification. Further, four of the 15 respondents held a certification other than PMI-

PMP. Other project management certifications included MSc Project Management, APMP, PRINCE2, MSP, MBA, and a diploma in management, with project management as an assessed component. Last, 12 of the 15 (80%) respondents held a certification for longer than 3 years.

Table 18

PMP Certification in Years

Answer Options	Response Percent	Response Count
1-3 years	20.0%	3
3-6 years	33.3%	5
6-9 years	26.7%	4
9 or more years	20.0%	3
Answered question		15
Skipped question		5

Table 19 presents the participants' diversity of project management experience. Three of nine (33%) respondents specialized in the leadership aspect of project management. Another three of nine (33%) respondents specialized in the planning and scheduling aspect of project management. Other areas of expertise included quality management, planning, scheduling, and risk management, and transfer of funding responsibility from one organization to another using crown treasury.

Table 19

Area of Expertise

Answer Options	Response Percent	Response Count
Planning and Scheduling	33.3%	3
Cost Management	11.1%	1
Estimating	0.0%	0
EVMS	0.0%	0
Contract Management	22.2%	2
Leadership or management	33.3%	3
Other (please specify)		5
Answered question		9
Skipped question		11

Table 20 presents the diversity of project types on which the respondents worked. The respondents were allowed to select more than one category on this question. Specifically, 10 of 16 respondents worked on IT projects. Further, five of 16 respondents worked on construction projects. The types of projects are important because of the high rate of failure documented for construction and IT projects. Lastly, the five respondents in "other" category included program management.

Table 20

Types of Projects

Answer Options	Response Percent	Response Count
Construction	31.3%	5
Engineering	37.5%	6
IT	62.5%	10
Other (please specify)	31.3%	5
Answered question		16
Skipped question		4

Table 21 addresses participants' number of years of leadership experience. First, 94% (15 of 16) of the respondents had project management leadership experience. In addition, 79% of the respondents had project leadership experience for more than 3 years, which was identified as desirable in the research methodology. Last, 36% of respondents had 9 or more years of leadership experience.

Table 21

Leadership Experience in Terms of Years

Answer Options	Response Percent	Response Count
1-3 years	21.4%	3
3-6 years	28.6%	4
6-9 years	14.3%	2
9 or more years	35.7%	5
Answered question		14
Skipped question		6

The demographic and biographical data presented previously show that the respondents met the desired qualifications to validate the pilot study, answer the survey questions, and respond to the research question and problem based on their lived experience. Additionally, the results of this study yielded a large amount of significant project management information. Last, the demographic and biographical data demonstrate that the responses came from project management experts based on their years of experience, education, and certifications.

In summary, the responses represent a comprehensive view of the current state of project management from around the industrialized world. The participants' specific countries of residence can be found in Table 3 (page 102). Table 3 shows 13 completed phase one responses, 20 phase two completed responses, and 15 completed phase three responses for total of 48 respondents who contributed to this research. Last, the results of this study are summarized in the next section and the complete results of this study can be found in Appendix R.

Results/Findings

The following results are organized by the themes that emerged and are summarized from the original responses provided by the 48 respondents to this study. The results address major subjects, concerns, and issues (themes) identified by the respondents. Specifically, the central themes represent the participants' lived experiences and are based on the participants' responses.

The objective of each survey question was to define and establish consensus on themes based on the participants' lived experiences regarding project success or failure. The participants' responses indicated the following central themes: adequately defined

project requirements, project success criteria, transparency of communications, stakeholder engagement, and project management methodologies. Underpinning those themes are leadership ability, management ability, soft skills, and risk management.

Theme one – Definition of project success. The first major theme involved establishing a unified definition of project success and failure. The definitions of success and failure can vary depending upon client (customer, sponsors, and stakeholder) requirements. Phase 1 PM 4 agreed, "A successful project is one that is meeting or has met its stated objectives and is within budget, scope, and schedule. Moreover, the success should culminate in a usable new product or service that meets a need." Phase 1 PM 5 added, "A successful project meets the goals of the project as put forth and agreed to by the organization, in support of the overall organizational goals." Therefore, completion requirements can be unique to each project because each stakeholder can have a different definition of success or failure for his/her project.

In all cases, stakeholders include completion on-budget and on schedule as part of their success criteria. However, stakeholders do not always believe completion on budget and on schedule constitute a successful project. Further, clients may simply define success as a project that fulfills its stated goals and objectives. Generally, all of the respondents seemed to agree that a successful project was one that, when completed, met the agreed-upon requirements. For example, as Phase 2 PM 8 stated,

> That depends on the customer's requirements. Rarely is it on time, on budget, and meeting the scope. Those values are usually so yesterday to my stakeholders. Each stakeholder has their own definition of success or failure. Some define success as spending a million dollars on a one thousand dollar project as long as

they don't have to change any procedures. Others are not so obtuse and require and actual measurable outcome.

Participants identified the following contributors to project failure, such as: the project running behind schedule, running over budget, and deviation from defined project scope or scope creep. Phase 2 PM 9 stated simply, "A that a successful project is one that satisfies contractual requirements and exceeds sponsor or stakeholder expectations." Phase 3 PM 14 refined this thought by saying, "Aligned with strategy, meets business needs, and satisfied stakeholders."

Additionally, respondents stressed the importance of completing the project scope on time, within budget, and within the specified quality, but most agreed that the real measure of success was functionality per requirements once completion has been achieved. Phase 1 PM 3 indicated, "A successful project is one that delivers its core objective of adding value for the customer, by way of reducing operational expense and maximize throughput/income and off course within budget, time, cost, scope and last but not the least with in quality parameters."

Respondents indicated that project success is dependent on experience, qualifications, certification, and the ability to work with people. Certification, like PMI's PMP, is a competency assessment, and all who are successfully certified should be able to apply project management knowledge to real world problems effectively. Certification may not contribute to project success as much as experience, but it will not hinder success either.

It is important to recognize that qualifications, and to a lesser extent certifications, apply only to individuals. Respondents noted that project success is largely determined

by organizational competency and capabilities. The project manager can be very experienced and highly qualified, but projects can still fail if the overall organization lacks the ability to support and execute projects competently. Another major topic that emerged from this question is that many respondents acknowledged that poor communication, poor quality, poor planning, lack of a point of contact (governance), and poorly defined requirements lead to project failure and result in incomplete projects, cancelled projects, or projects that do not meet the intended requirements once completed.

Finally, the respondents agreed that the triple constraints (scope, schedule, and cost) and project constraints, which add quality and performance to the triple constraints, are important for meeting the client's requirements. Phase 1 PM 2 stated, "Maintain triple constraints: cost, schedule & scope of the project. Finalize the requirements. Agree what we can do. Finalize scope of the project and get signed off from customer." In addition, respondents indicated that the definition of a failed project depends on the organization and the overall goals of the stakeholder. Lastly, a failed project is one that does not meet the stakeholder's stated goals and objectives (requirements and success criteria).

Theme two – Requirements and success criteria. Respondents indicated that the reasons some projects fail when others succeed are situational, resulting from poor requirement and success criteria development and definition. Phase 1 PM 6 added, "Most fail due to lack of proper requirements." Phase 1 PM 7 suggested,

If the success factors are not in place a project will never succeed. Even with success factors in place there may be reasons why events have caused a project to be no longer viable from a financial and doable perspective.

Moreover, the respondents listed several general sub-themes that contribute to project success or failure, such as planning, resources (human and financial), leadership/management, communication, scope definition, and estimating. Phase 1 PM 1 said, "Communication is the main difference rather effective communication. Without it one will have unclear requirements, unrealistic expectations, cost overruns, delays and what not." Hence, ineffective or poor communication (infrequent communication), unclear requirements, unrealistic expectations, lack of proper planning due to excess optimism, poor scope definition, poor estimating, unqualified subcontractors, unrealistic expectations, uninformed stakeholders, regulatory impacts, and lack of leadership contribute to project failure.

Specifically, respondents also suggested that poor management (inexperienced leaders and team members), lack of project controls (ineffective day-to-day management), lack of risk management and mitigation processes, and lack of change management processes lead to poorly defined and implemented stakeholder requirements. In summary, many projects fail because of a lack of business and process management due diligence, which again indicate poor governance processes. Phase 2 PM 1 stated, "Clearly defined roles and responsibilities for project team members, shared understanding of how success is defined and "what good looks like," over communication, and stakeholder and risk management processes that are rigorously followed."

Respondents stressed the importance of communication among team members and stakeholders. Respondents suggest that PMs make efforts to understand the stakeholders' definition of success and incorporate the stakeholders' definition of success in their own planning. Phase 2 PM 3 indicated,

> Ensuring that the requirements and objectives are well understood by all stakeholders and the method of control is agreed upon by all stakeholders. The project manager needs to be in control of the project and not subject to requirements changes outside of a change control system, which takes into account the impact of all changes upon the project constraints.

Similar to the first theme, many respondents indicated that a good project manager must communicate, anticipate problems, anticipate risk, and make the project status transparent.

A good project manager makes sure to communicate the stakeholders' definition of success to his/her team. He/she incorporates risk identification, management, and response planning during project scoping. Further, respondents suggested that the manner (method) by which project leadership manages internal and external issues contributes to project success or failure. In short, many respondents indicated that some projects may fail whereas others succeed because of the degree of stakeholder and project management engagement. Respondents also indicated that many projects fail because of the degree of acceptance of personal responsibility and accountability of the project team (including the stakeholders).

Theme three – Stakeholder consensus and engagement. The stakeholder consensus and engagement theme relates to project manager capability and stewardship.

Specifically, respondents indicated that a project manager should have a clear understanding of what must be done and understand that controlling scope, cost, time, and risk enhances the opportunity for success. Also, a successful project manager allows for constructive stakeholder engagement and exchange of philosophies. Further, the project manager must be able to create and nurture relationships that will help the project team and stakeholders achieve their goals. In short, a project manager with experience has flexibility, adaptability, a proven project management methodology, and strong leadership skills; he/she also implements a team concept that relies on the strengths of its members.

Foremost, through his/her leadership, a project manager must inspire commitment to the project at all levels. In addition, the project manager should make sure his/her project is aligned to program and business priorities and still satisfies the stakeholders. For instance, a project manager must have the skills and experience to manage projects using good governance processes linked to the business and financial plans of the entire organization while providing regular updates with appropriate high-level information, including risks, to senior managers and stakeholders. Lastly, the project manager must have a clear vision of the intended project outcomes.

In that regard, respondents indicated that the most important factors contributing to project success are clear and shared understanding of: the definition of success, roles and responsibilities of the project team and stakeholders, stakeholders' expectations, and risk. Further, the stakeholders and project leadership must have realistic expectations and must not just tell people what they want to hear. Moreover, these factors, augmented

with a well-written and comprehensive project scope that has stakeholder buy-in along with adherence to the project management plan, are instrumental for success.

Well-defined scope should be developed early in the project, along with good cost estimates, integrated planning with the stakeholders, well-executed change control processes, well-defined schedule commitments among stakeholders, a sense of urgency, safe work practices, and great communications; all of these are critical to project success. Phase 3 PM 8 stated, "Ensure a clear understanding of the problem statement and how the project is expected to address this. Then communicate clearly and thoroughly for the duration of the project." Timely, effective, and efficient stakeholder and contractor communication, collaboration, and work execution are important as well, in addition to strong planning, scheduling, resource management, risk management, and good decision-making in a true team environment.

The project management plan should be established to define the value of the objectives and their achievability. These objectives should be documented in the project management plan and defined fully in scope documentation as requirements. Phase 3 PM 12 said, "Manage the project end-to-end, not just execution. Engage all stakeholders early and often." The project management plan is essentially a success criterion. Lastly, the project team and stakeholders should agree to the project management plan.

The project team should develop a shared understanding of the definition of success in order to avoid failure. In addition, the project team should be clear about the success criteria and deliverables. Phase1 PM 1 stated,

> A well written and comprehensive project with stakeholder buy-in, adherence to the project plan, regular, transparent and effective communication with

> stakeholder and project stakeholders, project manager with working knowledge and experience with a proven project management methodology, and project manager with strong leadership skills.

Similarly, the project team should establish risks and contingency plans that include risk from external factors.

Regular, transparent, and effective communication among the project team and stakeholders is another factor that enhances the opportunity for project success. Phase 3 PM 10 added,

> Find out what your stakeholders view as success (and failure if that is not clear), and find out what resources will be available to you and find out what your team really thinks about probability of success—immediately address any issues raised by asking these questions.

Finally, risk should be made transparent to the project team and stakeholders because they share in the responsibility for risk mitigation.

Theme four – Transparency. Transparency (including communication, risk, and status), strong stakeholder involvement, management involvement, and lessons learned (experience) from similar projects decrease the likelihood of project failure. In general terms, proper planning, reviewing, and communicating can decrease the likelihood of project failure. Specifically, good governance, which includes clearly defined roles and responsibilities for project team members, can decrease the likelihood of project failure.

Frequently, the likelihood of project failure is decreased by instituting formal change control processes and by proactive project management activities (including establishing and implementing formal project management methodologies) that do not

ignore project complexity. Also, ensuring that the project team and stakeholders understand and adhere to project requirements, objectives, and method of control will decrease the likelihood of project failure. Moreover, changes must be managed through an integrated change control system that takes into account the impact of changes upon the project constraints.

Strong customer relations and communication improve the chances of project success. Phase 3 PM 9 stated,

> Check, check and again check at the onset that the project plan and outcomes is agreed and supported by senior levels, ensure that the governance of the project includes regular reports to senior management and that there is a requirement for them to feedback.

Internal factors for project success are realistic requirements; adequate and appropriate resources; realistic planning; and execution, monitoring, and control. External factors include unexpectedly high level of realized risks, whether identified or not, but unforeseen risks are especially detrimental to project success.

Respondents from each phase of the study provided the following aphorism as it relates to this theme. Phase 1 PM 1 said, "Transparency tools help to keep important factors about the project visible to the entire team and help to create teamwork." Phase 2 PM 8 stated, "Encourage cooperation between stakeholder and contractors, clear instruction from stakeholder, good design." Phase 2 PM 9 noted, "A strong Project Management team, a process for project controls, a process to mitigate, and manage risks, changes, and owner and user directives." Phase 2 PM 10 said, "Engage a Professional

Project Manager who is not emotionally involved with the project. Delegate and check regularly the progress and performance is in line with expectations."

A project manager and team must be able to recognize a failing project and know when to take corrective action to mitigate risk and alleviate failure. Phase 3 PM 12 noted,

> Communication, stakeholder management, risk management, planning, accountability, application of appropriate and practical methodology, portfolio management (resource allocation), organizational project management competency, clear objectives and/or strong change management capabilities (agility), clear and cohesive strategy for the organization and stakeholders, managing complexity, strong team work.

The project manager must be in control of the project and not controlled by the project. Finally, a project manager must know which remedial actions to take and appropriate methodology to implement in order to decrease the likelihood of project failure.

Theme five – Methodologies. Respondents said that existing project management methodologies are effective if implemented properly. Phase 2 PM 1 said,

> I think that project management tools or methodologies are mandatory but not enough for a successful project. We must analyze the project and to know which methodology and tools should be applied. Choosing a methodology or a mix of methodologies, choosing which tools more or less collaborative can help a lot to achieve a successful project.

Further, respondents specified that applicable methodology depends on where the project in its lifecycle. Specifically, according to respondents, the methodology leading to

project success depends heavily on the nature of the project and available resources, but any project management methodology is better than none.

Consequently, project managers should place less emphasis on tools and techniques and more emphasis on people to achieve project success. Phase 2 PM 5 stated, "All project management tools, methods and process are critical to project success at some time. Which tools etc. depends of the project profile." Leadership, communication, risk management, and customer involvement are keys to project success. To be sure, project management tools or methodologies are mandatory, but alone they are not enough to make a project successful. Moreover, a project must be analyzed to know which methodology and tools should be applied.

Moreover, the project team must not let the tools alone define the job, but should use the tools to facilitate the process of project management. In addition, project managers must not develop or implement processes that add unproductive activities or add little or no value to decision-making processes. Finally, project managers must not develop or implement processes and tools that do not integrate scope, cost, and schedule.

The respondents generally agreed that project management techniques and methodologies are abundant, but missing are project managers that know when and how to use the available techniques and methodologies. Project managers and stakeholders are not using the available techniques and methodologies systematically because most define the project to meet optimistic or ideal circumstances and fail to include real-world conditions. In addition, some respondents indicated that elaborate methods are not required for projects with a simple scope.

Even simple issues and actions trackers created in a spreadsheet and housed in a collaborative tool like SharePoint can work as long as the team uses them consistently. Therefore, a project management tool, whether automated or not, must facilitate transparency, collaboration, timely reporting, strategic performance, risk management, change management, and governance in order for a project to be successful. Also, automated tools can help eliminate human error and save time.

Qualifications and certification enhance an understanding of project management methods and practices, and experience provides the project manager the skills to effectively integrate project management practices and understanding in his/her projects. Phase 2 PM 7 indicated, "In my 30 plus years of experience, I have learned that leadership, risk management, and customer involvement are the three keys to success, not the old fashion iron triangle of project management." Managing a project requires specific knowledge and skills, many of which can only be obtained through actual work experience, training, and mentorship. Phase 2 PM 8 said,

> Project management tools and techniques are found in abundance, what is missing is project managers and sponsors/stakeholders not systematically using the tools because "there isn't enough time or budget" because they scoped the project to meet "ideal" circumstances and did not real-world conditions that are anything but ideal.

Experience and qualifications are measures of capability. Phase 2 PM 10 suggested,

> It is hard to manage a project without a schedule. Having sufficient funds at the beginning of a project allows you to move forward and maintain the proper

sequence of events. Have a project team that is competent and understands project management best practices PMI/PMP.

Professional training alone does not guarantee project success. A relationship exists among experience, qualifications, certification, and project success or failure because experience and certification increase qualification. With respect to this idea, Phase 2 PM 15 stated,

> There's no method for success—the weight of the sponsor and the trick of the project leader are the best chances for success. Besides, a project is a human concept, and as such it is alive. Any method is good at the condition one's appropriates it and models it against the project. I'd say the only method is holistic.

Specifically, the tools must be user friendly and integrate scope, schedule, and budget as seamlessly as possible. Phase 3 PM 3 noted, "Tools are always helpful as long as understood why and what the tool is to be used for." For instance, a properly developed project schedule augmented with formal change control processes is a useful tool. A properly maintained project schedule also supports earned value management if required. Further, a project schedule is needed to document what, when, by whom, and how a project will be done. A project schedule should also include a process for obtaining and delivering status, because without status it is not possible to determine if a project is ahead of or behind schedule. Lastly, the schedule management process is designed to keep the project team and stakeholders informed, aligned, and accountable.

Experience may vary from project manager to project manager, but a project manager must be capable of learning from what works and does not work. With lessons

learned come experience and increased qualifications. Phase 3 PM 1 indicated, "Learning all of PMI's processes is not an indication for future success." The respondents acknowledged that as they gained experience, they focused less on the technology and methods of project management and more on the esoteric nature of project management. Additionally, the respondents identified that the essence of sound project management (i.e., scope, schedule, and cost management) remains the same, but recognized the need to emphasize planning and the definition of requirements at the beginning of a project.

Lastly, respondents stated that they ensure organizational support, manage change, focus on quality, require good staff (smart people), and are willing to listen to new ideas. In summary, other project management methodologies include PMI, IPMA, and PRINCE2 project management frameworks, which prevent most of the erroneous uses of tools like Primavera or Microsoft Project. PMI and IPMA management methodologies, augmented with Six Sigma quality control and used in combination with subject matter knowledge and RACI, hold team members accountable to strong governance principles.

Conclusion

This chapter contained a description of the data collection method and the results collected during this qualitative interpretative phenomenological research. Results were collected in three phases. Responses from phases one, two, and three were compared and contrasted using methods triangulation.

This chapter documented the demographic and biographical results. The demographic results demonstrated the respondents' diversity, experience, education, and

qualifications. In addition, the chapter documented commentary provided by 48 respondents.

The responses to the research questionnaire indicated that the primary subjects, concerns, or issues confronting project teams (including the stakeholders) are project requirements (scope definition), methodology implementation, governance, project success criteria, communication, leadership ability, project scheduling, and risk management. Further, respondents addressed planning, requirements, people, tools, communication, soft skills, and risk. In summary, the themes identified in this chapter suggest that planning, requirement, soft skills, people, tools, communication, and risk are also important areas of consideration.

Summary

Chapter 4 contains documentation of the results of phases one, two, and three of this study, and set the stage for method triangulation of data based on responses from each research phase. Phase three one-on-one interviews were designed to respond to remaining issues or questions that were not resolved during the previous phases of the study. This chapter also contains a summary of the purpose and problem identified in Chapter 1. Finally, Chapter 4 contains the demographic and biographical data of the sample population, sample method, and an outline of the research design methodology.

The next chapter (Chapter 5) contains a review of the methods, procedures, approach, and data collection method. Chapter 5 includes a discussion of the summary of results presented in Chapter 4 and the complete results presented in Appendix R. Chapter 5 offers an analysis of the Chapter 4 findings and results. The implications of the results

are also discussed in Chapter 5 in the same order as the survey questions. Chapter 5 presents the implications of the results and linkages to the research question and problem.

Chapter 5 contains a discussion that frames the research purpose and problem in relationship to the results. Chapter 5 also documents additional gaps in knowledge, significance of the study, and identifies areas for further research. Chapter 5 presents recommendations based on a review and analysis of the data collected.

Chapter 5

Conclusions and Recommendations

This interpretative qualitative phenomenological study examined project managers' perceptions of the factors that contribute to success or failure of projects based on their lived experiences. In addition, project managers were given the opportunity to identify and give an unqualified assessment of these factors. This chapter contains an examination of the gaps in knowledge and recommendations for future studies, as well as an analysis of the results and discussion the significance of the implications with respect to the research question and problem.

Projects are failing at a high rate and current project management processes do not seem to be ameliorating this problem. Reducing the rate of project failure will reduce the high economic impact caused by these failures. Accordingly, recommendations of how project failure rates can be reduced and success rates can be increased are included in this chapter.

The analysis begins with a summary of the participants' demographic and biographical data and a description of their diversity. As shown in Chapter 4, the demographic and biographical results confirmed the participants' qualifications and their ability to respond adequately to each phase of the study based on their lived experiences as required by an interpretative qualitative phenomenological study of this nature.

Discussion of Demographic and Biographical Data

Forty-eight project managers participated in this study. Twenty-three participants were from the United States, five respondents were from the United Kingdom, and 25 participants were from countries other than the United States and the United Kingdom.

The 48 participants came from 19 different countries. The total of 48 participants exceeded the planned population sample size, which was between 12 and 20.

Thirteen respondents completed the phase one (pilot study) questionnaire. The phase one (pilot study) validated the questionnaire and showed it was responsive to the research question and problem. The validated questionnaire was used during phase two of the research.

Twenty respondents completed the phase two questionnaires. The phase three one-on-one interviews used the same validated questionnaire as phase two. During phase three, the questionnaire was used primarily to collect demographic and biographical data and as a conversation starter to initiate interviews. Fifteen respondents completed the phase three questionnaire. The written responses collected during phase three reduced the need for one-on-one interviews. As a result, only four one-on-one interviews were conducted to clarify responses on the questionnaires as part of phase three. The follow-up one-one-one interviewees were selected from the 48 respondents based on their availability. The demographic and biographical data for the one-on-one interviews were included in the 48 completed questionnaires returned to the researcher. Lastly, all 48 participants met or exceeded the minimum experience and education requirements.

This study was conducted using SurveyMonkey, LinkedIn, and e-mail. The use of SurveyMonkey, LinkedIn, and e-mail increased my access to a larger number of qualified respondents than originally expected. These tools also provided access to a diverse population of respondents. The diversity of the respondents was a positive and unintended consequence attributable to the use of SurveyMonkey, LinkedIn, and e-mail. Specifically, the use of SurveyMonkey, LinkedIn, and e-mail extended the researcher's

reach, facilitated the return of responses, expedited data collection, and made analysis easier.

The internationally diverse nature of the participants enhanced the quality of the results by providing a worldly perspective of the lived experience of project management that was not expected at the onset of this study. It was interesting to observe that such a diverse range of project managers offered similar and consistent reasons for project failures or successes that confront project managers, project teams, and their stakeholders.

Discussion of Results

Respondents indicated that the overriding causes of project failure include: a lack of well-defined requirements; project teams being overly optimistic about technical complexity; poor communication; poor estimation of the required funding, timing, or distribution of funds; and poor project management capability at the beginning of the project. In circumstances where the requirements are well defined, the issue becomes a lack of change control management, which leads to scope creep as the project manager and stakeholders allow requirements to change and spiral out of control without accounting for schedule and cost changes.

The lived experiences of project managers placed primary responsibility for project success or failure on the project manager and stakeholders. The principal reason for doing so is the high degree of communication and consensus required among these two parties; the project manager-stakeholder relationship requires continuous communication and collaboration to produce positive results. Specifically, a project manager may fail to adjust cost and schedule to accommodate additional complexity

because of changing stakeholder requirements or because of a failure or inability to reach consensus with the stakeholders on the nature of the changes.

Moreover, soft skills—such as communication, collaboration, and consensus building—are just a few of the major issues impacting project managers, stakeholders, and project success or failure. Lack of collaboration and communication is a key factor affecting project success or failure (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

Theme One – Definition of Project Success

The content of this section is derived from the respondents' commentary that established the major themes of this study. Respondents agreed on the rarity of on-time, on-budget, and within scope completion (triple constraints) of projects. The rarity of meeting the triple constraints is often in conflict with the need to meet stakeholder success criteria, which in many cases includes meeting the triple constraints. This criterion for success makes project success difficult in the best case and impossible in the worst case, creating an environment of conflict from the start. The respondents indicated that the definition of success varies from project to project.

In summary, a simplified definition of a successful project is one that meets the intended functional and operational needs or requirements of the stakeholder (Lewis, 2007; Williams, 2011). The respondents also agreed that managing the triple constraints (scope, schedule, and cost) and project constraints, which add quality and performance to the triple constraints are necessary to meet stakeholder requirements for a successful project conclusion.

Theme Two – Requirements and Success Criteria

The respondents indicated that a successful project, at a minimum, was one that, when completed, has met the requirements of the stakeholders. Therefore, project success is dependent upon the requirements of the stakeholders, and the degree to which those requirements are acceptable to the stakeholders at completion. First, it is critical to ensure that stakeholders understand and agree to the requirements and objectives, which should decrease the likelihood of project failure (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014). Next, the project team must be clear about the success criteria and deliverables. Last, the project team must establish risks and contingency plans that include risk from internal factors as well as external factors.

The implication of this theme is that a project team, including the stakeholders, should define clearly and agree to the project requirements at the initiation of the project. Further, the team should establish and agree to success criteria that satisfy the stakeholders' needs. Respondents agreed that a failed project is one that does not meet the stated goals and objectives (requirements) as defined by the project team and stakeholders.

Respondents identified the need to establish success criteria that encompass the stakeholders' requirements. Also, respondents identified the following important contributing factors to project success: clear and shared understanding of the definition of success, clear and shared understanding of roles and responsibilities of the project team and stakeholder, clear and shared understanding of stakeholders' requirements and expectations, clear and shared understanding of risk, and realistic expectations. The reasons some projects fail while others succeed vary depending on the resources assigned

and the manner in which requirements are managed by the assigned resources (i.e., people).

In summary, the major factors enabling project success include well-defined requirements and success criteria. Further, consensus and engagement among the project team and stakeholders on the requirements and success criteria is an important characteristic of a successful project.

Theme Three – Stakeholder Consensus and Engagement

The implication of this theme indicates that there should be a high level of communication, consensus, and change control among the project manager, the project team, and the stakeholders in order for a project to reach a successful conclusion (Heagney, 2012; Wienclaw, 2014). Respondents agreed that the reasons some projects fail while others succeed depend on the project team's ability to manage limited resources and engage with the stakeholders.

Other projects fail because of the project team and stakeholders' lack of acceptance of responsibility and accountability. Specifically, respondents indicated that external and internal factors contribute to a high level of realized risks, whether identified or not, or known or unknown, but specifically stated that unforeseeable risks are detrimental to project success. A project manager contributes to project failure when he/she is not addressing the external and internal factors that contribute to project failure because of poor management and leadership skills. Additional factors that were identified as potentially leading to project failure included: no project plan, inadequate project plan, or poor planning; lack of resources; uncontrolled scope change; and poor risk management skills.

Some projects fail whereas others succeed because of a lack of stakeholder and project management engagement and consensus. Specifically, stakeholders contribute to project failure when they allow external and internal factors to influence their decision-making, rendering them overly optimistic regarding the technical aspects of the project, which in turn forces them to make unreasonable demands on the project team regarding the triple and project constraints (scope, schedule, cost, performance, and quality; Lewis, 2007; Williams, 2011). Accordingly, if a project manager, team, and stakeholders are focused on tasks rather than results, it can result in a lack of engagement with overall project objectives by one or all parties involved.

Beginning with the end in mind leads to an improved definition of the success criteria. Once the success criteria are identified, then project managers should plan their work and work their plan accordingly because requirements drive planning. Further, it is important to understand what the stakeholders want and need, as well as to understand the difference between stakeholder needs and wants. To that end, it is equally important to make sure the stakeholders agree to what they are getting and understand why. The final implication is that in order to establish a leadership position, managers of projects must possess a thorough understanding of transparency, planning, requirements, people, tool, communication, soft skills, and risk.

Theme Four – Transparency

Project managers must create a transparent work environment that includes communicating the project status, problems, and risk to the project team and stakeholders. Likewise, transparency should help keep important factors about the project visible and create a team-oriented environment. Experiences and qualifications

should include governance processes and leadership techniques implemented using transparency, communication, collaboration, and consensus among the project team and stakeholders.

Some predictors of project failure include poor communication, poor quality, poor planning, poor risk management, and poorly defined requirements starting at project initiation. Also, agreeing to unattainable project goals instead of attainable goals is an indication of a lack of soft skills such as communication and consensus building. The implication is that improved communication, better defined requirements, better upfront planning, and improved risk mitigation strategies should contribute to reducing the rate of project failures by increasing transparency.

Accordingly, the high rate of project failure indicates that project managers are not applying these minimum best practices consistently in order to alleviate project failure. The implication is that the following factors contribute to project failure: ineffective or poor communication (including infrequent communication), unclear requirements or unrealistic requirements and expectations, lack of proper planning, poor scope definition, poor estimating, unqualified subcontractors, unrealistic expectations, uninformed stakeholders, regulatory impacts, and lack of leadership.

Respondents indicated that consensus building is not just telling people what they want to hear, but rather telling people what they need to hear and to gain their acceptance or consensus. Hence, consensus on requirements augmented by well-written and comprehensive project scope is important for project success (Lewis, 2007; Williams, 2011). Specifically, regular, timely, and efficient communication; collaboration; and

transparent and effective communication among the project team and stakeholders build consensus and enhance work execution, along with project success.

In summary, major factors contributing to project success include communication, collaboration, and consensus. Frequent communication leads to increased transparency, which leads to and includes a clear understanding of the success criteria, requirements, risk, and status. Last, the leadership and management methodologies employed must be augmented with the application of good governance principles, processes, and practices that allow and enable continuous improvement, effectiveness, and team cohesion.

Theme Five – Methodologies

Respondents acknowledged that there are many project management tools and techniques. They suggested that the missing project management methodology element is project managers who know when and how to use the available tools, techniques, and business processes. However, some project managers do not see a need to use available tools, techniques, and business processes. Also, many may not understand or recognize the complexity of the project, and plan the project to meet optimistic or ideal circumstances rather than real-world conditions. Moreover, respondents acknowledge that existing project management tools, methods, and process are effective and useful when implemented properly, but the specific tool depends on the project lifecycle stage, the type of project, and the project manager's ability to manage internal and external factors that can introduce unforeseen risk.

Respondents saw most project management tools, methodologies, and processes as helpful, but expressed a dislike for project status meetings, Microsoft Excel spreadsheets, and methodologies that do not involve the stakeholders. In other words,

some respondents expressed that project management is not about tools, methodology, or approach; rather, it is about people. Further, not all project management tools, methodologies, or processes are usable or effective for all projects at all times.

The implication of this theme is that there is no specific method or formula for success that is effective 100% of the time unless a project manager understands how and when to use available tools and techniques. Specifically, tools or methods are helpful depending on the project situation and staff members' ability to implement them properly. Consequently, using project management tools, methodologies, or processes incorrectly produces the same result as not using tools, methodologies, or processes.

Therefore, project managers could emphasize tools, methods, and techniques less, and place more emphasis on developing or hiring capable staff to achieve project success (Lewis, 2007; Williams, 2011). Likewise, it is important to develop or hire staff capable of using available tools, methods, and techniques. Moreover, project managers could place emphasis on staff development, professionalism, certification, leadership, and self-development.

Furthermore, certification, like the PMP, is a competency assessment, but not all who become PMP certified can apply project management methodologies and best practices to real world problems effectively, as their passing score on the certification exam might seem to indicate. In addition, respondents indicated that the certification may not contribute to project success as much as experience, but it does not hurt. Certainly, it is important to recognize that qualifications, and to a lesser extent certifications, apply to individuals, but organizational competency and capabilities largely determine project success.

The implication is that a project manager can be very experienced and highly qualified, and yet his/her projects may still fail if the organization lacks the capability to support successful execution of project methodologies. The implication is that managing projects requires a specific set of knowledge and skills, some of which can only be obtained through actual work experience. Professional project management training alone does not guarantee project success.

In summary, the relationship among experience, qualifications, and certifications is that experience and training increase qualifications. Organizational competency is just as an important a factor in project success or failure as individual competency. This means that individual qualifications and experience do not always guarantee project success, especially if the organization does not have the capacity or capability to support the strategies and methodologies of the implementing project management. There is a relationship between experience, qualifications, certification, and project success or failure, but the effect remains indeterminate without the ability to build consensus, communication, and organizational governance of people.

As mentioned previously, respondents suggested that project success depends on people. Hence, project management is more about managing people than it is about managing using the correct project management tool or methodology. Specifically, project management is about people management, which requires well-developed leadership skills. The implication of this correlation is that often the lack of experience or skills of the project manager, the project team, and stakeholders in relation to the complexity of the project cause project failure. Also, inexperienced leaders or lack of leadership results in ineffective day-to-day management, ineffective risk management

and mitigation processes, ineffective change management processes, and poorly defined stakeholder requirements, all of which contribute to project failure. In other words, poor governance is an indication of a lack of a chain of command, a lack of a control structure, and a lack of a decision-making processes that reward success and hold team members accountable for failure.

Management and leadership are major governance factors contributing to why some projects fail whereas others succeed. Further, poor management results in poor project governance, and poor project governance is a result of a lack of leadership. Hence, a lack of accountability by project team members is an indication of poor leadership. Respondents indicated that governance involves instituting formal change control processes, and proactive project management processes (including establishing and implementing formal project management methodologies) that do not ignore contingent project complexity can decrease the likelihood of project failure. Managing changes through an integrated change control system that accounts for the impact of changes upon the project constraints may decrease the likelihood of failure.

The respondents shared that good governance, including clearly defined roles and responsibilities for project team members and a shared understanding of the definition of success, may help alleviate project failure. Further, the project manager must be in control of the project and not controlled by the project. The implication is that governance, transparency (including communication of status), strong stakeholder involvement, change control, risk management, and management involvement decrease the likelihood of project failure (Heagney, 2012; Kerzner, 2000; Wienclaw, 2014).

Inherent in this implication is that a project manager and team must be able to recognize a project trending toward failure and take action to mitigate failure.

Transformational leadership suggests qualities that an experienced project manager may have, such as a clear vision and understanding of what must be done and the ability to inspire team members to adopt that vision (J. Wren, 1995). Project managers could practice transformational leadership with an understanding that controlling scope, cost, time, and risk enhances the opportunity for success by establishing a clear vision of success. Moreover, the transformational project manager (leader) must be able to create and nurture relationships that could empower the project team and enable stakeholders to develop, agree to, and achieve goals arrived at through consensus.

The implication is that a transformational project manager must have the flexibility, adaptability, capability, strong leadership skills, and experience to implement a teaming concept that benefits from the strengths of the team. Moreover, a transformational project manager must inspire commitment at all levels of the project organization and make sure all project team members are aligned to business priorities and the goal of project success (J. Wren, 1995). The implication is that improving project leadership capabilities may alleviate the problem of a lack of due diligence by holding the project team accountable for its actions or inactions and improve the opportunity for project success.

Implications

Similar studies using smaller and less diverse populations have also shown that the opportunity for project success would be improved with greater stakeholder

involvement, improved governance, improved communication, improved requirements definition, improved planning, and improved risk mitigation strategies (Latonio, 2007; Saak, 2007). Although Latonio (2007) and Saak (2007) added significantly to the breadth of knowledge in this subject area, they do not suggest methods or processes that may improve project success rates based on project managers' lived experiences.

One of the themes on which Latonio (2007) focused was how senior leadership and management's influence affected the critical factors for the success of projects. One possible explanation for this focus is that senior leaders are not empowering project managers to lead projects and thus project managers must constantly look to senior management for decision-making support and guidance. Senior management could eliminate project management decision-making dependency by establishing a governance structure that allows project managers the freedom to make independent decisions (Wu, 2011). It is clear that a lack of leadership is an important factor and has important implications for project success or failure.

Latonio (2007) and Wu (2011) also identified a need for effective and open communication, along with the need for project management to focus on people. A possible explanation for this is that consensus building through open and honest communication is an important element of building and maintaining a team. Latonio's findings support the results of this research, indicating that sharing information and raising issues early without repercussions is important to project success.

Saak (2007) suggested that the role of a project's stakeholders is often misunderstood. According to Saak, organizations forming project management teams need to understand how to develop a working relationship with stakeholders that sponsor

projects. A possible explanation for this is that project managers need to develop the soft skills necessary to reach consensus with stakeholders in terms of establishing requirements and success criteria at the beginning of a project. Doing so requires communication and, according to Saak, poor communication is a leading cause of project failure. Saak's findings correlate with the implications of this study that governance, open and honest communication, collaboration, and consensus building, along with project management business processes, is important not only to team building but also to project success.

Recommendations

Project management business processes are often seen as administrative functions that have only a casual effect on the technical issues and success of a project. Stakeholders view project management as an added cost with little benefit to project success. Perhaps the solution is for project managers to seek leadership, communication, and consensus building training instead of relying on their experience or wits to manage a project.

Project managers can rely on tried and true methods and best practices as defined by professional associations like AACE, PMI, and IPMA. Individual project teams deal with their specific project problems and focus on technical problems, but can also remain focused on management and leadership issues. AACE, PMI, and IPMA have established and continue to refine best practice standards, but there is no enforcement mechanism or process for making sure best practices and standards are adhered to other than training and certification.

These best practices seem to become more general and less specific as they expand to address additional generalized issues and project types. As best practices have evolved they seem to become cumbersome or impractical to implement in many cases. Project management best practices and methodologies seem to be moving farther away from real world solutions in terms of applicability and implementation. Based on the current research, I believe there is a need for specific guidance, methods, and best practices on how to deal with specific real world project management problems. As such, the following recommendations apply to significant areas such as planning, requirements, people, tools, communication, soft skills, and risk management. Specific recommendations are as follows:

First, a project manager should always maintain a healthy pessimism about the complexity of a project, as being overly optimistic may lead to project failure. Consequentially, respondents suggested that being overly optimistic has probably caused more projects to fail than succeed. Hence, respondents recommended maintaining a more pessimistic attitude about project complexity. Project teams should clearly define and agree to requirements and success criteria at project initiation. Perhaps a project manager should spend more time performing upfront planning as well. The old adage of *plan the work and work the plan* still applies today. Specifically, in terms of requirements, respondents suggested that requirements define the work, after which a project manager could plan the work and work the plan. Further, on the topic of planning, respondents suggested that every attempt could be made to fully understand what the stakeholders consider to be the success criteria and plan the project accordingly.

Second, there should be a high degree of communication, collaboration, and consensus among the project manager, project team, and stakeholders. Respondents recommended that communication should occur early and often in order to involve and inform stakeholders at every stage of project execution. Also, project managers are advised to identify and communicate problems and risk as early as possible. Project management is really about people. Therefore, project managers should possess or be able to develop the soft skills required to manage, lead, or work with people in a team environment. Soft skills include being consistent about information sharing, communication, collaboration, consensus, and transparency with team members and stakeholders. Typically, project management skills can take years to develop. However, some project managers may never develop the ancillary but required soft skills. Accordingly, a large part of a project manager's job is to deftly employ the soft skills of management as well as technical skills. Communication is a significant soft skill and, as such, communication with the project team and stakeholders is important.

Third, project managers could become transformational project leaders. Project managers must empower the project management team to make decisions within their span of control. Project managers should inspire commitment to project success based on their experience, qualifications, and training. Regarding people, respondents stated that project managers could take charge but in a humane and collaborative manner. Project management should have the ability to implement project management methodologies correctly. A lack of due diligence in using clearly defined and established project management methodologies and best practices as defined by AACE, PMI, and IPMA can result in project failure. In addition, a project manager that does not see the need to use

tools such as CPMs, Waterfall, EVM, or other project management methods (when needed) to manage, track, and report progress lacks project management exposure and experience and can fail at managing a project.

Fourth, project managers could implement governance processes that support transparency (including communication and status reporting), strong stakeholder involvement, change control, and risk management practices. Also, project managers could involve, inform, and advise the stakeholders and staff at every stage of the project. Further, project managers could identify and communicate risk as soon as possible, as risks are best mitigated before they become problems. A mitigation response could be developed when a risk is identified, not when it is has already occurred. Also, risk management is an important factor in enabling successful project management. Therefore, risk should be respected. To that end, it is best practice to validate requirements and identify risk as early as possible with the stakeholders' involvement, support, and consensus. Moreover, it is a best practice to establish and manage a process for ongoing requirements change control, risk identification, validation, and mitigation with the stakeholders' collaboration and consensus.

Lastly, a project manager should be honest with himself/herself first, practicing self-monitoring and continuous self-improvement. Further, project managers and teams' experience could match or exceed the complexity of the project. A project manager could seek leadership training, improve communication skills, and improve people skills if those are areas of weaknesses. If a project manager is unsure of his/her weaknesses, then he/she could seek the opinions of others and be willing to listen and implement corrective actions. Respondents suggested that project managers could learn from the

best examples, be proactive, consult others when needed, and work with the best people when possible. Additionally, in the area of tools, respondents said that a project manager should know how to use the available project management tools, methodologies, and best practices effectively. To clarify, project managers should use what works and disregard that which does not.

Many project managers and project teams pick from those existing processes or standards with which they agree and disregard those with which they do not agree. Many project managers are trained in the science of project management, but lack training in the art of leadership and management soft skills. Stakeholders who are influenced by political and other external drivers try to get as much as they can out of a project team with as little funding and time as possible. Specifically, this approach can lead to changing requirements and fluctuating scope, which encourages project team members who manage cost and schedule to cycle between what is in scope and what is out of scope.

In summary, all project management tools and methodologies can be helpful when implemented properly. Likewise, project management tools and methodologies may not be helpful when they are implemented improperly. Further, project management tools and methodologies are also not helpful when the primary focus is the project instead of communication, collaboration, and consensus among people (project team and stakeholders). Finally, changing requirements and fluctuating scope create a push and pull that stresses projects to a breaking point and can lead to eventual project failure. At the point of project failure, no one is happy with the results; least happy are the stakeholders who just invested a large amount of capital in a process, a design, a facility,

a building, or software that at best does not meet their requirements and at worst is not functional.

Researcher's Reflections

This interpretative qualitative phenomenological study process produced some interesting results, themes, and conclusions. Particularly interesting is the similarity of comments given by a highly diverse population of project management experts from around the world. Generally, project managers can rely on tried and true methods and best practices as defined by professional associations like PMI, IPMA, and AACE. However, individual project teams can deal with their specific project problems and focus on technical problems, but also remain focused on management and leadership issues.

PMI, IPMA, and AACE have established and continue to refine best practice standards, but there is no enforcement mechanism or process for making sure best practices and standards are followed (other than training and certification). These best practices seem to become more general and less specific as they expand to address additional generalized issues and project types. As best practices have evolved, they seem to have become cumbersome or impractical to implement in many cases.

I believe that the key to developing specific measures to address this problem may come from seeking input from experienced project managers such as those who participated in this study. Further, this study has resulted in numerous recommendations for future studies that could lead to improved project success rates.

Recommendations for Future Study

The results of this study indicate that project managers generally understand what is wrong with the current state of projects in a general sense based on their lived

experiences. Hence, project managers understand why projects are failing, but there is no consistent effort to resolve this problem systematically based on their lived experiences. Additionally, the responsibility for project failures can be placed on many different parties and factors, but each project manager, project team, and stakeholder shares in the blame because, as the project leadership, they are responsible for repeating the same mistakes over and over. However, collectively, project leadership teams never seem to learn from past mistakes.

For instance, companies' leadership take project failures personally. Further, many companies' leadership prefer to not make public their failures to customers and potential customers who might want to use their services or products for fear of losing potential customers or giving other companies a completive advantage. However, as a result, companies that do not share performance data and lessons learned are accomplices to the high rate of project failures.

Many books and case studies have been written about project failure and success, but few project managers use this material to improve their current or future project performance. Moreover, companies do not invest in acquiring information, lessons learned, or case studies from similar or dissimilar projects. Also, the professional development of project managers, while supported and encouraged by companies, is often left to the project managers' own initiative to acquire.

Many companies pay lip service to project management professional development but do not promote professional development in-house. In many cases, professional development along these lines is rare because it is often easier or simpler for a company to buy contract help with the desired certifications or qualifications than it is to develop

in house. Moreover, many companies are organizing their work into projects, and the need exists to enlighten them regarding the pros and cons associated with project failure and success.

First, organizations contemplating implementing project management processes should understand the implications of institutionalizing project management methodology and best practices. Next, organizations should understand the value added and fully support implementing the project management business processes. Lastly, if an organization does not believe fully in the merits of or is not willing to invest in the process of qualifying project managers, then it is best that it not make project management a requirement. As a result, recommendations for future qualitative phenomenological studies include:

1. Determine a process or method that project managers can use to disseminate or cross-fertilize lessons learned from project to project.
2. Determine why some companies do not want to invest in improving project performance by mandating project management mentorship and training in its project management organizations.
3. Determine why senior management assumes technical experience equals project management experience.
4. Determine if there is a relationship among experience, qualifications, certification, and project success or failure.
5. Determine workable or implementable solutions to improve project success rates.

This study shows that there is a vast array of knowledge available from subject matter experts world-wide, but little effort is being made to collect, understand, and synthesize this information and knowledge into practical solutions targeted toward increasing existing and future project success rates. Instead, project managers and project teams are left to select those processes or standards with which they agree or that they understand, disregarding other potential workable solutions or those that they do not understand or with which they do not agree.

Conclusion

This research focused on project managers' perceptions of the factors contributing to success or failure of projects based on their lived experiences. To that end, project managers gave an unqualified assessment of their lived experiences with factors and issues contributing to project failure. Moreover, based on this assessment, the primary implication of this study is that project teams should clearly define and agree to requirements at the beginning of a project in order for projects to be successful.

Project management is about people management. As a result, project management tools and methodologies alone do not enable project success. Communication, collaboration, and consensus among all parties should be promoted. Governance includes the project manager and stakeholders' involvement in controlling change, managing risk, managing the triple constraints, and empowering the project team.

First, there are no specific methods for success that are 100% effective 100% of the time, but using project management tools, methodologies, or processes increases the likelihood of project success. Although tools that automate some project management

processes are available, automation alone is not the solution. Consequentially, competent use of soft skills is required to empower a project team to gain and maintain stakeholder consensus.

Second, it is important to identify and communicate problems as soon as possible, as risks are best mitigated before they become problems. Project managers' lived experiences reveal that improved communication, definition of requirements, planning, and risk mitigation strategies are critical factors that will reduce the rate of project failures.

Third, project managers need to transform the way they lead. Specifically, project managers should apply transformational leadership principles to the way they manage projects. Further, project managers should empower the team by pushing decision-making downward. Additionally, if something does not make sense, project managers should ensure that it makes sense, and if something is wrong, project managers should fix it immediately.

Fourth, the project management methodology implemented on a project is contingent upon the type and complexity of the project. Further, stakeholder support is important because no project management methodology can work without it. Also, the definition of project requirements starts with understanding the requirements and the criteria for success.

Likewise, it is important to have an understanding of and develop consensus on a project from initiation to closure. Also, it is important to know who and what are involved in each step of the project and to establish a relationship with the project team and stakeholders. A project manager can distinguish himself/herself by making sure

he/she manages risk, understands the stakeholders' needs, and manages change intentionally.

Finally, project managers' lived experiences indicate that project success requires stakeholder communication, collaboration, and consensus on governance, leadership methods, definition of requirements, and success criteria during the project initiation stage. Also, project managers and stakeholders should work together throughout a project lifecycle to control the amount of changes to the requirements baseline that are instituted during project initiation, implementation, and closure. Specifically, the overall implication is that project success rates can be improved if project managers and their stakeholders work together to establish consensus on the requirements of the project at the onset and control changes throughout a project's lifecycle.

Summary

The motivation for undertaking this study was to determine if projects fail or succeed because project management teams, project management organizations, and stakeholders do not implement strategies that are adaptive to influences that affect quality, performance, cost, scope, and schedule based on project managers' perceptions and lived experiences. A review of peer-reviewed articles, journals, books, and dissertations regarding the primary critical factors that contribute to project success or failure was presented in Chapter 2.

The purpose of this qualitative interpretative phenomenological study was to examine project managers' perceptions and lived experiences, providing them the opportunity to give an unqualified assessment of their lived experiences of the factors contributing to project success or failure. The interpretative phenomenological approach

allowed for the development of meaning in context of lived experiences by analyzing the participants' perceptions of the issues they identified (see Chapter 3).

The results of this study are summarized and paraphrased from the commentary provided by 48 respondents who participated in this research. The demographic and biographical data demonstrated the respondents' diversity, experience, education, and qualifications. Responses to the research questionnaire indicated that the primary subjects, concerns, or issues confronting project teams (including the stakeholders) include project requirements (scope definition), methodology implementation, governance, project success criteria, communications, leadership ability, project scheduling, and risk management (see Chapter 4).

Chapter 5 presented a discussion of the ambiguous nature of project success or failure, because the interpretation of success or failure of a project depends on the evaluator's perspective and objective. One definition of project success is when all parties accept that a project adequately meets the intended purpose, function, and capability based on mutually agreed upon requirements. This chapter also described how communication, collaboration, and consensus are instrumental in order for project success rates to improve. Last, Chapter 5 documents that project success rates may be increased if the purpose, function, and capability of the project are established based on mutually agreed upon requirements and success criteria from the onset of the project.

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Appendix A

Permission to Conduct a Qualitative Phenomenological Study

Greetings,

Subject: Permission to conduct a qualitative Phenomenological Study

My name is Ray C. Hickson, PMP. I am pursuing a Doctorate of Management in Organizational Leadership through the University of Phoenix. As a doctoral candidate, I am completing the final stage of the doctoral dissertation requirement. A part of this effort is to identify, document, and conduct research in an area where there is a significant gap in current knowledge.

I have chosen as my dissertation research project to determine the primary factors contributing to project success or failure from a project manager's perspective. I am interested in understanding the reasons for the high rate of project failures.

I am requesting permission to solicit members of your organization for participation in a questionnaire, individual interview, and follow-up questions (if required). The research project results will be published as part of my dissertation requirement. The phenomenological responses and data resulting from this response will be treated with utmost confidentiality.

Thank you,

Ray C. Hickson, PMP

Doctoral Candidate, University of Phoenix

Appendix B

Introductory Letter

Greetings:

Subject: Request to participate in a Phenomenological Study

My name is Ray C. Hickson, PMP. I am pursuing a Doctorate of Management in Organizational Leadership through the University of Phoenix. As a doctoral candidate, I am completing the final stage of the dissertation requirement. A part of this effort is to identify, document, and conduct research in an area where there is a significant gap in current knowledge.

I have chosen as my dissertation research project to determine the primary factors contributing to project success or failure based on the perceptions of project managers. I am interested in understanding the reasons for the high rate of project failures from the perspective of project managers.

I am seeking assistance from 10 to 20 project managers in this process. Participation is voluntary and your identity will remain confidential, if that is your preference. Attachments include a questionnaire, open-ended interview questions list, and informed consent form for your review and use. The results of this study will be published as part of my dissertation requirement. Your identity will remain confidential in any subsequent publications for your protection. If you are interested in supporting or have questions about this effort please contact me at my personal e-mail

[redacted]

Thank you

Ray C. Hickson, PMP, Doctoral Candidate, University of Phoenix

Appendix C

Informed Consent

Informed Consent: Participants 18 years of age and older

Dear Participants,

My name is Ray C. Hickson and I am a student at the University of Phoenix working on a Doctorate of Management degree. I am doing a research study entitled PROJECT MANAGERS PERCEPTIONS OF THE PRIMARY FACTORS CONTRIBUTING TO SUCCESS OR FAILURE OF PROJECTS. The purpose of this research study will be to examine project managers' perception of the primary factors contributing to success or failure rates of projects from the perspective of project managers.

Your participation will involve completing a question, interview, or both. You can decide to be a part of this study or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any outside party.

In this research, there are no foreseeable risks you.

Although there may be no direct benefit to you, a possible benefit from your being part of this study is the increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures. .If you have any questions about the research study, please call me at [redacted] or e-mail [redacted]. For questions

about your rights as a study participant, or any concerns or complaints, please contact the University of Phoenix Institutional Review Board via email at [redacted].

As a participant in this study, you should understand the following:

1. You may decide not to be part of this study or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.
2. Your identity will be kept confidential.
3. Ray C. Hickson, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. If interviews are done, they may be recorded. If they are recorded, you must give permission for the researcher, Ray C. Hickson, to record the interviews. You understand that the information from the recorded interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a secure and locked area. The data will be kept for three years, and then destroyed.
6. The results of this study may be published.

"By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

(CHECK ONE) ☐ **I accept the above terms.** ☐ **I do not accept the above terms.**

Signature of the interviewee _____ Date _____

Signature of the researcher _____ Date _____

Appendix D

Publication Aging Report

Articles															
Years	**>99**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**TOTAL**
Leadership	~~2~~	~~1~~	~~0~~	~~0~~	~~0~~	~~1~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	**4**
Management	2	0	0	0	0	0	1	0	0	0	1	1	3	1	**9**
Organizations	1	0	0	0	0	0	0	2	0	0	1	1	1	0	**6**
Project Management	0	0	0	0	0	0	3	5	5	5	4	5	3	6	**36**
Sub Total	**5**	**1**	**0**	**0**	**0**	**1**	**4**	**7**	**5**	**5**	**6**	**7**	**7**	**7**	**55**

Book															
Years	**>99**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**TOTAL**
Leadership	6	0	0	1	1	0	0	2	1	1	0	1	1	0	**14**
Management	1	0	0	0	0	1	0	0	1	0	2	0	0	0	**5**
Organizations	1	0	0	1	1	0	0	2	1	0	1	0	0	0	**7**
Project Management	0	1	1	0	1	1	0	3	2	2	1	0	2	1	**15**
Sub Total	**8**	**1**	**1**	**2**	**3**	**2**	**0**	**7**	**5**	**3**	**4**	**1**	**3**	**1**	**41**

Dissertations															
Years	**>99**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**TOTAL**
Leadership	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Organizations	0	0	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Project Management	0	0	0	0	0	0	0	0	2	0	1	4	2	0	**9**
Sub Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**4**	**2**	**0**	**10**

Years	**>99**	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**TOTAL**
Books	8	1	1	2	3	2	0	7	5	3	4	1	3	1	**41**
Articles	5	1	0	0	0	1	4	7	5	5	6	7	7	7	**55**
Dissertations	0	0	0	0	0	0	0	0	3	0	1	4	2	0	**10**
Sub Total	**13**	**2**	**1**	**2**	**3**	**3**	**4**	**14**	**13**	**8**	**11**	**12**	**12**	**8**	**106**

Appendix E

Purpose, Instructions, Participation Selection Criteria

Summary of the purpose, goal, and benefits of this study.

The purpose of the study:

The purpose of this qualitative interpretative phenomenological study will be to examine project managers' perception of the primary factors contributing to success or failure rates of projects from the perspective of project managers.

The anticipated study goals:

This study might identify primary factors that can lead to project success or failure based on the perceptions of project managers. This study may result in corrective actions that can enable project success based on the perceptions of project managers.

The benefits of the study to the subjects, to the organization, and to society:

Decreasing project failures will reduce and eliminate the economic impact to the stakeholders when projects fail The Standish Report, 1985. The results of this study may increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures.

Instructions:

Please complete the following forms as completely as possible. Double click on the check box to select the item that is applicable to you. If you answer yes to any of the questions listed in the participation criteria, you are a member a protected groups, do not complete the rest of the questionnaire. The experience level of participants of this study is based on the PMI project management professional experience criteria listed below.

PMP Certification Experience Requirements		
Education	**Experience**	**Training**
HS Diploma or equivalent	Five years or 7500 hours of project leaders experience	35 hours of training
BS or equivalent	Three years or 4500 hours of project leaders experience	35 hours of training

Participation criteria			
The following is a list of protected groups as specified within the federal human subject guidelines defined at www.citiprogram.org. a. If you check "yes" to any category from this list do not complete the following questionnaire. b. Minorities including women, pregnant, elderly, or aged persons are also protected groups but may agree to participate after signing an informed consent. Participants of this study who may be pregnant may contribute to this study because participation will not affect the medical condition of the fetus or the mother. c. Please include comments, questions, or concerns.			
1. Are you a minor under age 18?		**Yes** ☐	**No** ☐
2. Are you a prisoner?		**Yes** ☐	**No** ☐
3. Are you cognitively impaired or mentally disabled?		**Yes** ☐	**No** ☐
4. Are you a college student?		**Yes** ☐	**No** ☐
5. Are you a student of the University of Phoenix?		**Yes** ☐	**No** ☐
6. Are you faculty or staff of the University of Phoenix?		**Yes** ☐	**No** ☐
Comments, question, or concerns:			

Appendix F

Draft Biographical and Demographic Questionnaire

Biographical data:
1. What is your highest level of education?

☐ High School Diploma or GED	☐ Associate degree	☐ BS or BA	☐ Masters	☐ Doctorate	☐ Other

2. How long have you been working in project management, a project environment, or a related capacity?					
☐ less than 5 years	☐ 5 -10 years	☐ 10 -15 years	☐ 15 - 20 years	☐ 20-25 years	☐ 26 or more

3. Are certified Project Management Professional	**Yes** ☐	**No** ☐

4. How long have held PMP certification?					
☐ less than 5 years	☐ 5 -10 years	☐ 10 -15 years	☐ 15 - 20 years	☐ 20-25 years	☐ 25 or more

5. Do you meet the requirements to become a certified project management professional?	**Yes** ☐	**No** ☐
6. Do you intend to or desire to become a certified project management professional?	**Yes** ☐	**No** ☐
7. If your answer is no, please state why you do not desire project management professional certification.		
8. What area of project management do you consider yourself to be a subject matter expert and why? For example Planning, Scheduling, Cost, Management, EVMS?		
9. Describe the types of projects have you worked on? For example – construction. Information technology, Engineering, or Other.		
10. What is your current project role? Describe your current project role?		

11. Have you worked in a leadership role on a project?	**12. Yes** ☐	**13. No** ☐

14. Describe your most recent leadership role?					
15. How long you have worked as project leader or manager?					
☐ less than 5 years	☐ 5 -10 years	☐ 10 -15 years	☐ 15 - 20 years	☐ 20-25 years	☐ 26 or more
16. How many projects have you worked on?					
☐ less than 2	☐ 2 - 4	☐ 4 - 6	☐ 6 - 8	☐ 8-10	☐ 10 or more
17. In terms of dollars millions of cost, what size project have you worked on?					
☐ less than 10	☐ 10 - 20	☐ 20 - 30	☐ 30 - 40	☐ 40-50	☐ 50 or more
18. Describe the types of projects have you worked on? For example – construction. Information technology, Engineering, or Other.					

Appendix G

Draft Survey/Questionnaire

Research questionnaire:
1. **Based on your lived experiences define or describe what a project is.**
2. **Based on your lived experiences describe how you define project failure?**
3. **Based on your lived experiences how would you define project success?**
4. **Describe your perceptions of why some projects fail, while others succeed in context of your lived experiences.**
5. **Describe as many factors as you can think of that contribute to project failures based on your lived experiences.**
6. **Based on your perceptions and lived experiences describe as many factors as you can that contribute to project success.**
7. **How do the factors described above contribute to project success or failure constructed in terms of your lived experiences?**
8. **Describe what can be done to mitigate project failure in the context of your lived experiences?**
9. **Describe the context in which you used project management software, business processes, and tools to assist you, and your team to manage your project or program based on your lived experiences of project failure and success?**

10. Considering project management software, tools, and business processes that you have used and the context in which you used them, describe if project management software, tool, and business processes helped or hindered your projects success or failure based on your lived experiences?
11. Describe business processes, project management software, and tools that will reduce the likelihood of project failure based on your lived experiences and perceptions?
12. Describe other business processes, project management software, and tools that will increase the likelihood of project success based on your lived experiences and perceptions?
13. What do you perceive are the strengths or weaknesses of project management software, tools, and business processes based on your lived experiences?
14. Describe how you have used project management methodologies, process, or tools to help you develop, maintain, modify, and control projects i.e. CPM, SCRUM, Agile, etc… based on your lived experiences?
15. Of these methodologies or tools you have mentioned, which do you think is most helpful to focus your team on scope, schedule, cost, major milestones, etc… based on your lived experiences?
16. Describe the project management methodologies or processes that you think is most helpful to alleviating the potential for project failure or facilitate project success based on your lived experiences.
17. If there was one program or project you could 'do-over' with what you have learned over your career, what where the major issues of that program or project that you would correct or change based on your lived experiences?
18. When looking back on your career and your lived experiences what guidance would you the experienced project management professional have given you the project management neophyte regarding project success or failure?

19. Describe your perception of the relationship between project manager experience, qualifications, certification, and project success or failure based on your lived experiences?
20. As a project manager what are your perception of the importance of lived PM experience, PM certification, and education as it pertains to project success or failure in the context of your lived experience?
21. Are there any perceptions, insight, or comments about project success or failure that was not addressed in the questions above in the context of your lived experiences that you would like to address? Describe as fully as possible.

Appendix H

Confidentiality Statement

Project Managers Perceptions of the Primary Factors Contributing to Failure or Success of Projects: A Qualitative Phenomenological Study

Ray C. Hickson

CONFIDENTIALITY STATEMENT

As a researcher working on the above research study at the University of Phoenix, I understand that I must maintain the confidentiality of all information concerning all research participants as required by law. Only the University of Phoenix Institutional Review Board may have access to this information. "Confidential Information" of participants includes but is not limited to: names, characteristics, or other identifying information, questionnaire scores, ratings, incidental comments, other information accrued either directly or indirectly through contact with any participant, and/or any other information that by its nature would be considered confidential. In order to maintain the confidentiality of the information, I hereby agree to refrain from discussing or disclosing any Confidential Information regarding research participants, to any individual who is not part of the above research study or in need of the information for the expressed purposes on the research program. This includes having a conversation regarding the research project or its participants in a place where such a discussion might be overheard; or discussing any Confidential Information in a way that would allow an unauthorized person to associate (either correctly or incorrectly) an identity with such information. I further agree to store research records whether paper, electronic or otherwise in a secure locked location under my direct control or with appropriate safe guards. I hereby further agree that if I have to use the services of a third party to assist in the research study, who will potentially have access to any

Current version 032012 20

Confidential Information of participants, that I will enter into an agreement with said third party prior to using any of the services, which shall provide at a minimum the confidential obligations set forth herein. I agree that I will immediately report any known or suspected breach of this confidentiality statement regarding the above research project to the University of Phoenix, Institutional Review Board.

Ray C. Hickson	Ray C. Hickson	July 6, 2013
Signature of Researcher	Printed Name	Date
Lonnia A. Hendrick	Lonnia A. Hendrick	7/6/13
Signature of Witness	Printed Name	Date

Appendix I

PRN Form

PREMISES, RECRUITMENT AND NAME (prn) USE Permission

Name of Facility, Organization, University, Institution, or Association

Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at [redacted].

☐ I hereby authorize , a student of University of Phoenix, to use the premises (facility identified below) to conduct a study entitled (insert title of research study or a brief description of research study)

☐ I hereby authorize , a student of University of Phoenix, to recruit subjects for participation in a conduct a study entitled (insert title of research study or a brief description of research study).

☐ I hereby authorize , a student of University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled (insert title of research study or a brief description of research study).

/ /

Signature Date

Name

Title

Address of Facility

Appendix J

Interview Script

Opening remarks: The objective is to put the participant at ease using a friendly, businesslike attitude.

Researcher: Thank you for your time in participating in this study. My name is Ray Hickson, a doctoral candidate with the University of Phoenix-online program. I am glad that you were able to set aside some uninterrupted time to support my research effort. This interview should take between 45 and 60 minutes, but may take longer based on the length of your responses. If at any time you have questions, please stop me, and I will attempt to explain further.

Participant response: Allow a moment for the participants to ask any questions that they may have?

Researcher: Before we start, let me give you some idea of what I'd like to cover today.

- The focus of my research is to examine your lived-experiences with project success and failures.
- The purpose of my study is to explore how project managers through personal perceptions and lived experiences view success or failure rates of projects.

Participant response: Allow a moment for the participants to ask any questions that they may have?

Researcher Action: Explain the interview process:

- I will ask questions and record your responses. Please answer as completely as possible. All data will be treated confidentially. No names of individuals or organizations will be included in the research or findings.

Participant response: Allow a moment for the participants to ask any questions that they may have?

Researcher: These interview questions are grouped into broad categories:

- The initial questions of the interview are focused on demographic to help clarify your personal characteristics as a participant.
- **Work experience** in the industry - I want to review your background and lived experiences.
- **Ethical questions** are to gain insight into your lived experiences as business professionals and understanding about how you perceive today's challenges in the industry.
- The **professionalism** questions are designed to explore how the relationship impacts ethical decision-making within the industry.
- Finally, the **recommendation** questions provide an opportunity for you to reflect and offer advice on improvement opportunities for the industry.
- Are you ready to begin?

Participant response: Allow a moment for the participants to respond. If affirmative -

Researcher Action: Turn on recording devise.

Researcher Action: Ask questions

Participant response: Allow a moment for the participants to respond to each question

Researcher Action: About halfway through interview offer participate a break. If affirmative -

Researcher Action: Turn off recording devise.

Researcher Action: Resume interview

Researcher Action: Turn on recording devise.

Researcher Action: Ask next questions

Participant response: Allow a moment for the participants to respond to each question

Researcher Action: Periodically check recording devise to make sure it is operating correctly.

Researcher Action: Ask last questions

Participant response: Allow a moment for the participants to respond to each question

Researcher Action: Ask participants if he would like to review or clarify responses to questions.

Researcher: Closing Remarks

- Do you have any other questions for me about the research, or anything else?
- Offer participant a copy of the interview transcript, which should be available in a few days.
- I've enjoyed talking with you today. Thank you for your time.

Researcher Action: Immediately document interview results.

Appendix K

IRB Approval

Ray Hickson

From:	Rick Fizz <Rick.Fizz@phoenix.edu>
Sent:	Tuesday, June 17, 2014 2:50 PM
To:	rchickson@email.phoenix.edu
Cc:	'leomallette@email.phoenix.edu' (leomallette@email.phoenix.edu); jhauer@email.phoenix.edu; blaviolette@email.phoenix.edu; Cody Hoban; Sheri Jones
Subject:	6-17-14 IRB: Full Board Review: Approved - Ray Hickson

Date 6-17-2014

Dear **Ray Hickson:**

The role of the University of Phoenix Institutional Review Board (IRB) is to review research studies proposed by students, faculty and others to determine compliance with federally mandated regulations and local requirements regarding protection of human subjects in research studies conducted in accordance with University policies. Your IRB Application for the research study titled *Project Managers Perceptions Of The Primary Factors Contributing To Failure Or Success Of Projects: A Qualitative Phenomenological Study* was recently reviewed by the Board. I am pleased to confirm that the Board has determined your IRB Application is approved and your study is determined to be exempt. This means you may proceed/continue with data collection.

Please understand that this approval is subject to the following:

1. The approval is valid for one year from the date of this communication. If your research study is not completed by one year from the date of this communication, the approval will expire and you must resubmit a completed "Request for IRB Time Extension" form and an updated copy of your IRB Application. For further information regarding this process, please reference the IRB Advisement Tool. All advisement tools can be found on the SAS Web within eCampus.

2. IRB approval for your research study is based upon the information you provided in your IRB Application. If any aspects of your research study change significantly (such as a change in scope, data collection sites, etc.), you must notify the Board of the changes and request approval for continuance of the research under the new conditions. This can be done through the "IRB Change Request for Previously Approved Study" form. Please consult with your Dissertation Chair if you have a question as to whether a change you have made requires Board review and approval.

3. Any conditions that may be associated with this approval decision must be satisfied before data collection commences. Notification of fulfillment of conditions to the Board is

required and Board concurrence is expected. Notification may be done by contacting the Board at: IRB@phoenix.edu.

4. Please retain this communication as documentation of IRB approval of your study.

5. Any conflict of interest that may occur with regard to your study or your role as the primary researcher must be reported promptly to the IRB.

6. Permission to use published surveys, materials, private databases, or other records must have the explicit approval of the author/owner.

7. Any tape recording associated with data collection must be explicitly stated as part of the Informed Consent to which subjects must agree.

8. Individual identity protection must be maintained and separation of Informed Consent from the primary data collection instrument is required.

If you have any questions about human subject protection in research, please refer to the CITI web site (www.citiprogram.org) or contact the University of Phoenix IRB at IRB@phoenix.edu. Best wishes for the successful completion of your study.

Sincerely,

Institutional Review Board

Rick Fizz
Faculty Liaison - Academic Affairs

University of Phoenix
School of Advanced Studies | 1625 W. Fountainhead Pkwy. | Tempe, AZ 85282-2371
Mail Stop: CF-S909 **Phone** 602.713.7165
rick.fizz@phoenix.edu

Let's get to work™
facultymatters.com | Twitter | Facebook | LinkedIn | YouTube

Appendix L

Pilot Study Introduction, Informed Consent, and Confidentiality

PM Perceptions of Project Failure or Success

Welcome!

My name is Ray C. Hickson. I am pursuing a Doctorate of Management in Organizational Leadership through the University of Phoenix (UOPX). I am completing the final stage of the doctoral requirements, which is to conduct research in an area where there is a significant gap in knowledge. This research will culminate in a dissertation that will be published.

The topic of my research is to determine the primary factors contributing to project failure or success from a project manager's perspective. I am seeking your assistance with the pilot phase of my research. The pilot phase is critical to the overall success of this research project and requires participants to answer a series of potential research questions and critique the questions appropriateness to the research question. Participation is voluntary and your identity will remain confidential.

If you are interested in supporting this effort please continue to the next page. If you have questions, please contact me at my personal email or phone number listed below.

Thank you in advance for your participation in this research study. Your feedback is important and appreciated.

Ray C. Hickson, PMP

Doctoral Candidate, University of Phoenix
Email: rchickson@yahoo.com
Phone: (410) 967-5683

Page 1

PM Perceptions of Project Failure or Success

Research Overview

The Problem
Despite the development of highly specialized project management methodologies, projects are continuing to fail at alarmingly high rates. Most recent research shows the following:

* Approximately 40% of construction projects fail and approximately 70% of information technology projects fail (Al – Khouri, 2012; Ferrell, 2010; Heagney, 2012).

* Over 53% of projects are partial failures or projects completed without budget overruns, missed deadlines, sometimes without full functionalities, and 29% are abandoned or canceled completely (Toader et al., 2010; Heagney, 2012).

* Only 18% of all information management projects finished on time, within quality parameters, and on budget according to the CHAOS report, which documents project failure rates, issued by the Standish Group (1995).

Purpose Statement
The purpose of this qualitative interpretative phenomenological study is to examine project managers' perception and lived experiences with the primary factors contributing to failure or success of projects. Another purpose of this study is provide project managers the opportunity to give an unqualified assessment of their lived experiences of the factors contributing to project failure or success instead of a priori of categories to fit their opinions. The specific aim of this study include understanding each individual's account, experience, and the shared meaning amongst project managers as their decisions contribute to the failure or success of projectsphenomena.

Qualitative research question
The research question is: How do project managers' perceive the factors contributing to failure or success rates of projects based on their lived experiences? It can be assumed that the factors contributing to failure or success of projects may or may not depend on the project management team composition and its relationship to project stakeholders. A project manager's experience with the factors contributing to failure or success of projects may or may not be consistent from project to project.

The anticipated study goals:
This study might identify primary factors that can lead to project failure or success based on the perceptions of project managers. This study may result in corrective actions that can enable project success based on the perceptions of project managers.

The benefits of the study to the subjects, to the organization, and to society:
Decreasing project failures will reduce and eliminate the economic impact to the stakeholders when projects fail The Standish Report, 1985. The results of this study may increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures.

PM Perceptions of Project Failure or Success

Informed Consent

I am doing a research study entitled Project Managers Perceptions of the Primary Factors Contributing to Failure or Success of Projects. The purpose of this research study will be to examine project managers' perception of the primary factors contributing to failure or success rates of projects from the perspective of project managers.

Your participation will involve completing a questionaire, one-on-one interview, or both. You can decide to be a part of this study or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any outside party.

In this research, there are no foreseeable risks to you. Although there may be no direct benefit to you, a possible benefit from your being part of this study is to increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures. .If you have any questions about the research study, please call me at 410-967-5683 or e-mail rchickson@yahoo.com. For questions about your rights as a study participant, or any concerns or complaints, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

As a participant in this study, you should understand the following:

1. You may decide not to be part of this study or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.

2. Your identity will be kept confidential.

3. Ray C. Hickson, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.

4. If interviews are done, they may be recorded. If they are recorded, you must give permission for the researcher, Ray C. Hickson, to record the interviews. You understand that the information from the recorded interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.

5. Data will be kept in a secure and locked area. The data will be kept for three years, and then destroyed.

6. The results of this study may be published.

7. "By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

1. Do you agree to the terms as stated above

◯ Yes, I accept the above terms.

◯ No, I donot accept the above terms.

PM Perceptions of Project Failure or Success

Confidentiality Statement

As a researcher working on "Project Managers Perceptions of the Primary Factors Contributing to Failure or Success of Projects: A Qualitative Phenomenological Study" at the University of Phoenix, I understand that I must maintain the confidentiality of all information concerning all research participants as required by law. Only the University of Phoenix Institutional Review Board may have access to this information. "Confidential Information" of participants includes but is not limited to: names, characteristics, or other identifying information, questionnaire scores, ratings, incidental comments, other information accrued either directly or indirectly through contact with any participant, and/or any other information that by its nature would be considered confidential.

In order to maintain the confidentiality of the information, I hereby agree to refrain from discussing or disclosing any Confidential Information regarding research participants, to any individual who is not part of the above research study or in need of the information for the expressed purposes on the research program. This includes having a conversation regarding the research project or its participants in a place where such a discussion might be overheard; or discussing any Confidential Information in a way that would allow an unauthorized person to associate (either correctly or incorrectly) an identity with such information.

I further agree to store research records whether paper, electronic or otherwise in a secure locked location under my direct control or with appropriate safe guards. I hereby further agree that if I have to use the services of a third party to assist in the research study, who will potentially have access to any Confidential Information of participants, that I will enter into an agreement with said third party prior to using any of the services, which shall provide at a minimum the confidential obligations set forth herein. I agree that I will immediately report any known or suspected breach of this confidentiality statement regarding the above research project to the University of Phoenix, Institutional Review Board.

Appendix M

Pilot Study Biographical and Demographic Questionnaire

PM Perceptions of Project Failure or Success

Biographical Data

The purpose of this form is to document the locaation, education and experience level of participants of this study. You may skip or not answer any question that you are uncomfortable answering, but remember all responses will be kept confidental.

1. Participant information

Current Title

Summary Job Description

City/Town

State

Country

2. What is the highest level of education you have completed?

- ◯ High school or GED
- ◯ College
- ◯ Graduate School
- ◯ Post Graduate School

Other (please specify)

3. How long have worked in Project Management?

- ◯ 1 - 3 years
- ◯ 3 - 6 years
- ◯ 6 - 9 years
- ◯ 9 or more years

4. Do you have Project Management Profession (PMP) certification?

- ◯ Yes
- ◯ No

Other Project Management certification

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PM Perceptions of Project Failure or Success

5. How long have you held PMP certification?

- ◯ 1 - 3 years
- ◯ 3 - 6 years
- ◯ 6 - 9 years
- ◯ 9 or more years

6. Do you have a particular area of Project Management that you have specialized expertise?

- ◯ Planning and Scheduling
- ◯ Cost Management
- ◯ Estimating
- ◯ EVMS

Other (please specify)

7. What types of projects have you worked on? Check all that apply.

- ☐ Construction
- ☐ Engineering
- ☐ IT
- ☐ Other (please specify)

8. Have you worked in a leadership role on a project?

- ◯ yes
- ◯ No

Other (please specify)

9. How many years have you worked in a leadership role on a project?

- ◯ 1- 3 years
- ◯ 3- 6 years
- ◯ 6- 9 years
- ◯ 9 or more years

PM Perceptions of Project Failure or Success

10. What is the approximate dollar value of the projects you are currently assigned to manage?

- ◯ less than 1 million
- ◯ 1 - 5 million
- ◯ 5 - 10 million
- ◯ 11 - 15 million
- ◯ 15 - 20 million
- ◯ 20 million or more

Appendix N

Pilot Study Questionnaire

PM Perceptions of Project Failure or Success

Research Questionaire

Please answer the following questions based on your preceptions and in the context of your lived experiences. You may skip or not answer any question that you are uncomfortable answering, but remember all responses will be kept confidental.

1. What constitutes a successful project?

2. What constitutes a failed project?

3. Why do some projects fail while others succeed?

4. Describe as many factors as you can that contribute to project success?

5. Describe as many factors as you can that contribute to project failure?

6. Describe what can be done to increase the likelyhood of project success?

7. Describe what can be done to decrease the likelyhood of project failure?

8. What project management tools, methodologies, or processes are helpful for attaining project success and why?

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PM Perceptions of Project Failure or Success

9. What project management tools, methodologies, or processes are not helpful for attaining project success and why?

10. Do you manage project differently today than you have in the past. Describe how your approach is different today than in the past.

11. What advice or guidance would you give a person newly assigned to the role of project manager regarding project failure or success?

12. Do you think there is a relationship between experience, qualifications, certification, and project success or failure? Please explain your response.

13. Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above.

14. This concludes the Pilot questionaire. Do you think the questions posed will provide an answer the research question? If no are there other questions that should be asked and why?

PM Perceptions of Project Failure or Success

End of Survey

1. Do you have any other comments, questions, or concerns?

2. Participant Information

Name	
Address	
City/Town	
State/Province	
ZIP/Postal Code	
Country	
Email Address	
Phone Number	

Thank you for your participation. The results of this study may be published as part of my dissertation requirement. Your identity will remain confidential in any subsequent publications for your protection. If you have additional questions about this effort please contact me at my personal e-mail rchickson@yahoo.com or at my phone 410-967-5683.

Thank you,

Ray C. Hickson, PMP

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Appendix O

Validated Introduction, Informed Consent, and Confidentiality

PM Perceptions of Project Sucess or Failure

Welcome!

My name is Ray C. Hickson. I am pursuing a Doctorate of Management in Organizational Leadership through the University of Phoenix (UOPX). I am completing the final stage of the doctoral requirements, which is to conduct research in an area where there is a significant gap in knowledge. This research will culminate in a dissertation that will be published.

The topic of my research is to determine the primary factors contributing to project success or failure from a project manager's perspective. I am seeking your assistance with my research. Your assistance is critical to the overall success of my research project. This phase requires participants to answer a series of open-ended research questions designed to address the overall research question. Participation is voluntary and your identity will remain confidential.

If you are interested in supporting this effort please continue to the next page. If you have questions, please contact me at my personal email or phone number listed below.

Thank you in advance for your participation in this research study. Your feedback is important and appreciated.

Ray C. Hickson, PMP

Doctoral Candidate, University of Phoenix
Email : rchickson@yahoo.com
Phone: (410) 967-6683

PM Perceptions of Project Sucess or Failure

Research Overview

The Problem
Despite the development of highly specialized project management methodologies, projects are continuing to fail at alarmingly high rates. Most recent research shows the following:

* Approximately 40 % of construction projects fail and approximately 70 % of information technology projects fail (Al – Khouri, 2012; Ferrell, 2010; Heagney, 2012).

* Over 53 % of projects are partial failures or projects completed without budget overruns, missed deadlines, sometimes without full functionalities, and 29 % are abandoned or canceled completely (Toader et al., 2010; Heagney, 2012).

* Only 18 % of all information management projects finished on time, within quality parameters, and on budget according to the CHAOS report, which documents project failure rates, issued by the Standish Group (1995).

Purpose Statement
The purpose of this qualitative interpretative phenomenological study is to examine project managers' perception and lived experiences with the primary factors contributing to success or failure of projects. Another purpose of this study is provide project managers the opportunity to give an unqualified assessment of their lived experiences of the factors contributing to project success or failure instead of a priori of categories to fit their opinions. The specific aim of this study include understanding each individual's account, experience, and the shared meaning amongst project managers as their decisions contribute to the success or failure of projects phenomena.

Qualitative research question
The research question is: How do project managers' perceive the factors contributing to success or failure rates of projects based on their lived experiences? It can be assumed that the factors contributing to success or failure of projects may or may not depend on the project management team composition and its relationship to project stakeholders. A project manager's experience with the factors contributing to success or failure of projects may or may not be consistent from project to project.

The anticipated study goals:
This study might identify primary factors that can lead to project success or failure based on the perceptions of project managers. This study may result in corrective actions that can enable project success based on the perceptions of project managers.

The benefits of the study to the subjects, to the organization, and to society:
Decreasing project failures will reduce and eliminate the economic impact to the stakeholders when projects fail. The Standish Report, 1995. The results of this study may increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures.

PM Perceptions of Project Sucess or Failure

Informed Consent

I am doing a research study entitled Project Managers Perceptions of the Primary Factors Contributing to Success or Failure of Projects. The purpose of this research study will be to examine project managers' perception of the primary factors contributing to failure or success rates of projects from the perspective of project managers.

Your participation will involve completing a questionaire, one-on-one interview, or both. You can decide to be a part of this study or not. Once you start, you can withdraw from the study at any time without any penalty or loss of benefits. The results of the research study may be published but your identity will remain confidential and your name will not be made known to any outside party.

In this research, there are no foreseeable risks to you. Although there may be no direct benefit to you, a possible benefit from your being part of this study is to increase the percentage of successfully implemented projects, lower the percentage of failed projects, and reduce the economic loss to project stakeholders because of project failures. .If you have any questions about the research study, please call me at 410-967-6683 or e-mail rchickson@yahoo.com. For questions about your rights as a study participant, or any concerns or complaints, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

As a participant in this study, you should understand the following:

1. You may decide not to be part of this study or you may want to withdraw from the study at any time. If you want to withdraw, you can do so without any problems.
2. Your identity will be kept confidential.
3. Ray C. Hickson, the researcher, has fully explained the nature of the research study and has answered all of your questions and concerns.
4. If interviews are done, they may be recorded. If they are recorded, you must give permission for the researcher, Ray C. Hickson, to record the interviews. You understand that the information from the recorded interviews may be transcribed. The researcher will develop a way to code the data to assure that your name is protected.
5. Data will be kept in a secure and locked area. The data will be kept for three years, and then destroyed.
6. The results of this study may be published.
7. "By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."

1. Do you agree to the terms as stated above

◯ Yes, I accept the above terms.

◯ No, I do not accept the above terms.

PM Perceptions of Project Sucess or Failure

Confidentiality Statement

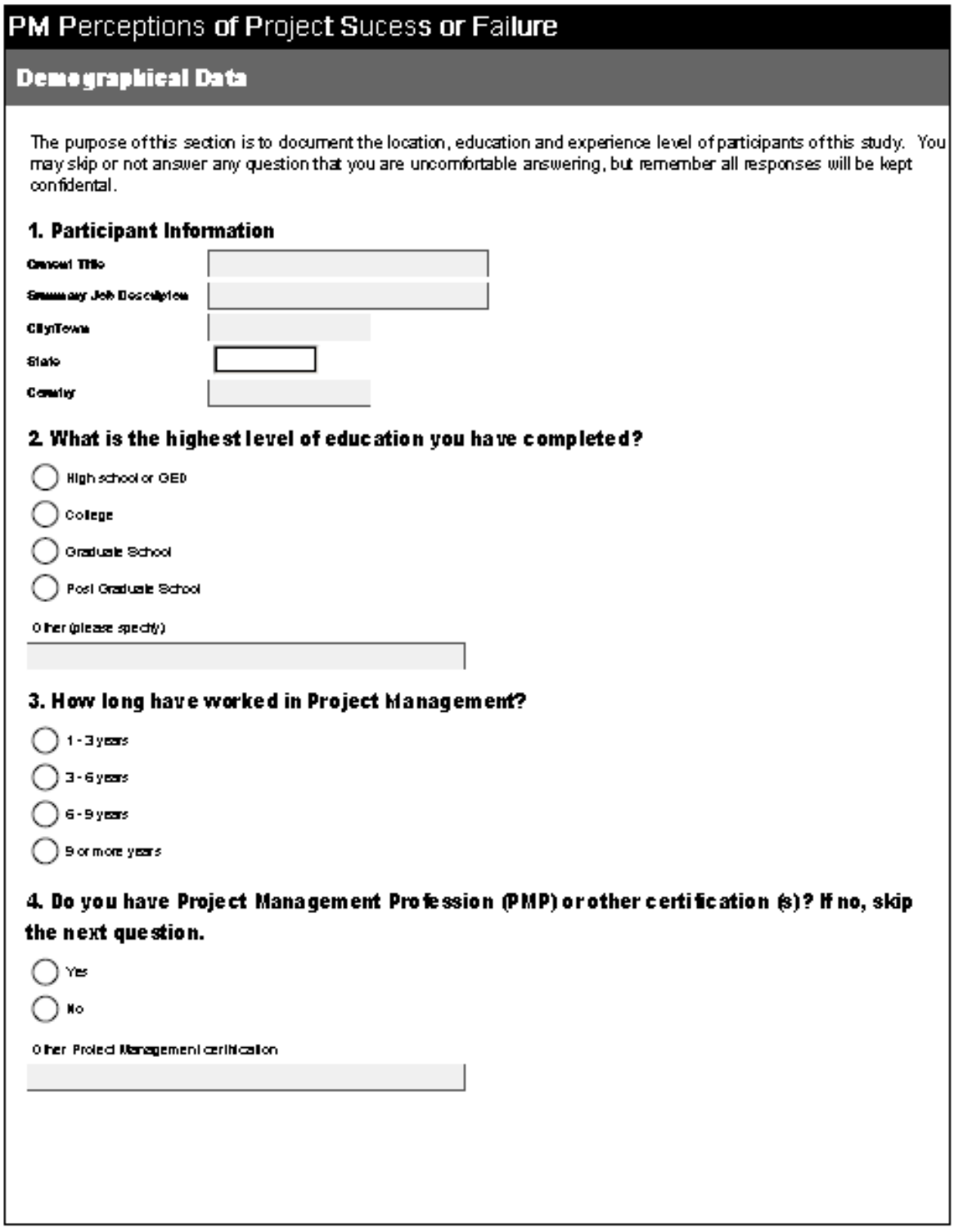
As a researcher working on "Project Managers Perceptions of the Primary Factors Contributing to Success or Failure of Projects: A Qualitative Phenomenological Study" at the University of Phoenix, I understand that I must maintain the confidentiality of all information concerning all research participants as required by law. Only the University of Phoenix Institutional Review Board may have access to this information. "Confidential Information" of participants includes but is not limited to: names, characteristics, or other identifying information, questionnaire scores, ratings, incidental comments, other information accrued either directly or indirectly through contact with any participant, and/or any other information that by its nature would be considered confidential.

In order to maintain the confidentiality of the information, I hereby agree to refrain from discussing or disclosing any Confidential Information regarding research participants, to any individual who is not part of the above research study or in need of the information for the expressed purposes on the research program. This includes having a conversation regarding the research project or its participants in a place where such a discussion might be overheard; or discussing any Confidential Information in a way that would allow an unauthorized person to associate (either correctly or incorrectly) an identity with such information.

I further agree to store research records whether paper, electronic or otherwise in a secure locked location under my direct control or with appropriate safe guards. I hereby further agree that if I have to use the services of a third party to assist in the research study, who will potentially have access to any Confidential Information of participants, that I will enter into an agreement with said third party prior to using any of the services, which shall provide at a minimum the confidential obligations set forth herein. I agree that I will immediately report any known or suspected breach of this confidentiality statement regarding the above research project to the University of Phoenix, Institutional Review Board.

Appendix P

Validated Biographical and Demographic Questionnaire



PM Perceptions of Project Sucess or Failure

Demographical Data

The purpose of this section is to document the location, education and experience level of participants of this study. You may skip or not answer any question that you are uncomfortable answering, but remember all responses will be kept confidental.

1. Participant Information

Current Title

Summary Job Description

City/Town

State

County

2. What is the highest level of education you have completed?

- High school or GED
- College
- Graduate School
- Post Graduate School

Other (please specify)

3. How long have worked in Project Management?

- 1 - 3 years
- 3 - 6 years
- 6 - 9 years
- 9 or more years

4. Do you have Project Management Profession (PMP) or other certification (s)? If no, skip the next question.

- Yes
- No

Other Project Management certification

PM Perceptions of Project Sucess or Failure

5. How long have you held PMP or other certification (s)?

- ◯ 1 - 3 years
- ◯ 3 - 6 years
- ◯ 6 - 9 years
- ◯ 9 or more years

6. Do you have a particular area of Project or Program Management that you have specialized expertise?

- ◯ Planning and Scheduling
- ◯ Cost Management
- ◯ Estimating
- ◯ EVMS
- ◯ Contract Management
- ◯ Leadership or management

Other (please specify)

7. What types of projects have you worked on? Check all that apply.

- ☐ Construction
- ☐ Engineering
- ☐ IT
- ☐ Other (please specify)

8. Have you worked in a leadership or management role on a project? If no, skip next question.

- ◯ yes
- ◯ No

Other (please specify)

PM Perceptions of Project Sucess or Failure

9. How many years have you worked in a leadership or management role on a project?

- ◯ 1-3 years
- ◯ 3-6 years
- ◯ 6-9 years
- ◯ 9 or more years

10. What is the approximate dollar value of the projects you are currently assigned to manage?

- ◯ less than 1 million
- ◯ 1 - 5 million
- ◯ 5 - 10 million
- ◯ 11 - 15 million
- ◯ 15 - 20 million
- ◯ 20 million or more

Appendix Q

Validated Questionnaire

PM Perceptions of Project Sucess or Failure

Research Questionnaire

Please answer the following questions based on your preceptions and in the context of your lived experiences. You may skip or not answer any question that you are uncomfortable answering, but remember all responses will be kept confidental.

1. What constitutes a successful project?

2. What constitutes a failed project?

3. Why do some projects fail while others succeed?

4. Describe as many factors as you can that contribute to project success?

5. Describe as many factors as you can that contribute to project failure?

6. Describe what can be done to increase the likelihood of project success?

7. Describe what can be done to decrease the likelihood of project failure?

8. What project management tools, methodologies, or processes are helpful for attaining project success and why?

PM Perceptions of Project Sucess or Failure

9. What project management tools, methodologies, or processes are not helpful for attaining project success and why?

10. Do you manage project differently today than you have in the past. Describe how your approach is different today than in the past.

11. What advice or guidance would you give a person newly assigned to the role of project manager regarding project failure or success?

12. Do you think there is a relationship between experience, qualifications, certification, and project success or failure? Please explain your response.

13. Evaluate the following statements. Which area will most likely lead to project failure or success?

	Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree	N/A
Project Execution or Implementation	○	○	○	○	○	○
Management Involvement	○	○	○	○	○	○
Stakeholder/Sponsor Involvement	○	○	○	○	○	○
Resources Management	○	○	○	○	○	○
Scope Control	○	○	○	○	○	○
Schedule Control	○	○	○	○	○	○
Cost Control	○	○	○	○	○	○

Other (please specify)

14. Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

PM Perceptions of Project Sucess or Failure

End of Survey

1. Do you have any other comments, questions, or concerns?

2. Participant Information

Name	
Address	
City/Town	
State/Province	
ZIP/Postal Code	
County	
Email Address	
Phone Number	

Thank you for your participation. The results of this study may be published as part of my dissertation requirement. Your identity will remain confidential in any subsequent publications for your protection. If you have additional questions about this effort please contact me at my personal e-mail rchickson@yahoo.com or at my phone 410-967-9683.

Thank you,

Ray C. Hickson, PMP

Appendix R

Results/Findings

Pilot study (Phase One) Questions

The phase one questionnaire results in this section are organized by the questions in the survey.

What constitutes a successful project?

1. A successful project is one that fulfills the stated goals and objectives of the project.
2. Maintain triple constraints: cost, schedule & scope of the project. Finalize the requirements. Agree what we can do. Finalize scope of the project and get signed off from customer.
3. A successful project is one that delivers its core objective of adding value for the customer, by way of reducing operational expense and maximize throughput/income and off course within budget .time, cost, scope and last but not the least with in quality parameters.
4. A successful project is one that is meeting or has met its stated objectives and is within budget, scope, and schedule. Moreover, the success should culminate in a usable new product or service that meets a need.
5. A successful project meets the goals of the project as put forth and agreed to by the organization, in support of the overall organizational goals. Requires that the organization have project objectives aligned with org objectives, which include the allocation of sufficient project resources.

6. Completing the project scope on time, within budget and with the specified quality
7. Communication, collaboration, and detailed information organization to implement all step execution processes and procedures toward milestones, goals and project completion.
8. Providing on-time cost effective solution that meets customer requirements and fulfills the intended function.
9. Whatever is defined as success criteria
10. Meeting the customer's requirements
11. On time, on budget delivery.
12. Clear Goals in budget allocated, open communication, established structure and reporting tools and the meeting of goals with financial goals.
13. One that meets the stated needs of the key stakeholders and is delivered on time and on budget (and with no dead bodies).

What constitutes a failed project?

1. A failed project is one that does not meet the stated goals and objectives of the project. Deviation (scope creep) from project scope defined.
2. This could be on time, within budget as per scope but may not help stakeholder achieve real value addition. Generally projects are considered failed when they fail on triple constraints which are pretty subjective.
3. A failed project is simply one that has not met its stated purpose. Contributors to project failure include but are not limited to the project running: behind schedule, over budget, and out of scope.

4. Definition of a failed project depends on the organization and the overall goals of the project. Generally, a failed project does not meet its initial goals and objectives, which include the basics of schedule, budget and quality. However, a project may meet all of those metrics can still be considered a failure if the project does not enable the organization to achieves the higher organization level objectives.
5. Poor quality, over budget, or completing late. Having accidents, injuries, or fatalities. Not satisfying a reasonable customer.
6. Lack of POC communication, necessary and appropriate information gathering and incomplete cost estimation.
7. Not meeting one or more of the above items or not completing the project at all.
8. Always depends who you ask, some people will always say a failure and other a success. A failure suggests there are no degrees of failing. It's really when the success criteria are not met and the criteria that are not met cannot be explained by the unknown unknowns
9. Not meeting the customer's requirements
10. An uncompleted/cancelled project.
11. Poor Communication. No established link between deliverables and schedule. no risk management.
12. A project that has problems with any one of the following: Quality (buggy or too many manual work-around) Budget (cost / benefit business case is not met) Schedule (delivered later than planned - generally impacts the budget and is an outcome if there are quality problems)

Why do some projects fail while others succeed?

1. The reasons for project success or failure are vast and vary depending on the individual project. Factors that contribute to project success or failure may include: planning, resources (human and financial), and leadership/management,
2. Communication is the main difference rather effective communication. Without it one will have unclear requirements, unrealistic expectations, cost overruns, delays and what not.
3. Projects, by their nature, are unique. Similar projects, however, may succeed or fail for varying reasons.
4. (Refer to other responses)
5. Lack of planning, poor scope definition, inaccurate cost estimates, low quality or unqualified subcontractors or employees, poor communication among stakeholders, inaccurate and untimely documents
6. Degrees of Management Discipline and follow through are applied with varying intensities.
7. Most fail due to lack of proper requirements.
8. What a question. Many reasons. If the success factors are not in place a project will never succeed. Even with success factors in place there may be reasons why events have caused a project to be no longer viable from a financial and doable perspective
9. Improper planning overselling the project then causing management to loose
10. Unrealistic expectations, uninformed stakeholders, regulatory impacts.
11. 90% is due to planning and communication. 10%...Luck.

12. Largely a function of executive support, project champion engagement and decision making, and a clear understanding of what the project are to deliver and the value to the organization.

Describe as many factors as you can that contribute to project success?

1. A well written and comprehensive project with stakeholder buy-in, adherence to the project plan, regular, transparent and effective communication with stakeholder and project stakeholders, project manager with working knowledge and experience with a proven project management methodology, and project manager with strong leadership skills.
2. Maintain triple constraints: Cost, Schedule & Scope of the project. Finalize the requirements. Finalize scope of the project and get signed off from customer. Make detailed plan with schedule. Ensure availability of resources on time Identify possible risks in early stages & mitigation plans with budget. Track the progress and communicate to stakeholders. Any change in the requirement from customer has to go through change management approval process and review schedule & cost for the change in requirement/scope.
3. Effective communication, effective risk management ,effective feasibility study, skilled labor/teams, strict change management, quality management, cost and time management
4. 1) Adherence to sound project management principles; 2) Capable leaders; 3) Job experience; 4) Adequate resources; 5) Appropriate tools and techniques applied.
5. Defined, measurable goals. Alignment of project goals with organizational goals. Sufficient resources (money and staff) allocated to project. Project is sufficiently

defined and ready to be executed. Simple projects are easier than difficult projects. Higher compensation and bonus structures for project staff. Keep senior project team consistent but continue to rotate new, junior members into the project team; ensures consistency and growth.

6. Well defined scope early in the project, good cost estimates, integrated planning among project stakeholders, well executed change control process, schedule commitments among stakeholders, sense of urgency, safe work practices, good drawings and specs, great communications.
7. Thorough study and understanding of all available and applicable project related information, efficient stakeholder and contractor collaboration, timely and efficient work execution and minimization of the Change Work Order Process.
8. Requirements that are relevant, traceable to substantiated needs, and envelop a complete process. Knowledgeable users not impacted by politics, outside influence, or perceptions; that know how to formulate a requirement. Ability to understand a straight line process devoid of exceptions, then add the exceptions as the "system" requirements evolve. Viable sponsorship with adequate funding, ability and authority to make decisions. Formal change control process with participants knowledgeable with the project, its objectives, and processes. Properly staffed delivery team.
9. Finished on time. Finished on budget. Minimum number of agreed scope changes. Activities carried out as scheduled. Met planned quality standard Complied with environmental regulations. Met safety standards. Cost effectiveness of work Learned from project. Adhered to defined procedures. End

product used as planned. The product satisfies the needs of users. New understanding of knowledge gained. Project's impacts on beneficiaries are visible. Project achieved it purpose. End-user satisfaction. Project has a good reputation. Enabling of other project work in the future. Motivated for future projects. Improvement in organizational capability. Resources mobilized and used as planned. Sponsor satisfaction. Steering group satisfaction. Met stakeholder's requirements. Met organizational objectives.

10. Planning, scheduling, resource allocation, risk management, good decision making at the project and portfolio level.
11. A true team environment where every member of the project teams, especially the stakeholder, is a team player looking for solutions to problems instead of casting blame.
12. Team work. Scheduling tools. OBS and WBS Defined well. Change Management enforced and in place. Communication. Experience.
13. Good planning. Having enough money. Executive support. Realistic expectations. A realistic schedule. Involved stakeholders. Dedicated team members (in both definitions of the word). A feedback mechanism that keeps your team informed as to status and how their personal contribution is helping to achieve (or not) the project goals.

Describe as many factors as you can that contribute to project failure?

1. Project Manager with poor project management and leadership skills, no or inadequate project plan, lack of resources and/or resources dedicated to the project (i.e. personnel)

2. Uncontrolled Scope change. Deviation from maintaining triple constraints tracking progress and comparing to planned work. Risks that impact the progress of project.
3. If above all in point no 4 are not affective, they will lead one project to the failure. It's about a chain of actions which really determine the fate of the project.
4. Poor planning and risk management.
    1) Failure to adequately plan a project (scope/schedule/costs);
    2) Poor risk management planning,
    3) Failure to foresee impact on all stakeholders.
5. Too many chiefs running the project. Lack of command/control structure. Alternating decisions and changed minds by senior management. Conversely, senior management that only will dictate and not support needs of PMs and project staff. Changing of project staff and senior leadership of life of a long project. Project complexity (major software projects) with unrealistic goals. Combined with unrealistic goals comes too little funding or lack of capable staff. Staff overloads, which comes from organizations trying to drive too much productivity and profit out of individuals. Lack of staff interest (burnout, boredom). Longer projects more likely to fail.
6. Poor communications, unreasonable time frames and budget, low quality documents, poorly defined scope of work, incompetent employees and subcontractors, unreasonable customers/owners, deceitful practices, poor schedule execution, misuse of funds, and weather delays.

7. Lack of related project information gathering, ineffective and un-scheduled communication practices, improper or inadequate work execution methods, inadequate pre-scheduling, and planning.
8. "SMEs" who really don't understand the process or ultimate goal. Hidden agendas and political motivation. Incomplete requirements that don't reflect a complete process. No sponsorship. No change control. Lack of funding. Indecision. Improperly staffed delivery team.
9. Did not finish on time. Did not finish on budget, etc. Minimum number of agreed scope changes. Activities carried out as scheduled. Met planned quality standard. Complied with environmental regulations. Met safety standards. Cost effectiveness of work. Learned from project. Adhered to defined procedures. End product used as planned. The product satisfies the needs of users.
10. New understanding of knowledge gained. Project's impact on beneficiaries is visible. Project achieved it purpose. End-user satisfaction. Project has a good reputation. Enabling of other project work in the future. Motivated for future projects Improvement in organizational capability. Resources mobilized and used as planned. Sponsor satisfaction. Steering group satisfaction. Met stakeholder's requirements. Met organizational objectives management, project definition, poor planning, poor risk identification.
11. Unrealistic expectations, unsound project baselines at the start of the project.
12. Poor Communication. No tracking of funds or work accomplished.
13. The inverse of everything in item 4.

Describe what can be done to decrease the likelihood of project failure?

1. Same as number 6.
2. Implement point no 6, build up an environment that is crazy for the success and open to ideas, take stakeholders on board, keep up analysis from business perspective at first before starting over actual work, keep in place effective change management , risk management from technical and operational perspective.
3. Take heed to lessons learned from similar projects. Plan current project accordingly. Assess costs to the fullest extent possible. Anticipate risks and put in place appropriate mitigation strategies (such as risk avoidance, acceptance, transfer, and minimization).
4. (Flipside of project success)
5. Have experienced stakeholders committed to success with a comprehensive plan to execute the project, and the ability to recognize and correct problems asap
6. Anticipation and implementation of related project risk mitigation.
7. Replace a weak project manager. Identify improper delivery team members and replace them. Obtain real/empowered sponsorship. Institute formal change control processes.
8. To think and be proactive.
9. Projectize the organization and have a formal project management methodology
10. A reduction in political schedules and estimates.
11. Lack of experience. Lack of communication. No boundaries for team members. No tool to track or plan progress.

12. Don't force the budget or the timeline unless there is no other option. And, if you have to force one or both, make sure there is a full understanding of what will have to be sacrificed as a result. Many times a project delivers what it was supposed to deliver (successful) but nobody remembers the tradeoffs that were agreed to along the way. You made the schedule to meet a stakeholder commitment but the quality or budget suffered. These projects are then deemed failures.

What project management tools, methodologies, or processes are helpful for attaining project success and why?

1. I use and follow the PMI's PMP methodology for managing projects. Processes used depend on the project but the critical factor with all projects is that the processes should be documented in writing and staff training around the processes must take place. I find any PM tool that is automated and any tool that helps create transparency to be helpful and important for project success. Automated tools can help eliminate human error and save time. Transparency tools help to keep important factors about the project visible to the entire team and help to create teamwork.
2. PMI / Prince2 prescribed tools; methodologies are proven for project success.
3. Tools are helpful like any collaboration tool say Jira, Agile is a good one for IT but for construction one has to think hard and deep since it's a multiple vendor contract and sub contracts here one should see, analyze the approach, mix and match traditional approach,` and agile wherever possible to optimize quality of work

4. Attaining project success depends on the requirements and the tools needed to achieve them. Certainly scheduling tools are useful, as well as tools for measuring earned value.
5. Well-conceived scope of work documents, multi-level interactive project life cycle schedule and budget, an EVMS that is timely and reactive, well established project goals and metrics that can be used to assess the health of a project. The aforementioned tools are necessary to properly synchronize the interactions of the many project stakeholders into a coordinated best path to project execution.
6. Communication, coordination, estimation, execution and completion checklists to ensure or greatly reduce warranty call back.
7. Requirements. Properly prepared project schedule Formal change control processes. Risk identification and mitigation process. Timely reporting.
8. Depends on the need of the project, planning, tools, an appropriate methodology etc.
9. All that is stated in the PMBOK plus a coherent methodology.
10. Tools to integrate scope, schedule and budget. But the most valuable tool is management support. Without the support of management no tool will work.
11. Established SOPs in the PMBOK are a solid foundation to go from. These have been tried and true.
12. RACI (doesn't need to be formal but you need to know who is responsible for what and they need to agree with your assignments otherwise you will not be able to hold team members accountable). Issues and actions tracker (manage the hell out of it). Schedule (if you don't know what needs to be done by whom and by

when, you won't know if you are ahead of or behind schedule). Some kind of status mechanism to keep your team informed and aligned, and your stakeholders informed and accountable for escalation assistance. Waterfall is the only methodology that seems to work best for large projects (projects that span more than two delivery cycles).

What project management tools, methodologies, or processes are not helpful for attaining project success and why?

1. Can't think of any that are not helpful. In my experience, the least helpful have been project status meetings with corporate executives.
2. Using just excel sheets to track project progress will not help.
3. Any methodology that does not involve stakeholders and cause show stopper at any stage. Project dynamics should be well set before it is kicked off .One has to set the right tone at the right time. It is not about tools, it's mainly about approach.
4. Not all project management tools, methodologies, or processes are usable or effective on all projects. Attaining project success depends on the requirements and the tools needed to achieve them.
5. I don't have any specific PM tool that I would not consider helpful, but the project team must not let the tools alone define the job, but should allow the tools to assist the process of PM.
6. Project Proposals with flaws that lend themselves to questions, possible risk expectation and time extensions for final approval.

7. Anything that adds to nonproductive activities or provides little or no value to decision making processes.
8. Depends on the project
9. None that I can think of
10. Tools that don't integrate scope, cost and schedule. An impact to either one will have an impact to one or both of the others.
11. No Answer
12. Most of the rest of the formal PM tools. I haven't worked at a single organization that required anything more sophisticated than what I outlined in item 8.

Do you manage project differently today than you have in the past. Describe how your approach is different today than in the past.

1. No, of course, I apply new methods and tools as I learn them.
2. We use different approach for different projects depending upon the stakeholder needs and technology trend set. One has to adopt the methodology according to the needs that can serve the purpose at most.
3. Have not changed project management style. I use tools and techniques appropriate for the effort at hand.
4. Better understanding of the early phases of the project, more emphasis on up-front planning and project definition. Ensure organizational support. Ensure goals can't be changed on executives' whims. Focus on getting quality staff and smart people on projects. Junior staff is the key to ensuring both enthusiasm and new ideas.

5. Since the common use of computers in project management started 25 years ago, there has been less reliance on paper distribution of documents and schedules, so communication is much quicker. Because of enhanced portable communication devices, information can be shared while away from the computer desk. But the basics of good scope, schedule and budget management has not changed.
6. No.
7. Thoroughly employ the "lead, follow, or get out of the way" process. Ensure empowerment and sponsorship. In the past these were items that were assumed not invoked.
8. Of course contingency theory. No one project is the same
9. Details. Start from the WBS to define the work. Planning is a process.
10. No. My approach is the same. The role of the PM is to integrate the team. Ensure that there is dialog among the team members and serve as the "excuse eliminator".
11. I am pretty much the same way. It is by communication and expectation of each person's role and expertise in the plan.
12. Yes, I make my problems my stakeholders' problems. I am much firmer with regard to team member accountability and meeting their commitments. They aren't just letting me down when they don't deliver; they are also letting the whole team down.

What advice or guidance would you give a person newly assigned to the role of project manager regarding project success or failure?

1. Always begin with the end in mind. Before the project begins, you must fully understand what your client and stakeholders consider to be "success." Once known, develop and work your plan accordingly. Never be afraid to re-evaluate and to use your team to seek knowledge and advise; they are in their respective roles due to their skill and expertise.
2. New project manager should be clear what the project is, who are the stakeholders, how to manage them, what their expectations are and how to set back the expectations to avoid any conflict. He should be clear about the timelines and it should come with stakeholder involvement. He should have a right mindset to keep everyone required on board for effective communication and should always have not just the issues and risks in mind but possible solutions. New Project Manager should invest time to read every stakeholder very important.
3. I would advise the new project manager that a high percentage of IT and other projects fail.
4. Listen. Learn to take charge but in a humane, collaborative manner. Learn to work with others, but accept the fact that a PM is paid to make difficult decisions. Become certified and invest in ongoing project education. Accept that things will go wrong and always have some backup ideas.
5. Know how to use the tools of PM effectively and communicate wisely. Involve and inform the stakeholders to build a great team.
6. Apply best efforts to ensure efficient communication and understanding for all process phases by all parties involved.

7. If something doesn't make sense it's probably wrong, fix it.
8. Learn from the best, be proactive, consult, and only work with the best. A small team rather than big teams
9. Define what the work is, plan knowing no one finishes on time, and are overly optimistic, there is no good data from the past, communicate early and often, you are the ultimate owner.
10. Communication is the key. Communication with the team, including the stakeholder, is the key. Identify problems as soon as possible and try to mitigate them before they become big problems. Problems don't disappear, they grow.
11. Make sure you understand what the customer wants and make sure the customer understands what they are going to get with the existing PM tools in place.
12. Read Dr. James Brown's books and attend his Project Management Training. He has a very pragmatic approach.

Do you think there is a relationship between experience, qualifications, certification, and project success or failure? Please explain your response.

1. Absolutely. Managing a project is a profession that requires a specific set of knowledge and skills that can only obtained through actual work experience. I don't think professional training alone in project management will aid in project success any more than a doctor learning to be a surgeon by only reading books and not actually practicing the skill.
2. For experience yes there is a relation but not necessarily with qualification and certification, though it adds value but I have worked with many senior project and

program managers who do not have certification but brilliance just comes out of their work.

3. Yes, there is a relationship between the factors. While experience will vary from project manager to project manager, they can learn from what doesn't work for a project's success. With lessons learned comes experience. Certifications demonstrate competency to project management peers that one has sufficient knowledge to work within or manage a project. Along with education and training, certifications, and experience increase the likelihood of a successful project.
4. Absolutely, if only to the maturity of the project staff involved. Can be inversely proportional. Need to ensure project staff is past being interested in running projects. PMs suffer burnout as well from running projects. Certifications are great for a couple of reasons; helps ensure PM confidence, shows the organization supports project management methodologies, and in-turn project success. Flipside of certification is people can be book-certified and understand all the processes, steps, etc., and still be very poor project managers. Need right combination of training and experience. Certification (e.g. PMP) emphasizes processes, which is a solid approach. However, human understanding is needed to ensure flexibility and adaptation of those processes to actual projects. I've experienced some individuals who were excellent, process-oriented individuals but were terrible PMs because of their rigidity.
5. Yes, I do. Qualifications and certification should provide the understanding of the best PM practices, and experience should provide the Project Manager the

interpersonal skills necessary to effectively utilize and incorporate the PM practices on their projects.

6. Yes. The three qualities mentioned provide fluid continuity for overall project parameter need and demand.
7. There is a direct correlation between experience and qualification as long as the experience resulted in real learning. Certification is a badge but not a solution as many can pass tests but don't know how to apply skills. Success incorporates experience that can be applied to the current situation to identify risks and issues, provide mitigation strategy, and understand the implications when corrective action is taken.
8. Qualification and certification success experience. Success to do with project managers who know how to keep their teams satisfied. The team creates project success. Also project managers over 50 are the most successful. See Turner and Müller
9. No. Education is the key. Education first, then experience, then certifications. Just like in engineering
10. I believe experience and qualifications are keys. Certification only documents the experience and qualifications.
11. Yes. In short, lessons learned from the same 'mistakes' or learning moments can teach the next generation of PM's to avoid these issues.
12. Experience is important as the more rodeos you've been on, the better you get at it. As for certifications, I'm a strong proponent of the personal certification as opposed to the mandated corporate certification. The fact that someone pursues

the certification in order to improve them self says a lot more about that person's motivation and personal character than passing the test after a three-day boot camp mandated by your company. I.e. the distinguishing characteristic isn't the certification but rather how you got there.

Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

1. PM's on projects should be assigned based on their experience as PM's and not based on solely on their affiliation with the stakeholders. A PM does not need to be a SME, but it is imperative that they have enough knowledge and/or familiarity of the area to be able to make effective decisions.
2. Financial aspects with respect to project cash flows which is the mother of all the sins.
3. None.
4. PM tools and processes are time tested and proven to help a project attain success if they are correctly utilized on a project.
5. No.
6. Failure is attributed to those who don't know or fail to recognize what they don't know and aren't willing to take steps for correction.
7. No
8. Projects fail for unique reasons. They can be victims of circumstance. One time in one situation the exact same scope will be a success and another failure. it comes down to management's desire to make it a success for the strategic needs of the company.

9. Politics. Many times a project is underestimated both in cost and schedule in order to get it approved. Many times cost overruns and / or delays are only realism catching up. The question arises would the project be approved if the truth were told at the outset.
10. No.
11. I think you should have an editor review your intro and questions.

Do you think the questions posed will provide an answer the research question? Are there other questions that should be asked and why?

1. Yes. I would make the following editorial changes to the following questions: #6 - Add a "no" button. #8 - Question should allow only a "yes" or "no" option. #10 - Make the word "project" plural. #14 - add the word "to" before the word "the" in the second sentence.
2. I think yes to a certain extent.
3. Questions are adequate for the research to be undertaken.
4. Overall, yes. Suggest the questions are very broad and encompassing. Given the limited time available for respondents, combined with the depth of the questions asked, it is likely that none of the respondents can adequately and completely answer all of these questions simply due to time constraints. Thoughtful answers to these questions would require probably 15 minutes per question, or at least a couple hours to complete the questionnaire.
5. Yes
6. Yes
7. I think so, if not I'm available for face-to-face questioning and discussion.

8. You need to be more specific. Otherwise you get a list of responses which you can get from literature on project success or failure. There is a lot written on the topic already.
9. "Please describe a project that was a success, and why you think it was able to be successful" and the converse also, size matters. The bigger they are, the more chance for failure.
10. Yes.
11. Not at this time.
12. Repetitive. Too free form (I feel a little bit like I'm doing your homework for you). I would advocate force ranking on success and failure characteristics once you have a good selection.

Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

1. PM's on projects should be assigned based on their experience as PM's and not based on solely on their affiliation with the stakeholders. A PM does not need to be a SME, but it is imperative that they have enough knowledge and/or familiarity of the area to be able to make effective decisions.
2. Financial aspects with respect to project cash flows which is the mother of all the sins
3. None.
4. PM tools and processes are time tested and proven to help a project attain success if they are correctly utilized on a project.

5. No. 6 Failure is attributed to those who don't know or fail to recognize what they don't know and aren't willing to take steps for correction.
6. No
7. Projects fail for unique reasons. they can be victims of circumstance. one time in one situation the exact same scope will be a success and another a failure. It comes down to management's desire to make it a success for the strategic needs of the company.
8. Politics. Many times a project is underestimated both in cost & schedule in order to get it approved. Many times cost overruns and / or delays are only realism catching up. The question arises would the project be approved if the truth were told at the outset.
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asked, it is likely that none of the respondents can adequately and completely answer all of these questions simply due to time constraints. Thoughtful answers to these questions would require probably 15 minutes per question, or at least a couple hours to complete the questionnaire.

5. Yes
6. Yes.
7. I think so, if not I'm available for face-to-face questioning and discussion.
8. You need to be more specific. Otherwise you get a list of responses which you can get from a literature on project success or failure. There is a lot written on the topic already.
9. "Please describe a project that was a success, and why you think it was able to be successful". And the converse. Also, size matters. The bigger they are, the more chance for failure.
10. Yes.
11. Not at this time.
12. Repetitive. Too free form (I feel a little bit like I'm doing your homework for you). I would advocate force ranking on success / failure characteristics once you have a good selection.

Self-administered Questionnaire (Phase Two) Questions

The self-administered questionnaire results in this section are organized by the questions in the survey.

What constitutes a successful project?

1. Meets mutually agreed upon expectations around schedule, quality, and cost AND is adopted/used by intended audience
2. A successful project is a project that achieves the goals in budget and in time.
3. A project that meets the requirements it is intended to achieve within the scope, time, cost and risk parameters established for it.
4. Scope, cost and time met quality, reputation, value and risks are handled in a professional way
5. A project that meets all of the agreed upon objectives including schedule, budget, and requirements. Additionally, in order to be successful a project must satisfy the expectations of the stakeholders, sponsors, and end users. Additionally, a measure of success should be attributable to a low attrition rate of team members. The morale and long term stability of the employees and the organization itself are important.
6. Meeting scope requirements including approved changes and a satisfied stakeholder
7. A project that meets the requirements of the sponsor for safety, cost (capital and operating), schedule, compliance with specifications, and compliance with internal and external governance criteria.
8. That depends on the customer's requirements. Rarely is it on time, on budget, and meeting the scope. Those values are usually so yesterday to my stakeholders. Each stakeholder has their own definition of success or failure. Some define success as spending a million dollars on a one thousand dollar project as long as

they don't have to change any procedures. Others are not so obtuse and require and actual measurable outcome.

9. A successful project is one that satisfies contractual requirements and exceeds sponsor or stakeholder expectations
10. Completion on time, budget and to the right quality.
11. Delivering on time, and within budget.
12. Stakeholder satisfaction at final project deliverable.
13. Fulfillment of greater than 80% of the objectives stated at the project assignment document (charter), as judged by all the interested parties (stakeholders).
14. Communication plan and strategy.
15. Creating value for the end-consumer.
16. Customer happy
17. Predefined goals of the project are met.
18. Projects are considered a success if they have met the parameters outlined at the very start of Planning.

What constitutes a failed project?

1. A failure project is a project that does not achieve the goals. We can also say that is failed if it tools much more time or is it costs much more.
2. A project that does not meet the requirements it is intended to achieve within the scope, time, cost and risk parameters established for it.
3. Either scope, cost or time not met quality, reputation, value and risks not taken care of.

4. A project that fails to meet its stated objectives results in dissatisfaction of the stakeholder, sponsor, and end-users or results in an unusually high attrition rate of team members.
5. Not meeting scope requirements including approved scope changes or an unsatisfied stakeholder.
6. Poor performance in terms of safety, cost, schedule, quality, or non-compliance with prevailing laws and procedures. The wrong project delivered well is still a failed project.
7. That also depends on the stakeholder. Some define failure as having to do the project while others define it as not completing all deliverables.
8. Any project that in one or more ways does not meet the definitions above.
9. Failure of the items listed above.
10. One that is over budget and is not delivered to the end-user on time.
11. Inability to reconcile what the stakeholder wants with what can be supplied
12. Fulfillment of less than 80% of the objectives stated at the project assignment document (charter), as judged by all the interested parties (stakeholders).
13. Lack of communication.
14. Dissatisfied Stakeholders.
15. Deceived hopes, broken promises.
16. Predefined goals of the project are not met.
17. In a similar manner as stated above, a failed project is one that has not achieved the goals set in the original parameter.

Why do some projects fail while others succeed?

1. Poor Expectations management
2. There are several factors but I would say that the sponsor and management engagement are mandatory. A good project manager that have the capacity to communicate to everybody anticipating problems an always being transparent not hiding the real status of the project.
3. For a variety of reasons, including those that are within the control of the project team ("internal") and those that are beyond the control of the project team ("external").
4. Not spent enough money on project management. Problematic leadership. Missing decisions and too slow. Complexity not perceived and handled.
5. There are many reasons, as varied as there are project managers and organizations. Some projects are "designed" to fail from the start. The objectives may be ill-defined or impossible to achieve.
6. The organization may be designed to cause project failure (weak matrix for example), or the project manager may be untrained or incompetent.
7. Leadership. Every major project has the opportunity to fail and there are always good reasons for failure. Good project managers find solutions to problems that can cause failure.
8. Discipline (or lack of discipline) is at the heart of most successes or failures. Most organizations know what needs to be done, but they take shortcuts and hope the risk won't catch up to them.
9. Companies that consistently execute well have a culture of discipline that permeates everything they do.

10. Lack of risk management and lack of leadership. Risk management and leadership are the number one skills needed of a project manager.
11. Project failure is typically a result of a combination of: (1) inadequate communication; (2) insufficient planning; (3) a lack of a shared understanding of how success is defined for a specific project, (4) insufficient understanding of project team roles and responsibilities, (5) a lack of accepting personal responsibility and accountability for one's own work, and (6) insufficient understanding of or planning for risk and hazard identification, management, and response.
12. Poor management, bad communication, under-estimation.
13. Lack of project controls and, a management process to mitigate risks, changes, and owner/customer directives.
14. Some projects fail because of lack of due diligence in the business case, documentation or daily management.
15. Project assignment document with or without clear: Main objectives Additional (nice to have) objectives. Non- objectives
16. Frequent communication and the subject communicated.
17. Leadership.
18. Lack of realism.
19. Resources/staffing type and availability, experience of project manager, executive sponsorship, process, and methodology used for the project, budget allocation.

20. Lack of clear and concise project requirements, no understanding of priorities, inexperienced team members, lack of concern and dedication for achieving the best possible project

Describe as many factors as you can that contribute to project success?

1. Leadership. Anticipating problems. Focus on the Customer. Good communication. Team Spirit. Strong Project Management
2. Internal" factors such as realistic requirements; adequate and appropriate resources and support; proper planning; sound execution, monitoring and control; good communication; and, above all, good judgment. "External" factors (loosely referred to as "luck") such as an unexpectedly high level of realized positive risks, or an unexpectedly low level of realized negative risks (whether those risks had been identified or not, but especially as regards unforeseeable risks).
3. Professional project management, control of: scope, cost, time, risk, value, reputation, quality stakeholder-management clear definition of what is to be done. A defined and working business case. Complexity is handled properly. Decisions are made in time and explained. Communications follows at least RACI Methods and tools provided. Proper leadership. Working change control.
4. Well defined and documented objectives. The team has participated in defining the goals and the estimates, schedules, and distribution of work. There is a project charter, and the team agrees on the value of the objectives and the achievability of them. The project manager is trained and capable and not afraid to stand up for what is right. The project manager is able to create and nurture relationships that will help the team achieve its goals. The project manager is not

afraid to tell the truth, even when the news is bad. The project manager stands up for their team.

5. The alignment of the project management approach with the profile of the project
6. Realistic expectations - not just telling people what they want to hear Commitment to attracting, developing and retaining talent Ability to get input from the supply chain during pre-tender phase. Alignment of interests between stakeholders. Clear and consistent communication and reporting. Continuous learning and process improvement. Environment that rewards exposing truth while maintaining accountability. Investment in tools and equipment.
7. Risk management leadership motivation negotiation skills all the rest are simply fluff.
8. (1) shared understanding of how success is defined, (2) an over-abundance of communication between project team members and stakeholders, (3) crystal clear understanding of roles and responsibilities, (4) understanding that change is inevitable and following rigorous change management processes, (5) clear understanding of stakeholders expectations, (6) well-developed understanding of risk identification, management, and response(s).
9. Good management, cooperation, good people stakeholder and contractor. Good program management- critical path analysis.
10. A schedule that accounts for every little detail, a strong Project Manager with a good project team, a solid contractor with good logistical support and key skilled personnel.

11. Clear and concise communication. clear roles and responsibility - accountability processes and standardized systems for documentations Continuous monitoring and progress reporting.
12. Use of a comprehensive methodology and standards Perception of a project as a temporary social system. Project Organization with strong. Sponsor team and Project team. Comprehensive project assignment document. Comprehensive project handbook completed by the PM, the project team members and relevant stakeholders (approved by the sponsor).
13. Communication and relevant support from the management. Procurement strategy. Scope Management documentation of project issues. Prompt response to project issues.
14. Servant Leadership overlaps other commonly stated factors such as communication, top management support etc.
15. Sponsorship, enough money, appropriate experts, and a framework (above the scope, you need firm demarcs).
16. Resources/staffing type and availability, experience of project manager, executive sponsorship, process and methodology used for the project budget allocation.
17. An informed user that understand their needs and requirements, an experienced PM and consultant team that integrates the design and construction members from the initial project concept and finally, setting the parameter priorities of quality, cost and schedule. These three parameters are used in determining if a project is a success or failure. A good team concept that plays on the strengths of its team members.

Describe as many factors as you can that contribute to project failure?

1. Bad communication. Technical focus project management. Project management focus on the tasks not on the result of the project. Team limitations. Lack engagement of Management.
2. The reverse of #4, above.
3. Problematic Stakeholders. No clear definition of what is to be done. No working business case. Complexity. Decisions are late or not explained. Communication problems. Unforeseen changes. Not enough resources or money. Missing know-how.
4. The team does not believe the project goals are attainable or the team does not agree that the goals are worth achieving. The project manager is not capable of establishing relationships and works poorly with soft skills. The project manager is not diligent about using tools such as earned value to track and report progress. The project manager does not practice risk management, so that when things go wrong, the project halts while reactionary methods are implemented. The project manager is incapable of preventing scope creep.
5. Lack of understanding of the project at the beginning that results in poor planning. The cause of project failure is correlated with the complexity level of the project. Simple projects lack appropriate resources. Complexity project lack leadership.
6. Unclear expectations/requirements. Lack of planning. Lack of input from the supply chain pretender stage. Rushing to start buying equipment or start activity on site. Under resourcing the PMO, both in terms of numbers and experience.

Staff turnover. Poor project administration practices (an email is not a Transmittal). Lack of clear communication.

7. Lack of risk management, lack of end user involvement, lack of ability to lead a project, inability to motive team member's, inability to obtain requirements.
8. Refer to 3. and 4., above
9. Poor stakeholder specification, bad management, egotism, lack of planning, and project control
10. A bad schedule, a weak Project Manager with a poor project team, and a poor contractor with little to no logistical support, and few skilled personnel.
11. Inept senior stakeholders, who don't realize the front-end planning matters most. Temptation to start too early or too quickly without understanding the impact of early decision making.
12. Lack of the above in 4.
13. Lack of communication scope of work not defined prompt decision not made timeously.
14. Lack of vision and leadership by the Project Manager and project team
15. Change of strategy (corporate, IT, finance), external factors, resource turn-over, all what is breaking the ecosystem required for a project.
16. Resources and staffing type and availability, experience of project manager, executive sponsorship, process and methodology used for the project, and budget allocation
17. Lack of clear understanding of project statement of work, an unrealistic expectation of cost, and schedule, lack of prioritizing the three project parameters

of quality, cost and schedule. The general lack of concern on the part of team members for spending the time and energy required to produce the best possible project. Lack of team chemistry and conflict.

Describe what can be done to increase the likelihood of project success?

1. Focus adequate resources on the "internal" factors that contribute to project success, such as those noted in #4, above, and manage "external" factors by thoroughly identifying, analyzing and managing risks and establishing adequate reserves.
2. Professional Project management, control of: scope, cost, time, risk, value, reputation, quality stakeholder-management communications follows at least RACI proper leadership.
3. Training project managers to be adept in the use of the available tools to plan, predict, and control project progress. Strong use of soft skills is required. A high degree of ethical practice is necessary. The project manager needs to tell the truth, even in the face of losing a job.
4. As a profession we need to develop better tools for understanding our projects, especially at the beginning. Project scopes and charts are good tools for gathering known data, we do not have tools for understand more complex issues; cultural, technological, legal, alignment of goals etc.
5. More time for detailed planning. Someone needs to get into the weeds. Set clear deliverables for each gate and make sure the project can't pass a gate until those deliverables have been completed and accepted. Clear roles and responsibilities.

Empower people to make decisions in a controlled environment. Schedule time for skills development and training.

6. Learn how to lead a project and manage risks. If you cannot do this, all the rest is useless.
7. Develop project management plans that define and document implementation and continuous improvement of the actions and items presented in 3 and 4 above.
8. Encourage cooperation between stakeholder and contractors, clear instruction from stakeholder, good design.
9. A strong Project Management team, a process for project controls, a process to mitigate, and manage risks, changes, and owner and user directives.
10. Engage a Professional Project Manager who is not emotionally involved with the project. Delegate and check regularly the progress and performance is in line with expectations.
11. See 4.
12. Regular update, attending to project issues timeously, clearly defined scope of work, clear understanding of project deliverables.
13. Hire stewards rather than agents.
14. Apply a "systemic approach" check regularly, and adapt to the evolving environment. Cut the project into phases. Report against short timelines. Have everybody busy. Have everybody motivated.
15. Dedicating appropriate attention to all of the key factors mentioned previously.
16. Make sure there is a clear understanding of the project SOW with the expectations of quality, schedule and cost prioritized. With this should be a reasonable

expectation for the costs and schedule required to meet the expectations. Individuals need to leave their egos and the front door. We all have our strengths that need to be recognized and used to the advantage of the project

Describe what can be done to decrease the likelihood of project failure?

1. Same as #6, above.
2. Not ignoring stakeholders. Following the given requirements. Change an unrealistic business case. Do not ignore complexity. Decide in time. Accept and handle unforeseen changes.
3. Ensuring that the requirements and objectives are well understood by all stakeholders and the method of control is agreed upon by all stakeholders. The project manager needs to be in control of the project and not subject to requirements changes outside of a change control system which takes into account the impact of all changes upon the project constraints.
4. Develop better tools for profiling or understanding projects (such as the navigating project complexity developed by PMI). On more complex project invest more time and resources in aligning project stakeholders.
5. Mostly the same as above. Be willing to kill a project at any stage if it no longer makes sense.
6. Learn how to lead a project and manage risks.
7. Clearly defined roles and responsibilities for project team members, shared understanding of how success is defined and "what good looks like," over communication, and stakeholder and risk management processes that are rigorously followed.

8. All the above in.
9. Implement project controls up-front to monitor the project schedule and track milestones.
10. See 4.
11. Clear scope of works Communication plan in place improved reporting mechanisms conducive to procurement policy.
12. Consider everyone's opinion.
13. Be clear about the success criteria and the expected deliverables, and set up some corresponding risks and contingency plans, including the external factors.
14. Provide the above mentioned items

What project management tools, methodologies, or processes are helpful for attaining project success and why?

1. I think that project management tools or methodologies are mandatory but not enough for a successful project. We must analyze the project and to know which methodology and tools should be applied. Choosing a methodology or a mix of methodologies, choosing which tools more or less collaborative can help a lot to achieve a successful project.
2. PMI's methodology is the only formalized project management process I have studied, but my sense is that any process that emphasizes the factors noted in #4, above, would be helpful.
3. Using the PMI, IPMA, or Prince2 methodology, because they provide a framework which prevents most of the erroneous behavior IT tools like Primavera or MS Project for getting the Scope, Cost, and Time Management

4. Earned value, agile methodologies such as scrum and the effective application of soft skills. Earned value should be used to know what needs to be managed. Every project manager should know the status of their project at any given time in terms of schedule and budget. Agile methods increase communication and accountability, and soft skills are necessary to communicate to all stakeholders the right information at the right time and to motivate the team.
5. All project management tools, methods and process are critical to project success at some time. Which tools etc. depends of the project profile.
6. The ideal tools, methodologies and processes vary by project size, type, complexity, geography, procurement model, and a number of other factors.
7. In my 30 plus years of experience, I have learned that leadership, risk management, and customer involvement are the three keys to success, not the old fashion iron triangle of project management.
8. Project management tools and techniques are found in abundance, what is missing is project managers and sponsors/stakeholders not systematically using the tools because "there isn't enough time or budget" because they scoped the project to meet "ideal" circumstances and did not real-world conditions that are anything but ideal.
9. Lean construction, Six Sigma quality control, Critical Path Methods of planning
10. Schedule, budget, and staffing. It is hard to manage a project without a schedule. Having sufficient funds at the beginning of a project allows you to move forward and maintain the proper sequence of events. Have a project team that is competent and understands project management best practices PMI/PMP.

11. Combined use of PMBoK and Prince 2 with a FIDIC based contract. They are commonly recognized and understood, easy to find material for and educate with.
12. IPMA's ICB, Delta and Project Excellence model including PMI's PMBOK. GPM's PRiSM model for Sustainability in projects.
13. Planning WBS.
14. I put less emphasis on using tools/techniques for project success.
15. There's no method for success - the weight of the sponsor and the trick of the project leader are the best chances for success. Besides, a project is a human concept, and as such it is alive. Any method is good at the condition one's appropriates it and models it against the project. I'd say the only method is holistic.
16. This depends heavily on the nature of the project and resources.
17. Having the experience of the design and construction process and the ability to coordinate these disciplines while working as the end users representative

What project management tools, methodologies, or processes are not helpful for attaining project success and why?

1. Anything that purports to take the place of thorough planning and management.
2. All tools and methods may be helpful, depending on the situation they reflect
3. The Gantt chart is a wonderful tool but should not be used in place of a WBS, especially during the planning phases. A list style WBS accompanied by a waterfall schedule is a recipe for disaster, and the chance for failure is increased dramatically when these artifacts are handed to the team instead of being developed together with the team.

4. All project tools etc., cannot be helpful at any given time. Depends on the project profile.
5. People who believe they can run a project because they are a particular designation (PMP comes to mind).
6. MS Projects! This is one step from totally useless as a project management tool. It offers nothing but an allusion towards project success.
7. Tools, methodologies, processes, or techniques are not responsible for project success/failure. Rather, poor planning, execution, monitoring and control of projects by the project or program manager is generally the root cause of project failures, tools, etc. may be symptoms, but they are not the root cause
8. None. The use of any project management tool, methodology, or process is better than not using one at all.
9. In my field of construction management the stakeholders will sometime try to implement agile or lean management systems. They believe that it is faster but it really is not a good fit for a complex, long term project system.
10. Sophisticated IT tools for scheduling etc. Project = People.
11. None
12. I put less emphasis on using tools/techniques for project success.
13. I didn't met methods bringing prejudice to a project.
14. Cookbooks on PM. Typically these are written by individuals with no hard experience.

Do you manage project differently today than you have in the past. Describe how your approach is different today than in the past.

1. Yes things changed, today is very important to work more in an agile way. Things change in a faster way. We can't take long time to specify the requirements. We must be agile mainly in development.
2. Yes. Much more of an emphasis on thorough planning, and especially on risk identification, analysis and management.
3. Yes, my approach today is a lot more method driven than in the past. I take care about people more than in the past. I'm using a lot more technology now - i.e. Wiki platforms, Ticket Systems and so on.
4. No. I have always had a high degree of success using the approach that I have described here. A healthy use of hard skills to know what to manage coupled with people skills that define how to manage.
5. Yes. I am more focused on understanding my project at the beginning before investing lots of resources in planning, although this is part of planning. I focus more on relationships and change management. Of course I am managing more complex project now than in the past.
6. Yes, in the following ways: 1. I'm more practical than I used to be. There is more than one right way to get something done. 2. I'm much quicker to tell it like it is because beating around the bush doesn't help anyone. 3. I am more tolerant of mistakes and even failures, as long as they're not systemic. A project team member that has never been humbled by a mistake can be dangerously over confident.
7. No. Projects today are totally the same as projects in the past. Only the drivers of the project differ Sixty-years ago most projects were driven by the Cold War and

a drive for prosperity. Today it is a drive for consumerism and quick returns. But, projects are the same. If you do a little homework, you would realize they cannot change.

8. Very much different now that 20 years ago. Specifically, much greater communication between with team members and stakeholders, greater effort to understand how stakeholders, sponsors, client, etc., define success and communicate that to the team, incorporate risk identification, management, and response planning during project scoping, and taking the effort to clearly define and document roles and responsibilities for all project team members that includes their active participation in the process
9. Yes. There are new project schedule software tools that are more user friendly such as MS Project verses Primavera software.
10. Yes we work in a more global environment and now are more virtually oriented. The methodology is the same but communications have changed for the better.
11. Applying also the above PRiSM model.
12. Yes, more communication clear project charter.
13. Yes. Initially I used to focus more on science of PM, but now, I'm using more of art of PM.
14. Yes, of course, the experience is allowing me to economize energy and focus more rapidly on the essential success criteria, and what the sponsor or customer wants to see.

15. Yes. As I accrued more experience managing various types of projects, I have learned to spend more time deciding on tools and methodology prior to launch of a new project.
16. The primary difference with my management today as opposed to years past is I no longer control the entire process. The federal government has introduced a 4th party in the mix other than owner, architect, and contractor. I cannot have the direct contact with the design and construction team as in the past.

What advice or guidance would you give a person newly assigned to the role of project manager regarding project success or failure?

1. The best advice is to be able to communicate with everybody involved in a project and being able to anticipate problems.
2. Ensure that the project sponsor is committed to sound project management practices, and try to compensate for your inexperience by finding an experienced project manager to act as an advisor/mentor and by seeking more experienced project team members.
3. Make your PMP or similar 2). Look for a coach 3). Look for "lessons learned." 4) Identify all your stakeholders 5). Know your sponsor 6). Be realistic about what you are able to achieve 7). Work, Work, Work (!)
4. Start and end your meetings on time. Do not start a meeting if the attendees are unprepared. By doing this you will establish your authority and earn the respect of your team, who will appreciate the fact that you value their time. Get to know your people and let them make as many decisions as possible. Push decision-making downward to your team. This empowers the team. Make sure you

understand the entire process, from project initiation to closure and know who is involved in each step and establish relationships with all of those people. Make sure that the project objectives are documented and understood by the team, and ensure that the team appreciates the value of success of your mission. And if you really want to distinguish yourself as a project manager, make sure you manage the risk!

5. Understand your stakeholder. Understand your project, look deeper. Manage change intentionally.
6. Get the help you need. Don't hesitate for a second if you feel you're getting in over your head. Support your team and make sure they support each other. It's fine to have open debates, but be very clear about what kind of behavior is OK and what isn't. Be decisive. The only truly wrong decision is the one you've avoided making.
7. Learn the tools that work. Disregard the tools that don't. Learn how to manage people. Respect risks. Risks are the key to project management.
8. Understanding that project management is a skill, craft, and art form that cannot just be assigned by management. Project management skills take years to develop. Being assigned as a project manager by management is no more meaningful than being assigned as a "leader" and more specifically, a leader can be a position on an organization chart, but leadership is a role that can't be assigned and can take place at any/all levels of an organization.
9. Make sure you have a project schedule and that it is update frequently to track milestones, long lead items, and the critical path.

10. Work closely with the stakeholder to establish what they are really looking for...unfortunately the touch and feel of their vision is not normally presented in a Project Mandate/initiation document. You have to read between the lines.
11. Improve the behavioral competences; ask for a project mentor or coach.
12. Communication.
13. Be a transformational leader.
14. Be strict with the success criteria definition, and the identification of risks. And have the sponsor and the customer validating them along the project (not all of them are visible upstream). If the project ever failed then you may refer to these documents. At least that would free your consciousness from a burden, and keep you clear for your next project.
15. Involve stakeholders/sponsors early. Conduct a thorough stakeholder analysis
16. Treat every project as if you are planning to design and build your home. You have to understand what your needs are, what you can afford and how long it will take to build

Do you think there is a relationship between experience, qualifications, certification, and project success or failure? Please explain your response.

1. Not necessarily. Certifications are not a guarantee of project success
2. Experience and qualifications are very important too.
3. Yes, in that experience, qualifications and certifications should generally correlate with an increased likelihood of project success. Also important is good judgment, which usually but not always accompanies experience, qualifications and certifications, and the personal integrity not to be pressured into taking on projects

for which there is an inadequate commitment to proper planning or to providing adequate resources.

4. Sure. Only people who are interested in PM will be qualified or will get a certification. Experience will enable the connection between "real life" and the abstract process of a methodology. The more the person has done the more the probability of success will rise.
5. I believe the certifications are losing value as proof that a project manager can perform. Many people are getting certified and stating openly that they disagree with the methodologies prescribed within the certification. Experience is a much more valid indicator of performance than a certification or qualifications.
6. Yes. You need the match the knowledge, skills, and abilities needed to lead the project with the leadership skills of the project manager and leadership team.
7. In general, yes, but there's not a direct correlation. I've seen PMs with many years of experience but they haven't learned anything in the last 10 years. I've also worked with more than one young PM that had a natural ability to lead people and projects.
8. No. Experience. You can be good at doing the wrong thing. No. Qualifications. There are none that truly provide an indication of your abilities. No. Certifications. In my 30 years of project management, I have yet to see a certification that truly indicates one's ability to lead a project.
9. Yes, a very clear, direct, and ignored relationship. As the statistics presented in the introduction to your research indicate, successful projects appear to be in the minority because we do not truly have "lessons learned" from our failures (or we

would not keep repeating the same failures). What we actually have is "lessons ignored" because the root cause of most project failures are related to individual and groups not planning, executing, or taking ownership and expecting others to make up for their deficiencies.

10. Yes. There is no substitute for on-the-job experience. Formal training and certifications are always a plus however, it's been my experience that there is no substitute for actual on-the job experience.
11. There is a relationship but it is not a guarantee or that clear cut. Experienced PMs will have learned about many project situations before and should be able to apply their knowledge to fit a new challenge. Qualified PMs have a theory base which prepares them but the execution and adaptability of the PM will determine success or failure.
12. Yes, projects have to be assigned at PM's by rating complexity vs experience, etc.
13. Yes. Lessons learnt from previous project.
14. No. It really depends upon the person's attitude that how she or he looks at the project.
15. Not sure. Qualifications as methods can be of grand utility to structure a project, but are not a guarantee of success. Experience should bring more guarantee, for you may choose the right method to address problems projects.
16. All of these factors play a role in the probability of success for a project. Qualifications and experience for a PM are critical factors that can determine the outcome.

17. Most definitely. Experience is the most fundamental requirement of anything. Certifications are fine but, sometimes they don't reflect the experience necessary to carry out a project. Another important factor is "personality." You may have more experience and knowledge than someone but, if people can't work with you, it kills the team and the project.

Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

1. Communications formal and informal are mandatory for the success of a project.
2. No.
3. There are two areas which are left out completely: transparency, changing trust, confidence, motivation, and complexity.
4. I think the biggest difference between project success and failure is the ability of the PM to be honest and ethical. We are constantly faced with the possibility of losing a job by being honest with people. We may recognize that a project is headed for disaster and try to fix it or hide it because by telling the truth we are hurting ourselves. Also, many PM's have told me they cannot control their project because management is not cooperative. For example, if managers constantly come to meetings late or unprepared, you can't cancel the meeting or admonish them, and yet it sets the tone for the entire meeting, and in some cases, establishes the project manager as having no control or authority. Also, project managers are going through boot camps to pass the test but are unable or unwilling to apply the methods they have studied. "We don't do it that way here" should not be an acceptable statement from a certified project manager. We

should be saying “We need to do it that way here...because it’s a better way.” And if it isn’t a better way, then we should be working to change the material to what does work.

5. Most of the project research into project success and failure is highly flawed. The most serious flaw is the definition of project success. The Chaos Report is the most seriously flawed of all research and no sounds researcher should reference this study.
6. I think I’ve covered the basics. It’s a complex topic.
7. This question does not function properly. Second these areas are not relevant to project success or failure.
8. We were asked to discuss ordeal with the obvious elements of project success, e.g., budget and time line. There are some other less obvious factors such as quality and team satisfaction. 1. Have satisfied stakeholders. 2. Meet the project’s objectives/requirements. 3. Meet an agreed budget. 4. Deliver on time. 5. Add value 6. Meet quality requirements. 7. Sense of professional satisfaction for the team.
9. None
10. We miss EQ and SQ while discussing project success and failure. If we can inculcate EQ and SQ, apart from IQ, then it may increase the likelihood of success.
11. It just takes time, effort, and a desire to provide the best possible project based on the prioritized parameters of quality, cost and schedule.

Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

1. No.
2. Q13 is ambiguous, all the statements will have an impact on either success or failure the Q as written will tell you nothing. The radio buttons don't work properly either.
3. Communication formal and informal are mandatory for the success of a project
4. No.
5. There are two areas which are left out completely: Transparency, changing trust, confidence, motivation - Complexity, working against Transparency
6. I think the biggest difference between project success and failure is the ability of the PM to be honest and ethical. We are constantly faced with the possibility of losing a job by being honest with people. We may recognize that a project is headed for disaster and try to fix it or hide it because by telling the truth we are hurting ourselves. Also, many PM's have told me they cannot control their project because management is not cooperative. For example, if managers constantly come to meetings late or unprepared, you can't cancel the meeting or admonish them, and yet it sets the tone for the entire meeting, and in some cases, establishes the project manager as having no control or authority. Also, project managers are going through boot camps to pass the test but are unable or unwilling to apply the methods they have studied. "We don't do it that way here" should not be an acceptable statement from a certified project manager. We should be saying "We need to do it that way here. Because it's a better way".

And if it isn't a better way, then we should be working to change the material to what does work.

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10. We were asked to discuss/deal with the obvious elements of project success, e.g., budget and time line. There are some other less obvious factors such as quality and team satisfaction.
    1. Have satisfied stakeholders
    2. Meet the project's objectives/requirements
    3. Meet an agreed budget
    4. Deliver on time
    5. Add value
    6. Meet quality requirements
    7. Sense of professional satisfaction for the team
11. None
12. We miss EQ and SQ while discussing project success and failure. f we can inculcate EQ and SQ apart from IQ, then it may increase the likelihood of success.

13. It just takes time, effort and a desire to provide the best possible project based on the prioritized parameters of quality, cost and schedule

Do you have any other comments, questions, or concerns?

1. I was in doubt only in question 13, because when I marked two statements with the same degree of importance, the check-mark switched, allowing only one to be marked. I suggest the indication of whether there should be only one statement for each degree of importance, or perhaps review the form.
2. I would be interested in seeing the results of your work
3. Good luck with your dissertation, Ray!
4. Q 13 is problematic to answer
5. Thank you for the opportunity to participate. I would like to read your dissertation when it's published, as this topic is of great interest to me. Best wishes in your pursuit of your doctoral degree!
6. If I were doing this study, I would consider rewriting the questions on this survey. I find an imbedded bias in the questions. It is as if you have already determined an outcome and you are only looking for support to affirm that outcome. I am not sure that is how a study should be done.
7. No
8. Would like to get the publication
9. Stress more on Leadership and talk more about project leader rather than project manager.
10. Not at this stage
11. No

One-on-one (Phase Three) Interview Questions

The one-on-one interview questionnaire results in this section are organized by the questions in the survey.

What constitutes a successful project?

1. Schedule delays that are not caused by the management team. Cost impacts that were beyond the management team's responsibility. Meaning, if the stakeholder chooses to delay the project and issue changes orders - as long as those were managed properly the project can still be considered successful. The stakeholder's satisfaction would be the determining factor of a successful project. Repeat business from a satisfied stakeholder would constitute a successful project.
2. A project that accomplished the strategic goals, within budget, resources and time restrictions, fulfilling all quality requirements, and eventually making all stakeholders happy.
3. Boring with, limited changes closed, completed at 1% cost threshold, cash flow healthy and completed per the approved schedule.
4. Excellent planning Involvement of all necessary parties at the right point of time learning from earlier projects and passing on knowledge gained
5. Finishing on time and budget. Plus stakeholders' satisfaction and achieving the strategic objective of the project.
6. For a supplier - customer satisfaction with a profitable return from a stakeholder side - Fit for purpose result within budget delivered on time.
7. Benefits delivered to organization in excess of costs of project.
8. High Quality, All requirements, On time, On budget

9. Delivery of priority requirements with clear communication on necessary changes to cost and schedule to meet prioritized scope.
10. A project that is finally owned by all leading parties to achieve sustainability for the future.
11. Accomplished in its time with the required quality and cost
12. Meets or exceeds value expected from original investment by the sponsor/stakeholders
13. Whether it meets the customer's needs, with consideration for stake holders, profits, Triple constraint add risk to this.
14. Aligned with strategy, meets business needs, and satisfied stakeholders

What constitutes a failed project?

1. An unsatisfied client and stakeholders. A client's request that anyone from the management team be replaced as a result of a perceived failure of the management team to deliver.
2. A project that may have been accomplished, or not, regarding all non-human factors, but which made an unintended impression on a key stakeholder, causing any degree of disappointment or rejection.
3. behind all approved schedules, numerous open items at beneficial occupancy, no risk assessment validated at 75% completion
4. Unforeseen events Too ambitious targets Lack of communication/communication planning
5. Opposite to first question's answer.

6. Project that does not meet expectations - i.e. it does not deliver the results expected or is delivered with unreasonable cost overrun or is not delivered within the agreed schedule.
7. Those which do not deliver the anticipated or emergent benefits
8. Any misses of the above
9. A project with no defined product or definition of complete that is allowed to continue to draw talent and funding from other efforts.
10. Where there is no commitment to ensuring that the basic principles are kept in the forefront during the project, this means strong leadership during the project length and commitment by key stakeholders. If this is missing the project may fail, be achieved but not fulfilling the initial requirement or will not be sustainable in the longer term.
11. Not accomplished, or accomplished with no proper documentation
12. Fails to meet the value it was expected to deliver by the sponsor/stakeholders
13. A project that doesn't meet the customers' needs, not completed on time and budget, or may be stop during the planned project but justifiable for future projects for a given company, normal PMP and Six Sigma methods.
14. Fails to meet business needs

Why do some projects fail while others succeed?

1. An unsatisfied client and stakeholders. A client's request that anyone from the management team be replaced as a result of a perceived failure of the management team to deliver.

2. Because the Communication process was not managed accordingly, given the relevant circumstances and stakeholders involved.
3. leadership and management, meaning that the project's destiny is neutral - the project wants to succeed - however with people not having the leadership experience or management ability to continually be closing a project.
4. In my opinion mostly because of certain parties that are not motivated and denying resources.
5. Using old methods and refusal to change, lack of experience, external business environment (Unknown unknowns), and corruption, Ad hoc and unsystematic project management methods, no lessons learned collected or documented.
6. Organizational culture is a major factor. Strengths of the PM. Preparation and planning.
7. Lack of understanding of project purpose, too much emphasis on cost and time constraints, focus on delivery of an output not the benefits
8. Communication
9. Expectations, requirements, assumptions, risk, communications. If the business owner, the technical team, and the PM are not all in agreement, the project will fail.
10. There is often not a clear picture of what and why the work is required. Often the board levels are not fully committed or understand the wider strategic picture/direction. Good communication is essential for all projects tailored to its complexity to get buy in, confusion and distrust leads to failure. Project leaders

need the right skills to manage projects but they also need high level support and this support should be visible within the organization/s.

11. Due to failure of risk expectations and low management skills
12. mostly because of poor project management or project portfolio management - either the wrong project to start off with or else resources not applied successfully
13. Tends to be the project manager does more work as a coordinator with little input. Also, wide variation of terminology. PMI is not the only player. Agile for software, Prince 2 for construction, scope creep
14. 1. Mismanagement of constraints
    2. Failure to make needed staff/talent available
    3. Not-yet competent project managers and teams

Describe as many factors as you can that contribute to project success?

1. A good combination of team members that can freely communicate amongst them without fear of being judged. A strong organizational support from leadership. Technical skills of each team member. Developing processes and standards up front. Maintaining sight of the scope of work and schedule. Strong work ethics.
2. Clear definition of strategic goals; - Strategic and Operational alignment via effective Communication; - Decision-making in a timely fashion, followed up by adequate implementation.
3. Realistic schedules, limited changes, active RFI response, scope of work knowledge, provoking discussions about cost, schedule and quality on an ongoing basis. Proactive attitude throughout project team.

4. Planning Cost efficiency Team selection Project scope definition Buffers Communication
5. Good communication plan, continuous monitoring and control, phase gate reviews, change management, stakeholders management, comprehensive risk management plan, stay up-to-date with external business environment's news.
6. Identifying, understanding and validating expectations. Planning delivery. Evaluating Risks and Opportunities. Setting objectives. Evaluating progress - delivery vs plan, costs, quality, etc. Communicating and reporting results, achievements, delays and potential issues. Reassessing risks and planning recoveries. Checking reports.
7. Clarity of purpose, why are we executing the project, ownership by business change manager and/or project director
8. Communication, Stakeholder buying, solid requirements, no scope creep
9. Ownership, participation, trust, honesty, communication, transparency, process
10. Clear vision, good project plans with clear timescales, flexibility to adapt to new info and change critical paths to achieve, on long complex projects the ability to lead the project team and the organization through changes and new info/requirements to achieve the vision, honesty about barriers that may hinder development, good strategist risk management documents that are owned by the organization, fit for purpose communication plans, regular updates to board level, stakeholder engagement, good financial management of the project and engagement with other departments where funding may have an impact, media

management, ability to respond quickly to external queries/concerns, damage limitation strategies for different stages of a project linked to the risk strategy.

11. Stick to the Schedule of the project, coordination with different contractors or key players of the project. Excellent management of Cash flow.
12. Communication, stakeholder management, risk management, planning, accountability, application of appropriate and practical methodology, portfolio management (resource allocation), organizational project management competency, clear objectives and/or strong change management capabilities (agility), clear and cohesive strategy for the organization and stakeholders, managing complexity, strong team work
13. Meets Black Belt Sigma Six customer accepts deliverable s that are good. On time, and within budget. No unknown unknowns took place, this is not something unknown to the person but true unknown unknowns Stakeholders are satisfied.
14. 1. Competent and performing project managers
    2. Executives and managers who manage the project climate appropriately (different than process work)
    3. Engaged stakeholders and team members

Describe as many factors as you can that contribute to project failure?

1. Bad team dynamics. Poor communications. Poor organization. Lack of technical skills. Personalities that clash. Constant changes by the stakeholder and leadership. Absence of standards and processes to perform.

2. Divergent expectations, which may render conflicting sometimes; - Flawed Communication process, causing general confusion and subsequent misuse of resources; - Unnecessary bureaucracy, which impairs decision-making.
3. Schedules not updated, change orders not negotiated, unclear scope on change orders, limited project meeting discussions, limited management site visits.
4. Lack of #4
5. Similar to Q3 and opposite to Q4
6. No clear sponsor. Failure to assign clear responsibility and adequate authority. Unclear or invalidated goals. Failed planning (scope, delivery, costs, resources, procurement, quality, risk, communications and reporting. Failure to monitor the planned focus areas. Failure to continually re-assess forward delivery and risks. Failure to regularly report progress. Poor documentation.
7. In attentional blindness, inaccurate business case, too much focus on the output and constraints, wilfully recording inaccurate figures in business case, not engaging stakeholders, too much emphasis on training project staff in technical skills
8. Communication, Unreasonable expectations, unreasonable timeline, budget, etc.
9. infighting, unspoken expectations, poor analysis, unclear statement of need, muddy priorities, lack of full participation, blaming
10. Lack of PM skills in relation to the complexity of the project, not enough funding in place to manage a project lifetime, lack of commitment by other departments/organizations, staff disinterest/wanting the project to fail, no real understanding of what the project outcomes are, projects that change direction are

weak, projects that never conclude and are allowed to carry on, projects that are fanciful and are an individual's whim rather than part of the organization strategic direction, finance, poor management support to project staff, poor organizational business planning, projects that are not a business priority.

11. Inverse of the previous question
12. poor communication, low organizational project management maturity/competency, corruption, complexity, lack of clear organizational or stakeholder strategy for project selection and funding, absence of factors above under 4
13. Not on time, rework, unidentified risks took place, inadequate funding, too much control from top management that wants to dictate the work without SME knowledge.
14. 1. Artificial constraints imposed, including deadlines and limited budgets
    2. Management malpractice
    3. Poor early engagement and needed early results

Describe what can be done to increase the likelihood of project success?

1. Team building meetings. Technical skills training relevant to the job. Mentoring project managers by other successful PM's. Development of a solid WBS up front. Development of a good schedule that follows the WBS. Development of standards and processes for the management of the project.
2. Dedicate the proper planning time to assess and establish an effective communication plan, aligning the strategic goals and their adequate implementation, thus validating all relevant and impacting decisions made.

3. Real milestone belief with project team, ongoing management site visits, proactive atmosphere and project health chart.
4. Usage of a well selected and grown team composition Communication
5. Sell benefits of PM process to Senior Management (Sponsors) to actively charter the project with an understanding of consequences of failure and risks of not committing to regular reviewing progress. Engage Senior Managers/Sponsor to participate in progress reviews.
6. Change the focus from training to understanding, focus on delivering benefits not outputs, having a role which takes ownership of project from idea to realization of benefits, reducing the reliance and importance of the project manager
7. Solid buy in up from stakeholder, reviewed and signed off requirements, solid change(s) plan
8. Set clear expectations on the process and the end result, define team roles and responsibilities, follow your process
9. Clear vision and project outcomes, good leadership at all levels committed to the project, projects are aliened to business priorities, project managers have the skills and experience to manage individual projects, good governance management of the project linked to the business and financial plans of the organization, regular updates with appropriate high level info including risks to the board level,
10. Coordination between financial and technical departments.
11. Build organizational project and portfolio management competency and strategic performance management capability

12. Much more up front planning, Also, the project manager would do best if he knows the subject matter worked on. For example I am an MCSE for 20 years, and programmer, and network/security person, so this helps. Way too many methodologies people use or companies use.
13. Increase items in 4 and eliminate those in 5

Describe what can be done to decrease the likelihood of project failure?

1. Regular meetings to discuss risks, concerns, issues. Identify where some personnel issues may benefit from a change.
2. Monitor work package deliveries properly, assuring all required documentation records are made and all established deliverables are formally noticeable to the relevant stakeholders, thus keeping a recognizable track of project accomplishment.
3. mentoring, peer to peer reviews, internal side discussions with other team members outside of project
4. Decrease the project size and complexity where necessary Spend more time on realistic planning Seek outside knowledge on similar projects before you start or when you are facing problems
5. Plan and review and communicate.
6. Change the focus from training to understanding, focus on delivering benefits not outputs, having a role which takes ownership of project from idea to realization of benefits, reducing the reliance and importance of the project manager
7. Good upfront planning and documentation

8. Learn to recognize a failing project and take remedial action. Don't be afraid to pull the plug even if money has already been spent.
9. Clear commitment to selected projects by the organization, funding allocation to support project work separate to general work, select PMs with the right skills and experience to manage each project, regular support for PMs, support where strategic difficulties arise, the development and sign off of project plans by the board, regular updates to the board, early identification of issues and risks, good communication throughout the project at all levels to increase buy in.
10. Inverse of the previous question.
11. good governance and transparency, better communication, active support of increasing project and portfolio management competencies, strong stakeholder management, risk management
12. More true standardization above the PMI level, standards internationally recognized need focus. Less time in meetings, and having the project manager as needed, but not for daily meetings. Better understanding by all what is the goal. And adequate funding from sponsor. Many projects are taken on that don't need to be. I even one time at Dell did a black belt level project in my spare time by myself, by the time I gave it to the portfolio manager it was multimillion going forward with cost to do project zero.
13. In addition to 6, train all stakeholders, including execs and managers, in delivering their project and program roles competently.

What project management tools, methodologies, or processes are helpful for attaining project success and why?

1. Teaching PM's on how to apply the WBS development on a real project. Providing training for all aspects of project management to everyone on the team. Encourage more training on EVM and why it is useful as a tool for management of schedule, cost and scope.
2. The Communication plan, including full disclosure of strategic goals for the project, detailed assignment of roles and responsibilities for the project team, as well as the identification of all relevant stakeholders and the respective policy to approach them. Executing such plan is the challenge, since different teams do not interact on a daily basis.
3. More leadership review vs project management tool type discussions - meaning someone can know the program but not the process. So a real in the weeds "hands on" discussion is always prior to reviewing project output status items.
4. Work packages Communication plans (Environmental analysis),
5. A project charter and a project plan. The charter engages the sponsor; the plan provides a documented direction and disseminates that plan so that there are clear expectations. PMBOK works well for the Engineering Style projects I have been involved with.
6. None, understanding is critical with a mastery of the soft and hard skills. The ability to be a learner is crucial. Too much reliance on a prescriptive process often leads to failure.
7. Solid schedule, to inform all stakeholder of timeline and expectations

8. I've been able to use most of the varied tools I have been provided in my career to the benefit of my projects. A good process, clear communications, and a supportive PMO all feed into project success.
9. There are a variety of tools and qualifications, these give project staff confidence to undertake projects, in general good project management is gained by; organizational support from the top for selected projects, solid project planning with clear timescales, risks and critical paths clearly identified throughout the project, good financial management running alongside along with HR and other identified key departments. Good communication is essential including key stakeholder engagement. A successful project is one that is transparent, clearly understood at all levels of the organization, fits with the key business and priorities of the organization and has a defined start and finish. Many business qualifications have PM as a key component, MBA DMS, marketing courses, PRINCE 1&2 etc.
10. Using appropriate software for scheduling and task management
11. Any tools that help build and refine organizational project management competency, including portfolio management and strategic performance management, risk management and change management
12. PMP, Six Sigma, subject matter knowledge, combining only processes needed with what the company currently uses.
13. Those selected and tuned for the organization's culture, industry, and strategies; reinforced with coaching and rewards for use.

What project management tools, methodologies, or processes are not helpful for attaining project success and why?

1. Learning all of PMI's processes is not an indication for future success. Less theory and more application of theory on practical situations in life.
2. All unnecessary bureaucracy for the project, considering the respective and specific needs for a particular scenario, which discourages effective communication, because every pertinent interaction is wrongly seen as a time-wasting activity.
3. Tools are always helpful as long as understood why and what the tool is to be used for. 4 Relying too much on Computer Aided Project Tools
4. any tools that are not applicable. Processes need to be scaled to the project size (effort requirements risks and costs)
5. All of them as focus on outputs and constraints is unhelpful and with a mastery tools can be created and amended to fit the environment
6. Micro management from leadership, fire drills
7. A compliance-based PMO (as opposed to a skills and support focused PMO) is not particularly helpful in project success
8. A combination of 7&8
9. word documents as a representing tool
10. any tool that does not contribute positively to 8 above resulting in wasted resources with no benefit
11. Agile, methodologies such as BPI which is what Dell used until just recently, it cut out the entire upfront decision of the project and wasted lots of money.

12. Off-the shelf or “method of the month” random purchases.

Do you manage project differently today than you have in the past. Describe how your approach is different today than in the past.

1. Absolutely. In the past I tried to stick to the guidelines and rules of PMI. Now I realize that unless leadership understands PMI and supports it, that isn’t going to affect their satisfaction. It’s been critical to educate my stakeholders to what aspects of PMI help a project’s success, but on some issues it’s been an uphill battle to convince them of the benefit of spending so much time on preparing for a project than jumping into it.
2. In the past I wrongly believed pertinent interactions to be a disturbance. Obviously, as I noticed the conflicts arise, I gradually perceived the true need for real communication to occur, taking care not to cross the different responsibility boundaries and always adjusting the resources suitably.
3. Yes - more site visits and less emails, very direct and leading questions which correlate with milestone upcoming activities.
4. I try to step outside the project - try to gain more of an overview before I start and regularly to monitor the current condition. The team progress has become more vital and I try to make the best out of the available resources. I realized PM is mostly about communication.
5. Of course experience makes it simpler to plan and document plans. I managed projects early in my career successfully because I worked in an organization (Honeywell) that had excellent PM delivery management systems and provided considerable training and support. Later working without support systems, I used

experience to scale my own systems to the project and plan and review. There is not much difference from the past except that tools are now screen based rather than Mylar sheets and paper.

6. Better stakeholder engagement
7. Yes, better upfront planning
8. I pay much closer attention to my business team than I did when I was first starting out. They own the products I deliver. If I expect them to participate as owners, it usually pays off in a better end product.
9. I think I keep to the key components of good planning, high level buy in and communications, I probably take more time to consider organizational risk and governance as these have become components of business running recently, I also value the impact of stakeholder engagement (including users) more now that previously, these issues need to be planned within the project as they can be time consuming. A good understanding of finance especially where considerable amounts of £ may be moved is essential and finally I now have a better understanding of the requirement to fully understand the political and policy requirements underpinning the values of the project.
10. Sure, due to quick decisions required, I have to acquire complete data in time for taking decisions.
11. more focus on strategic value with stakeholders, and on resource allocation/management with throughput at required quality as key drivers
12. Yes, continue to gain experience, and Sigma Six helps with PMP, along with just many years of looking at lessons learned. Even fully certified with MS Project

server and project for workstations. Have to be flexible depending on the company.

13. Not really; but many others are now adopting the methods we have used, marketed and supported for over 30 years.

What advice or guidance would you give a person newly assigned to the role of project manager regarding project success or failure?

1. Find a good mentor from the same industry who's been there and done that. Follow their footsteps.
2. Bear in mind that all sorts of discussions are surely going to happen, but know your formal duties completely, as well as the major strategic goals attained by their respective project objectives. This is the primary guidance when it comes to making decisions and preventing execution to stall.
3. Solicit per advice or upcoming items - continually measure weekly success. Weeks turn into months.
4. Communicate, ask questions, don't shy back, and be aware of different agendas of your team / superiors and other parties that might be also part of the project.
5. plan upfront and document review everything monitor progress against plan and re-plan communicate appropriately and clearly warn of upcoming issues early advise delays immediately praise your team don't wing it work hard
6. Ensure they understand what the purpose of the project is and ensure they contact people who will be involved or whose expertise is needed as early as possible. Learn to understand their actions will have consequences and to anticipate what might happen

7. Find a mentor
8. Ensure a clear understanding of the problem statement and how the project is expected to address this. Then communicate clearly and thoroughly for the duration of the project.
9. Check, check and again check at the onset that the project plan and outcomes is agreed and supported by senior levels, ensure that the governance of the project includes regular reports to senior management and that there is a requirement for them to feedback. Have a system in place to discuss delays/ issues before they become a real problem, understand who the PM Manager is. Be flexible, be honest regarding data and info that may require the overall project to be revised, have a good communication strategy in place including the press, have financial management support available as required, be visible and communicate/update the project as much as possible.
10. find out what you stakeholders view as success (and failure if that is not clear), and find out what resources will be available to you and find out what your team really thinks about probability of success - immediately address any issues raised by asking these questions
11. Make sure it is adequately funded, resources are going to be available, and there is clear buy in from all stake holders, don't be so caught up on the time frame if it has to go longer to finish. The goal is a quality product.
12. 1. Manage the project end-to-end, not just execution.

    2. Engage all stakeholders early and often

3. Tailor work assignments to strengths and with an understanding of the need for new challenges for team members.

4. Manage your manager--and your manager's managers—delicately

Do you think there is a relationship between experience, qualifications, certification, and project success or failure? Please explain your response.

1. There's a relationship between experience and project success. Certification only assures that the person is very familiar with the way a project should be managed theoretically, so if the topic arises in conversations with the stakeholder - there's an informed discussion. There's a relationship between the ability of a PM to understand the stakeholder and stakeholders and produce what they are requesting.
2. Considering all four aspects simultaneously, sincerely no. I believe there is a relationship between experience and project success or failure, because making a project become reality is the effective task of dealing with different people; and developing such expertise can only be realized by practicing it.
3. Yes - certifications and qualifications can be attained through study and educational attendance however the experience of utilizing the above items will demonstrate clearly how well the individual can manage the project toward success. Without the experience - the qualifications and certifications may not have the value or consistency of successful projects.
4. I think experience is invaluable - because you gain insights for certain project types that you cannot learn. In my opinion certification and qualification give you a good starting point, but should not narrow you down on methods - instead give

you a selection of tools you feel comfortable with, while you are free to ignore others. Overall the better qualification is and the more experience you have and your team have, the lower the risks for failure are. But since projects have a risky starting point, there is hardly a way of ignoring the (ever) present chance for failure.

5. In general or broad terms, yes. The correct knowledge is what counts most. Without knowledge you do not know how to deliver. Experience is the best way to attain knowledge; however, it is often subjective. Qualifications result from attaining knowledge through coursework and courses are outside the subject culture of your workplace so are more general and can provide a broader and more objective knowledge and insights that may be directly or future applicable. I am not certified but I do see benefits in certification for people selecting PMs.
6. Experience to an extent, having a certificate not at all as this tests the ability to remember and does not help with critical thinking skills or that the environment in which the project is being delivered is changeable, ambiguous and volatile. Only experience may help when a stakeholder does not deliver as promised.
7. Yes, experience give leader a significant edge, provided they have learned from past issues/problems/failures
8. I think experience allows a PM to learn from their mistakes and develop a more rigorous practice that should over time contribute to success. Also, education and familiarity with good process can help a PM avoid common pitfalls.
9. I think there is value in understanding the organization/product, many project managers bought in spend time getting to know this and this alone can make staff

and other managers reluctant to engage, the right experience, skills and commitment is required to lead projects. Qualifications, certification etc. are not as important as experience, knowledge of the product and confidence and commitment to succeed.

10. Success is highly dependent on experience in working with people, but not just on project experience. Certification (if done properly based on competency assessments, which excludes PMP for example) stems from working on projects some but not all of which might have succeeded, and could be considered as an indicator of a certain level of experience as well as some ability to apply lessons learned from that experience to new problems effectively. However, it is clear that certification does not contribute to project success, but rather that the experience gained and ability to apply that experience to new situations (and that led to certification) are the key contributors to success. Qualifications may indicate presence of necessary (mandatory e.g. engineering degree for project manager with design responsibilities, or desirable e.g. degree course in project management or relevant course linked to project product) knowledge in the project manager, and thereby weed out some candidates who would have higher chance of causing project failure through lack of knowledge, but I do not see qualifications as a key factor in project success in mature environments where key knowledge usually matching that gained from qualifications is already built into the process/methodology, except where we consider prior experience as a qualification perhaps. It is important to recognize that qualifications and to a lesser extent, certifications, apply to individuals, and project success is largely

determined by organizational competency and capabilities. The project manager can be very experienced and highly qualified, but project will still fail if the organization has no ability to support and execute projects successfully.

11. Yes, those with PMP, and other certs do increase the success rate of projects, along with subject matter knowledge of the industry such as IT or security. Say someone is going to have to upgrade Exchange Server within some project. Someone not knowing this like me might estimate a month. Many large companies that part of an upgrade can take a year. I have done complete NT to Windows 2000 roll outs for Fortune 500 companies. Total disaster center pm work. Plenty of projects I don't take on as I know they will not be a success. So many projects where say a street is going to be put in. Voters have to approved this. Money is made available with a start and end date with zero input into the project. Not a project I would step into. Many times I am asked to rescue a project. There is a big misunderstanding of what a PMP can do. I won't rescue a project, but most of the time it comes down to upfront planning was skipped, no baselines to even compare the current state of the project. Don't step into that. I have an international known ability also with disaster recovery. Stakeholders are confidential.
12. Yes, but there is much more than that. Those who understand their own personal style, and complement that with the engagement of others will improve their success. Those who communicated most effectively will do better than all the factors in the question. Certification only recognizes knowledge, competence or performance; it does not develop it.

Do you have any thoughts, perceptions, insights, or comments about project success or failure not addressed in the questions above?

1. No
2. Yes - internal support, the project manager is not alone is any project delivery item. The PM and Management must understand it is an open discussion environment as any project begins its planning phase.
3. n/a
4. Two key factors cause project failures that are perhaps not touched here. One is lack of strategic consensus and clarity in the organization, resulting in the wrong projects being funded. The other, related to the first, is inability to balance resource allocation across operations and projects effectively.
5. Knowing that some projects are successful even though they do not get completed, as they can justify future projects.
6. See responses to

AUTHOR BIOGRAPHY

Ray C. Hickson lives in Silver Spring, Maryland, just outside of Washington, DC. Ray is originally from the small town of Saint Matthews, South Carolina. Ray attended South Carolina State University (SCSU) in Orangeburg, South Carolina, earning a BS in Civil Engineering in 1983. In 2003, he graduated from Troy State University of Montgomery (TSUM) located in Montgomery, Alabama with a Masters in Management.

Ray has worked for several major engineering firms primarily in the capacity of Project and Program Management. From 1983 until 1990 He worked at Millstone III in Waterford, Connecticut, Davis-Besse in Port Clinton, Ohio, Browns Ferry in Decatur, Alabama, and Connecticut Yankee in Berlin, Connecticut Nuclear Power Stations. Ray transitioned from commercial nuclear power to national defense in 1990. Ray worked Savannah River Site Reactor Restart program, Savannah River Lab (SRL), Savannah River Site Nuclear Waste Processing, U.S. Department of Defense chemical demilitarization programs from 1990 until 2003.

From 2003 to 2013, Ray work as a program manager supporting information technology at the National Security and other agencies. Ray is currently working as a Program Management Consultant supporting Department of Homeland Security Customs and Border Protection design and construction projects.

Ray's hobbies include computers, home improvements, and gardening. Ray is an avid fan of science fiction books and movies. He can be reached at rchickson@yahoo.com.